

March 12, 1929.

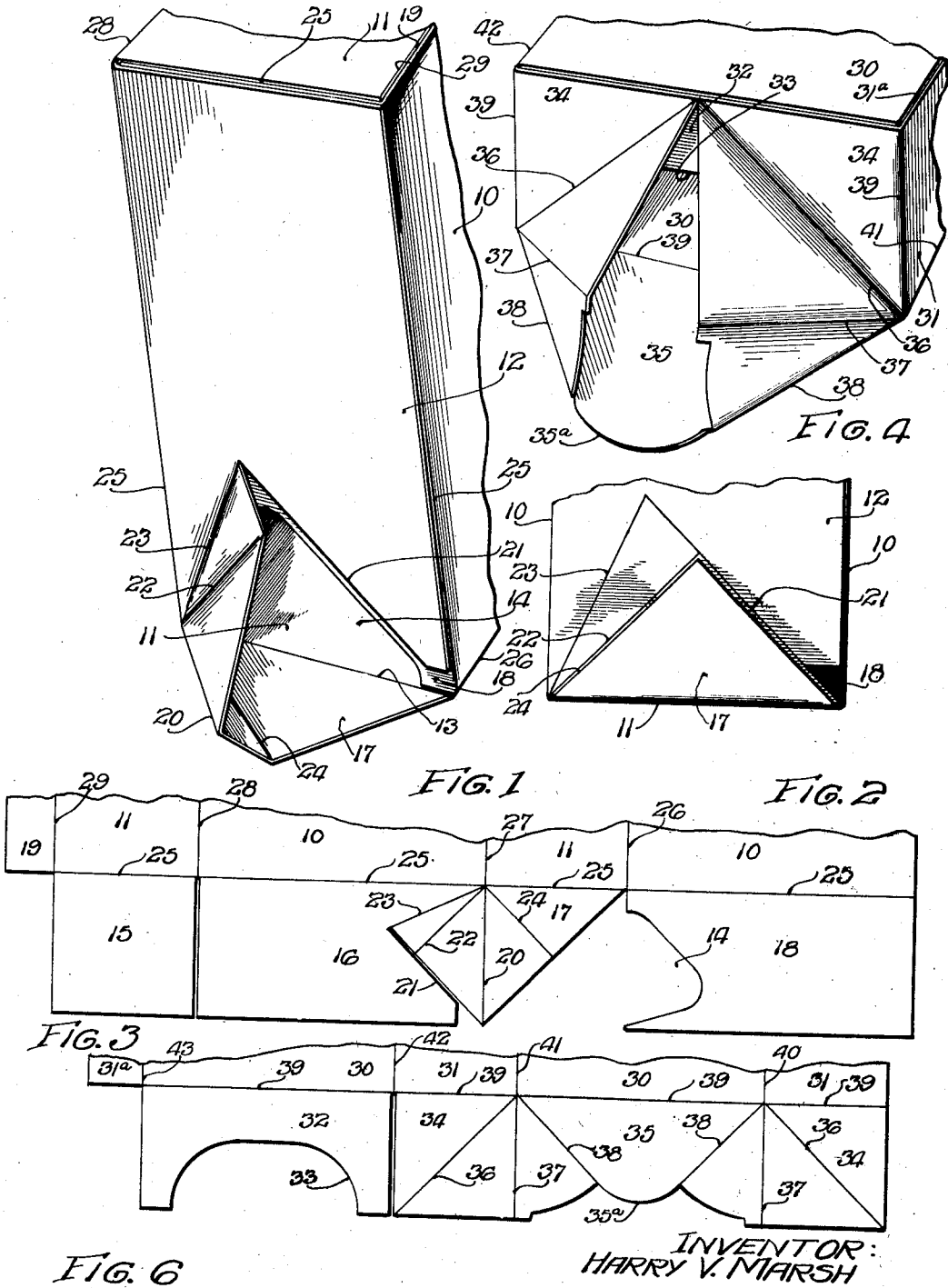
H. V. MARSH

1,704,987

BOX

Filed Feb. 2, 1925

2 Sheets-Sheet 1



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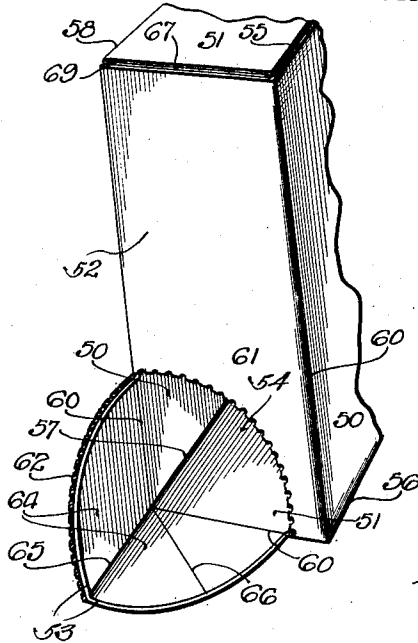
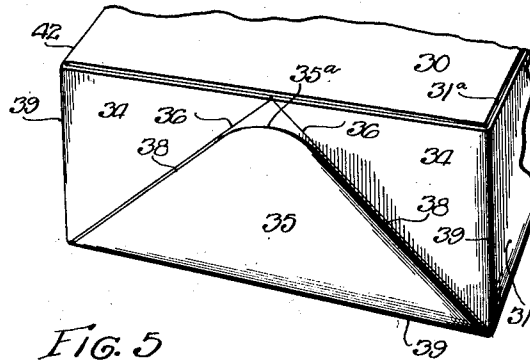


FIG. 5

FIG. 7

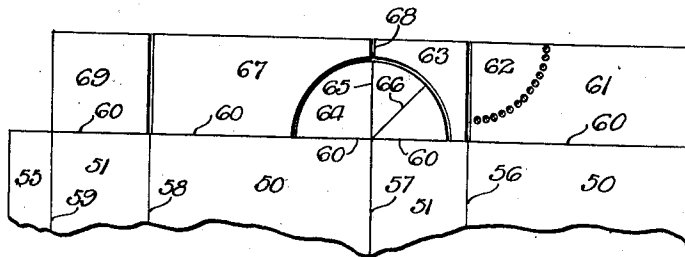


FIG. 9

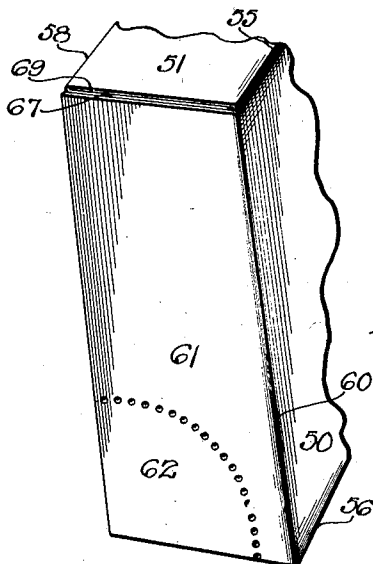


FIG. 8

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UNITED STATES PATENT OFFICE.

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BOX.

Application filed February 2, 1925. Serial No. 6,413.

The present invention relates to box construction and particularly to a carton or box having a spout produced by a novel articulation of the material from which the top of the box is formed.

Among the objects of the invention are the following:

The provision of a box having a self contained spout;

The adaptation to box construction of a blank so articulated as to produce a spout adapted to serve also as a closure member;

An unique blank and novel means for folding such blank to provide a box, and a closure member and spout therefor;

An advantageous design for spouted box construction making unnecessary the use of more material than for conventional structures; and

An improved box or carton formed from a single blank of material and including as a part thereof, a spout adapted to provide a closure member.

These, and such other objects as may hereinafter appear, are attained by the novel construction, combination, and arrangement of the several elements comprising the box structures made in accord with the invention disclosed in the accompanying drawing, hereby made a part of this application, and in which:

Figure 1 is a fragmentary perspective view of the top of a box made under the teachings of the invention, the foldable spout being in open position;

Figure 2 is a top view of the same box with the spout folded to provide a closure member;

Figure 3 is a fragmentary plan view of the blank used to form the box illustrated in Figures 1 and 2;

Figure 4 is a fragmentary perspective view of the top of a second box embodying the invention;

Figure 5 is a top view of the second box embodying the invention in closed position;

Figure 6 is a fragmentary plan view of the upper end of a blank employed for forming the box illustrated in Figures 4 and 5;

Figure 7 is a fragmentary perspective view of the top of the third box embodying the invention;

Figure 8 is a top view of the same box with the spout folded to provide a closure member; and

Figure 9 is a fragmentary plan view of the

upper end of a blank employed for forming the box illustrated in Figures 7 and 8.

Like reference characters are used to designate similar parts in the drawing and in the ensuing description.

Figure 1 illustrates a box having sides 10, ends 11, and a top 12, manufactured partly after the processes common to the art of box-making, and of the materials usually employed in box and carton production, the invention residing in the parts of the top 12 employed to form a spout 13 about an aperture or opening 14 in top 12, and which spout, in Figure 2, is shown folded to provide a closure member for said aperture 14.

In the plan view shown in Figure 3, the die-cuts and scores required upon one end of a blank to form the box illustrated in Figures 1 and 2, are disclosed. The undisclosed end of the blank illustrated in Figure 3 is die-cut and scored in any of the usual manners to provide a conventional closed end for the carton described here.

From left to right, Figure 3 discloses an end 11 having an extension or flap 15 rectangular in form and not different from the usual box end flap; an adjacent side 10 provided with an extension 16 separated by a die-cut from the material of flap 15 in a straight vertical line and containing an oblique die-cut and two scores later to be described; an end 11 having an extension portion 17, triangular in shape and extending across the entire margin of said end 11, the oblique external margin of extension 17 continuing from the near corner of the extension 16 to the margin at the opposite side of end 11; a side 10 having an extension of flap 18 coextensive therewith and containing a rounded (but substantially triangular) opening (forming the aperture 14) arranged therein, generally off center so that the material removed from flap 18 is taken from a point away from the margin edge of side 10 and extends upwardly to the outer edge of extension 18; and an extension section 19 upon the left hand margin of end 11 and coextensive therewith. The extension 19 could be placed with equal facility at the opposite end of the blank illustrated and upon the side 10.

Thus cut, the blank in reality presents but three extension portions, 15, 18 and 16 and 17 which are integral, a score 20 marking the point of the division between part 16, the extension portion of one side 10, and part

17, the extension portion on the adjacent end 11.

In addition to the score 20, the part 16 is die-cut on a line 21 substantially at a ninety degree (90°) angle to the external oblique margin of section 17, such cut 21 extending about two-thirds of the distance to the juncture of side 10 and its extension 16.

From the internal extremity of score 20, two scores, 22 and 23, radiate into extension 16, the first 22 being perpendicular to the cut 21, and the other 23 extending to the internal extremity of said cut 21. The material of extension 16 adjacent the outer end of line 21 may be cut in the form, as shown or rounded, to facilitate the production of neat articulations and cleanly gluing operations.

In section 17, a score 24 at a ninety degree angle to the oblique outer margin of said extension is run to the point of coincidence of scores 20, 22, and 23, the score 24 being substantially parallel to the cut 21, in extension 16.

A score 25 extends from one end of the blank to the opposite other end thereof, separating the sides 10 and the ends 11 from the flaps or extensions 15, 16, 17 and 18. Additional parallel scores 26, 27, 28 and 29, perpendicular to score 25, separate the sides and ends, 10 and 11, and the end 11 and extension 19.

When cut and scored as herein indicated, the blank, partly shown in Figure 3, is ready to be folded. When folded upon scores 26, 27, 28 and 29 and the flap 19 glued to the opposite side 10, the bottom of the box may be closed by gluing the several flaps at that end, the operation of closing the bottom being conventional to the box-making art.

When the top is to be closed, flap 15 is first turned in, flap 18 is folded thereover and glued, and then flap 16 is folded over extension 18 and glued thereto, the glued section not extending beyond the cut 21 or the score 23.

A double rimmed aperture 14 is thus formed, the edge of the opening in flap 18 forming the projecting internal shoulder in said aperture, and the material of flap 16, on one side of cut 21, the external or larger section of the opening 14.

The gluing of flap 16 upon flap 18 automatically forms the spout 13 shown in Figure 1, said spout having four sections to give it flexibility and adapting it to ready folding. The spout sections are that portion of material between scores 25 and 24, that portion of material between scores 24 and 20, that portion of material between scores 20 and 22, and the small section of material between scores 22 and 23.

To close the aperture 14 and give to the carton the contour disclosed in Figure 2,

the last mentioned two sections are flattened out parallel with top 12 to cover aperture 14, leaving projecting upwardly the two sections of the material falling between scores 25 and 24, and between scores 24 and 20, both of the same general size and shape. These are conjointly folded inwardly upon top 12 over the sections of material between scores 22 and 20. Said folded down sections are held down upon top 12 by an adhesive strip or by a paper cover which is frequently pulled or wrapped over cartons to insure sanitation and the preservation of the contents thereof. To open the carton, the sections last folded down are raised, whereupon the spout may be readily formed by lifting the sections first pressed down.

In Figures 4 and 5, a second form of the invention is disclosed. The bottom, sides and ends of the box are formed in the usual manner. The sides are designated 30 and the ends 31, and upon one side 30 is a short extension 31^a for gluing the box longitudinally. A top is formed by an interlocking of extensions or flaps upon said sides 30 and ends 31 just as in the previously described form of the invention. One of said sides 30 has an extension 32 coextensive therewith and having at its outer margin a cutout central portion 33 shown in full lines in Figure 4 and in Figure 6. Each of ends 31 is provided with an extension 34, one side of which is die-cut at the outer side to separate it from the sheet material from which the blank is cut. Said cuts are respectively a continuation of the articulation between the side 30 carrying extension 32 and the end 31, and the articulation between opposite end 31 and side 30. The other edge of the flaps 34 is integral with a flap 35 coextensive with the second side 30, the outer edge of flap 35 being serrated as indicated in Figure 5 to provide a lip 35^a.

Each flap 34 has a score 36 extending from the extreme outer corner thereof obliquely to the oppositely inside corner adjacent side 30. Two parallel scores 37 separate flaps 34 from flap 35.

Upon flap 35 are two diagonal scores 38 which extend from the intersection of scores 36 and 37 toward the end of lip 35^a where they would intersect but for the removal of material in the serrated edge of flap 35, such removal of material determining scores 38 before such intersection occurs. The serrations in flap 35 provide in addition to the central lip 35^a for the ready manufacture of the box, facilitating the articulation of the material and operation of the spout. A continuous score 39 separates the sides 30 and ends 31 from the extensions 33, 34 and 35, and parallel scores 40, 41, 42, and 43 separate said sides and ends and end 31 and extension 31^a.

After the box is folded longitudinally

and glued at extension 31^a to the opposite side 30, the flap 32 is turned inwardly. Upon flap 32, are glued so much of the flaps 34 as is bounded by the scores 36 and 39. A spout and closure member is formed of the remaining unglued material of flaps 34 and by flap 35. Such spout comprises five sections of material, the two remaining and unglued sections of flaps 34 bounded by scores 36 and 37, and the three sections of flap 35, separated one from another by scores 38. Accordingly as to whether the unglued sections of flaps 34 rests upon the margin of flap 32 about aperture 33 or are pulled upwardly from said flap 32, the five sections just referred to are a closure member or a spout.

When used as a closure member, the unglued sections of flaps 34 are pressed inwardly as above indicated, and the three sections of flap 35 bent thereover the sections thereof between scores 37 and 38 falling under the section between scores 38. To open, the folded sections of flap 35 are bent outwardly and separated, such separation concurrently raising the unglued portions of flaps 34. The aperture in the top of the box through opening 33 in flap 32 is opened by spreading the sections 34 and 35 to form a spout, and the contents of the box may then be removed. When the box is to be closed, the spout is folded over the opening 33 in the manner hereinabove indicated. Before first used by a consumer, the box is held tightly closed by an adhesive strip or paper cover adapted to compress the folded spout sections.

In Figures 7, 8 and 9 the third form of box embodying the invention is disclosed. Reference should be had first to Figures 7 and 8 where a box having sides 50, ends 51 and a top 52 is disclosed. A folding spout-like portion 53 is adapted to close an aperture 54 in top 52 when in folded or closed position, as shown in Figure 8.

Reference should now be had to Figure 9. This is representative of a blank adapted to form the box disclosed in Figures 7 and 8. Reading from right to left the side 50, the adjacent ends 51, the contiguous side 50, and the second end 51 are shown. Upon said last mentioned end 51 is an extension portion 55. Suitable scores 56, 57 and 58 separate sides 50 and end 51, and a score 59 is used to separate extension 55 from the adjacent end 51. All of the scores mentioned are parallel.

A horizontal score 60 provides a parallel margin for said sides 50 and end 51. Again reading from the right to the left it will be noted that the side 50 is provided with an extension 61, the sides of extension 61 being die-cut. The sides of extension 61 are parallel to the margins of sides 50. In

the upper left hand corners of extension 61 is a quadrant 62 separated from the main body of extension 61 by a continuous series of perforations making it a simple matter to remove section 62 from extension 61 when such removal is desired.

Upon the adjacent end 51 are two extension portions, the material of which when united would provide a single extension of substantially the same width as the end 51.

The first of the extensions upon end 51 is designated 63, and comprises a portion of material separated from end 51 by the score 60, the left hand margin of the extension comprising an arc of 90° so that extension 63 has the general form of an L. The second extension 64 upon the end 51 is equally disposed thereupon and upon the contiguous side 50. Such extension 64 comprises a half circle in which two scores 65 and 66 radiate from the intersection of score 57 and score 60. Score 65 is in reality a continuation of score 57 while score 66 is disposed intermediate score 65 and score 60 and is equidistant therefrom.

Upon the side 50 is an extension 67. This extension is separated from side 50 by the score 60 and extends from score 58 to the die-cut used to form extension 64. The adjacent ends of sections 63 and 67 are separated by a die-cut 68. Upon the left hand end 51 is the usual and customary flap or extension 69, which is generally rectangular in configuration.

After the blank illustrated in Figure 9 is die-cut and scored, the sides 50 and ends 51 are folded and glued together at extension 55. The flaps upon the bottom end of the box, such flaps not being shown, are of the usual form, and are used to close the box at its bottom.

Extension 69 is folded inwardly. Extension 63 is next folded down. Extension 67 is then glued over extensions 69 and 63. The arcuate die-cut which separates section 67 from extension 64 exactly coincide with that portion of the same die-cut which separates section 63 from said extension 64. An opening having an internal arcuate margin heretofore designated 54 is thus formed.

The material of extension 64 is folded with that portion between the scores 60 and 66 lowermost, with that portion between the scores 66 and 65 disposed over the first mentioned section, and the section between the score 60 and score 65 uppermost. This last mentioned section is folded in the same plane as section 67. When so folded the section 61 having the detachable portion 62 is folded over and glued upon section 67. This provides a thoroughly sanitary air and dust tight closure for the box.

To open, section 62 is detached from extension portion 61 by running a knife or

the finger nail along the separating perforations which divide extension 61 from section 62. Section 62 is pulled outwardly and as it is disposed upon, glued to and of the same size as the section of extension 64 between scores 60 and 65, an outward pull upon section 62 causes the spout, heretofore designated 53, to be formed. The material of such spout comprises the three sections of extension 64. To close the box after the first opening, it is only necessary to press downwardly upon section 62 which causes the material of section 64 to fold in the manner hereinabove indicated, the roughened edges intermediate extension 61 and section 62 ordinarily being sufficient to hold the spout in closed position.

I claim:

1. In a container, having an opening, a closure comprising a single sheet of material constituting extensions of the walls of said container, said extensions being creased in parallelism with the divisions in the walls of said container and at an angle of forty-five degrees therefrom to define a substantially enclosed converging spout, said spout being foldable to assume a position in a flat plane over said opening to serve as a closure for said container.
2. In a container, having an opening, a closure comprising a single sheet of material constituting extensions of adjacent walls of said container, each of said extensions being creased in continuity with the divisions of said container walls and at an angle of forty-five degrees therefrom to define a substantially enclosed spout foldable to assume a position in a flat plane over said

opening to serve as a closure for said container.

3. In a container, having an opening, a closure comprising a continuous extension of adjacent walls thereof, said extension being creased intermediate each wall and at an angle of forty-five degrees therefrom to define a substantially enclosed spout foldable to constitute a closure when disposed in a flat plane over said opening.

4. In a container, a closure comprising a continuous extension of adjacent walls thereof, said extension being creased intermediate each wall coextensive therewith to define a substantially enclosed spout, another extension on an adjacent wall, said spout and extension being foldable to confront each other in the plane of a wall of said container to constitute a closure therefor.

5. In a container, a closure comprising a continuous extension of adjacent walls thereof, said extension being creased intermediate each wall coextensive therewith to define a substantially enclosed spout, and an edge portion of said extension being incised to assist in directing the flow of the container contents over the edge of the spout.

6. In a container, having an opening, a closure comprising a continuous extension of adjacent walls thereof, said extension being creased along the fold lines of said walls and at an angle intermediate each wall coextensive therewith to define a spout foldable in a plate plane over said opening to constitute a closure for said container.

In testimony whereof I affix my signature.

HARRY V. MARSH.