

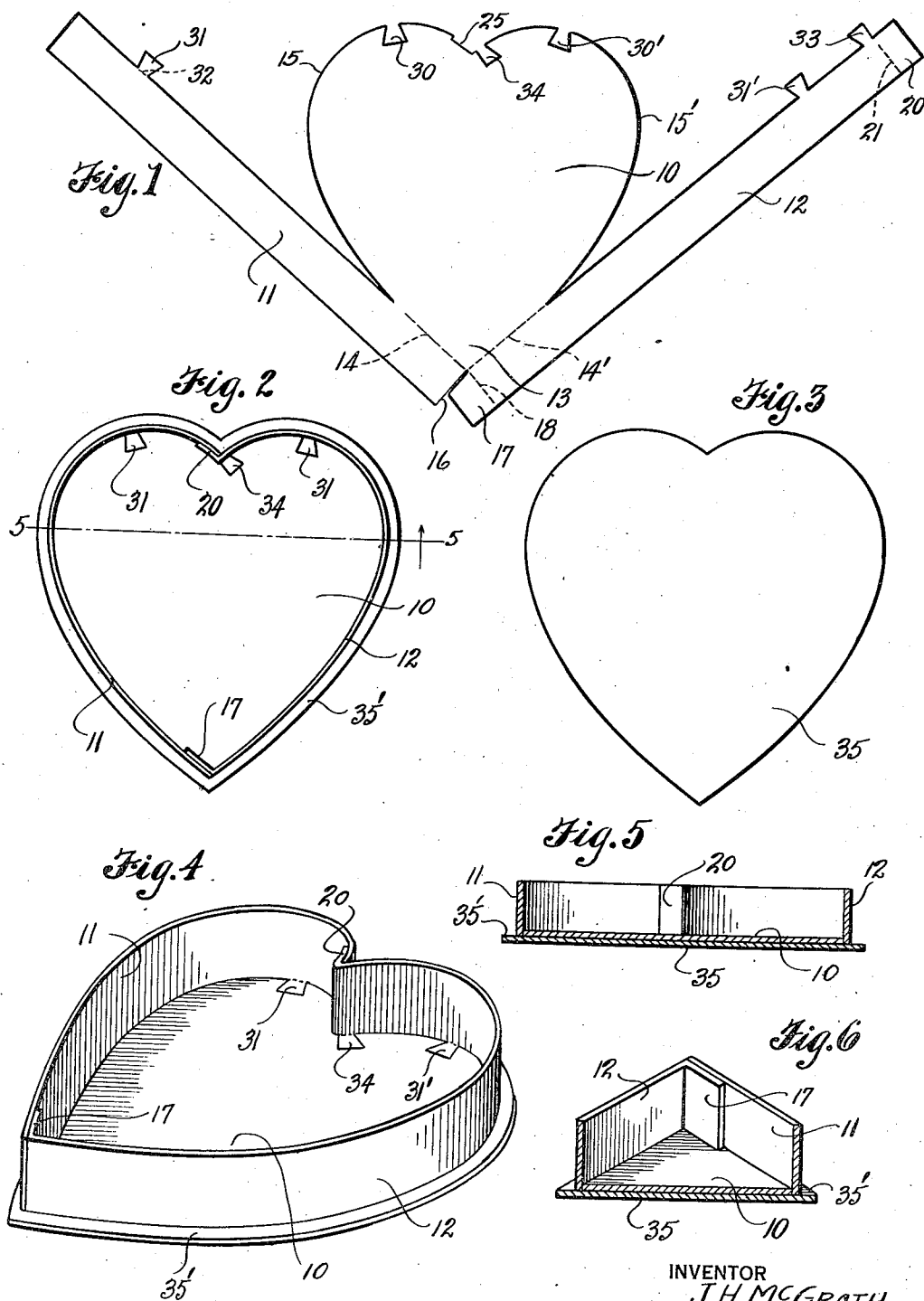
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CARDBOARD BOX

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CARDBOARD BOX

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8 Claims. (Cl. 229—8)

This invention relates to the making of boxes, or containers, from cardboard, or from any similar flexible material that is adapted to be cut, scored, glued and shaped as hereinafter described. More particularly, the invention relates to the making of heart-shaped boxes.

It is the principal object of this invention to expedite the manufacture and to reduce the cost of making heart-shaped boxes from cardboard, or similar material by the provision of a novel manner of cutting, forming, assembling and uniting the parts thereof.

More specifically stated, the objects of the present invention reside in the provision from cardboard, of a heart-shaped box body, comprising a bottom forming section that is of heart shape, and side wall forming sections integral therewith; these parts being die-cut from a flat blank of material, and so scored, or creased, as to provide accurate and easy bending of the side wall forming portions to upright position for shaping to the configuration or curvature of the edges of the bottom section and for a secure and effective connection therewith whereby to retain the box body in shape for its intended uses.

It is a further object of this invention to provide a box body, as above stated, wherein the side wall forming portions are equipped at the lower edges of their free ends with integral tabs, and the bottom forming section is formed with recesses, opening to the edge thereof at such location and so designed as to receive the said tabs of the wall sections therein in interlocked holding connections that insure the permanency of the wall structure.

Still further objects of the present invention reside in the combination of a container or box body, formed in the manner above stated, with a base member that is designed to strengthen as well as to enhance the appearance of the box by the provision of a projecting flange about the side walls.

It is a still further object of the invention to provide a box body structure that can be made either manually or mechanically, with a minimum number of operations.

Other objects of the invention reside in the various details of construction and combination of parts, as will hereinafter be fully described.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawing, wherein—

Fig. 1 is a plan view of the prepared box body blank, comprising the heart-shaped bottom section and integral opposite side wall sections as they would appear when die-cut from a flat sheet

of material preparatory to being shaped and joined together.

Fig. 2 is a plan view of the box body with side walls folded upwardly and shaped to the curvature of the bottom section and interlocked therewith, also showing the box body applied to a base section that provides the projecting flange.

Fig. 3 is a plan view of the flange forming base piece.

Fig. 4 is a perspective view of the present box body structure as assembled upon the flange forming base section.

Fig. 5 is a vertical cross section of the box as seen on line 5—5 in Fig. 2.

Fig. 6 is a perspective view of the interior of the box body particularly illustrating the connection of the ends of the wall forming strips.

Explanatory to the present invention, it will here be stated that boxes and containers of the present kind are intended to comprise a bottom portion and a cover portion. However, since both of these parts would be identical in construction with the exception that the cover section would be made slightly larger in order that it may fit telescopically over the bottom section, I have, in the following, described only the manner of constructing a bottom portion, with the understanding that this description would apply equally to the formation of the cover portion.

It will be mentioned also that I make no broad claim to the use of the flange base except in combination with the present box body structure, since it is a common practice in the art to use such a piece. However, to my knowledge it is the general practice to provide the wall forming members with edge tabs for glued connection with the base flange, then to overlies the tabs when glued in place, with a false bottom insert that is fitted into the box body. To my knowledge, no box body has heretofore been made from a one-piece, heart shaped bottom section, and side wall sections that are integral therewith in their original blanked out form and adapted to be shaped without deviation, to the curvature of the edges of the bottom and secured functionally thereto through the mediacy of interlocking parts that insure the stability of the structure.

Referring more in detail to the drawing—

The bottom section of the present box body is designated by reference numeral 10 and this section has a shape that is generally designated as heart-shaped, as will be understood by reference to Fig. 1. The opposite side wall forming portions designed for completion of the heart-shaped box body are designated, respectively, by reference numerals 11 and 12, and are shown as being in the form of straight, narrow strips of material extending from the point end of the section 10 in angular divergence at opposite sides

of the latter. It is a feature of this invention that these strips 11 and 12 are integral with the bottom section 10, and are disposed at opposite sides of that portion of the bottom section that is immediately adjacent the point, and which is designated at 13 in Fig. 1.

It is intended, especially in the mechanical production of these boxes, that a die shall be used to stamp, or cut out the entire bottom wall section 10, including its component side wall forming portions 11 and 12, from one blank or sheet of material, and that the formation of these parts, ready for assembly, shall whenever practical be effected in a single operation. Furthermore, it is intended that suitable means shall be provided whereby, in the same operation, certain parts shall be scored, or creased at predetermined places to facilitate the subsequent folding and interconnection of parts. Also, that by the same operation, the wall forming strips 11 and 12 shall be equipped with the previously mentioned securing tabs and the bottom section shall be notched or recessed to receive the tabs.

In order that the side wall sections 11 and 12 may be folded upwardly perpendicular with reference to the bottom section 10, substantially straight lines of scoring as at 14 and 14' are formed, extending from the extreme point of the heart-shaped piece 10 to the opposite sides of the section, merging into the curved opposite side edges 15 and 15' of the section 10. By reason of these lines of scoring being straight, the strips 11 and 12 may be folded along these lines to a perpendicular position relative to the base 10 without warping and the free ends may then be easily bent laterally to conform to the curvature of the side edges 15 and 15' of the piece, and about the substantially circularly curved top edges of the opposite lobes of the heart-shaped piece. By cutting these strips 11 and 12 to an exact length, they may be brought together at the convergence of the curved edges 15 and 15' within the vertex of the recess formed between the two lobes of the heart-shaped body.

By reference more particularly to Fig. 1, it will be observed that the side wall forming strip 11 has a square cut end edge 16 even with the point of the heart shaped body, and it will further be seen by reference to Fig. 2, that the length of the strip 11 is such that when shaped to the corresponding edge 15 of the body 10, its free end will terminate in the vertex of the recess formed by the two lobes of the heart-shaped body at the top thereof, as it is shown in Fig. 1. Also, it will be noted by reference to Fig. 1 that the opposite side wall forming strip 12 has an extended tab 17 at one end set off by a line of scoring 18 perpendicular to the side edge of the strip and intersecting the point of the heart, and at the other end of this strip, is a similarly extending tab 20, set off by a transverse line of scoring 21. These two tabs, 17 and 20, are adapted, when the side wall forming strips are in upright position, to be bent laterally and brought into close overlapping relationship with the ends of the opposite wall forming strip, as noted in Fig. 2, for securement thereto, to retain the upright position of the walls. Also, it is shown in Fig. 1 that the top edge of the body piece 10 is recessed, as a 25, to seat the lower edge of tab 20 therein and thus allow the close fitting of the lower edge of the strip 11 with the corresponding edge of the piece 10.

In order to insure a close fitting joint and a secure holding connection between the end por-

tions of the wall forming strips 11 and 12 as applied about the curved portion at the top of the heart-shaped section 10, I have provided dove-tailed recesses 30 and 30' in the latter, opening to the top edges of the two lobes of the heart-shaped piece, and have formed the strips 11 and 12 with integral dove-tailed tabs 31 and 31' extended at such position as to be fitted in these recesses. The tabs are set off by lines of scoring 32 which provide for their being bent at right angles with reference to the wall strips for pressing into the recesses. There is also a similar dove-tailed tab 33 near the end of the strip 12, and this is arranged to seat in a recess 34 adjacent the vertex of the recess between the lobes of the heart-shaped body, thus to securely and accurately maintain the heart shape of the body.

It will here be stated that, while the present drawing shows the strips 11 and 12 equipped with one and two tabs, respectively, the number to be used could be increased in accordance with the size of the box or to take care of any special requirement, and that they could be located at close intervals, and made larger or smaller as conditions of use required.

The base, or what may be termed the flange section on which the box body is finally fixed, is designated at 35 and is symmetrical in shape to the section 10, but somewhat larger, as understood by reference to Figs. 2 and 3, so that when these parts are assembled, the edges of the piece 35 will project somewhat beyond the body to form the flange 35', as will be understood best by reference to Fig. 2. The piece 35 would preferably be die-cut, and made from cardboard.

Assuming that the blank for the box body is cut out in the form as shown in Fig. 1, either by mechanical means or by hand, the box body would then be formed therefrom as follows:

First, those surfaces of the wall tabs 17 and 20 at the ends of strip 12, which are to be the bottom surfaces in the finished box, and likewise the bottom surfaces of the dove-tailed tabs 31, 31' and 33, which are integral with the strips 11 and 12, as well as the bottom side peripheral areas adjacent the edge of the body 10, would be stenciled with a suitable glue. Then the dove-tailed tabs of the strips 11 and 12 would be bent laterally at right angles to the strips, and the strips formed to the curved edges 15 and 15' of the heart-shaped bottom, and the free ends brought together in the vertex of the recess at the top of the heart-shaped section 10 with the tab 20 lapping the inner surface of the adjacent end portion of the strip 11. Likewise, the tab 17 at the point end of the body will be overlapped with the inner face of the strip 11; these parts being pressed together to cause the glue to adhere and hold the side walls of the box body in upright position. Then the dove-tailed tabs 31—31' and 33 of the two strips 11 and 12, are seated in their respective notches 30, 30' and 34, in the section 10 and the box body as thus formed, would be placed symmetrically upon the base section 35 and the parts pressed together to cause the glued surfaces to secure them in the relative positions shown in Figs. 2 and 4; it being understood that the glue on the bottom edge areas of the part 10 and on the dove-tailed tabs, will effect the uniting of these parts.

With the box body thus formed, it may be decorated in various ways to suit any particular use. A cover section, likewise made, but of

such dimensions as to telescope therewith, may be applied.

The present mode of construction has many advantages over the ordinary types. First, the entire box body blank, including bottom and side wall portions may be die-cut in a single operation. Second, the mode of assembly of the component side walls with the bottom effects a secure and substantially rigid connection that adds to the utility and life of the box. Third, the box body may be easily applied to the flange base and a secure connection made in a simple and economical manner.

Boxes of this kind may be made in various sizes, and in different proportions from that shown without departing from the spirit of the invention, and it will be understood that details of construction; for example, in the shape, number and location of tabs, might likewise be varied to some extent with the size or capacity of boxes.

Therefore, it is not intended that the claims shall be limited to details, but that they shall be given an interpretation that is commensurate with the invention disclosed.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. A one-piece blank for a box body, comprising a bottom forming section of heart-shaped contour and opposite side wall forming strips of rectangular form extending in angular divergence from the point of said bottom forming section and at opposite sides thereof; said strips being integral with that portion of the bottom section immediately adjacent the point and scored respectively along lines converging at the point of the bottom section and alined with the inner longitudinal edges of the strips for upward bending of the strips at right angles to the plane of the bottom section and for their shaping to the contour of the bottom section.

2. A one-piece blank, as recited in claim 1, wherein one of said side wall forming strips is equipped at its free end with an extending tab adapted to be folded and overlapped with the corresponding end of the opposite strip for securement thereto.

3. A one-piece blank as recited in claim 1, wherein said side wall forming strips have lengths equal respectively to the corresponding peripheral distances from the point of the heart-shaped bottom section to the point of convergence of the said edges, and one of said strips has tabs extended beyond its ends adapted to be folded to overlap the end portions of the opposite strip for securement thereto.

4. A one-piece blank for a box body comprising a bottom forming section of heart-shaped contour, formed at intervals along its edges with recesses, and opposite side wall forming strips of rectangular form extending in angular divergence from the extreme point of the bottom section at opposite sides of the bottom, and provided at their inner edges with extending tabs; said strips being integral with the bottom section along opposite sides of that portion thereof immediately adjacent the point and scored respectively by lines converging at the point of the bottom section and alined with the inner longitudinal edges of the strips for upward bending of the strips and for their shaping to the peripheral edges of the bottom section; said tabs being scored for bending to right angles to the strips

and adapted for registration and securement in the recesses of the bottom section.

5. A one-piece blank for a box body, comprising a bottom section of heart-shaped contour, formed at intervals with dovetailed recesses opening to the edge thereof, and opposite side wall forming strips of rectangular form, extending in angular divergence from the point of the bottom forming section at opposite sides thereof; each strip having a length corresponding to the peripheral distance from the point to the center of the vertex of the depression that is opposite the point, and provided at intervals along their inner edges with extended tabs of dovetailed form; said strips being integral with the bottom section adjacent its point and scored respectively along lines converging at the point of the bottom section and alined with the inner longitudinal edges of the strips for the upward bending of the strips and for their shaping into conformity with the peripheral edge of the bottom; said dovetailed tabs being scored along lines alined with the inner edges of the strips and adapted to be bent at right angle to the side walls and to be interlocked in the dovetailed recesses, and there being tabs at the ends of one strip adapted to be bent into overlapped relationship with the end portions of the other strip for securement thereto.

6. A box body of the character described comprising a flat bottom section of heart-shaped contour, and opposite side wall portions extending from the point to the angle of the heart; said side wall portions being integral with the bottom section for a short distance leading from the point of the heart, and with their lower edge portions engaged flatly with the edge of the bottom about the opposite sides and to the angle of the heart; said bottom section having a dove-tailed recess opening to the edge thereof adjacent the heart angle and the side wall portion for that side having a bottom edge tab fitted in said recess in an interlocked connection and having an extending end tab overlapped with and united with the ends of the opposite wall forming portion.

7. A box body as recited in claim 6 wherein the bottom section is recessed at its edge adjacent the angle of the heart to seat the lower edge portion of the end tab whereby the ends of the two wall portions are united.

8. A box of the character described comprising a bottom section of heart-shaped contour and opposite side wall portions extending from the point to the angle of the heart; said bottom section being formed at intervals along its edges with dovetailed recesses and said side wall portions being integral with the bottom section for a short distance from the point of the heart and shaped to the contour of the edges of the bottom section, and being provided at their lower edges with integral, laterally turned tabs interlocked in the dovetailed recesses; one of said side wall portions having extended tabs at its ends overlapped with and adhesively secured to the ends of the opposite wall portion, and a flange base of heart-shaped contour of larger dimensions than the base section, applied flatly to the under side of the bottom section and adhesively secured thereto and to the tabs of the side wall sections to secure the parts functionally together; said flange base extending symmetrically beyond the bottom section of the body.

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