

July 16, 1957

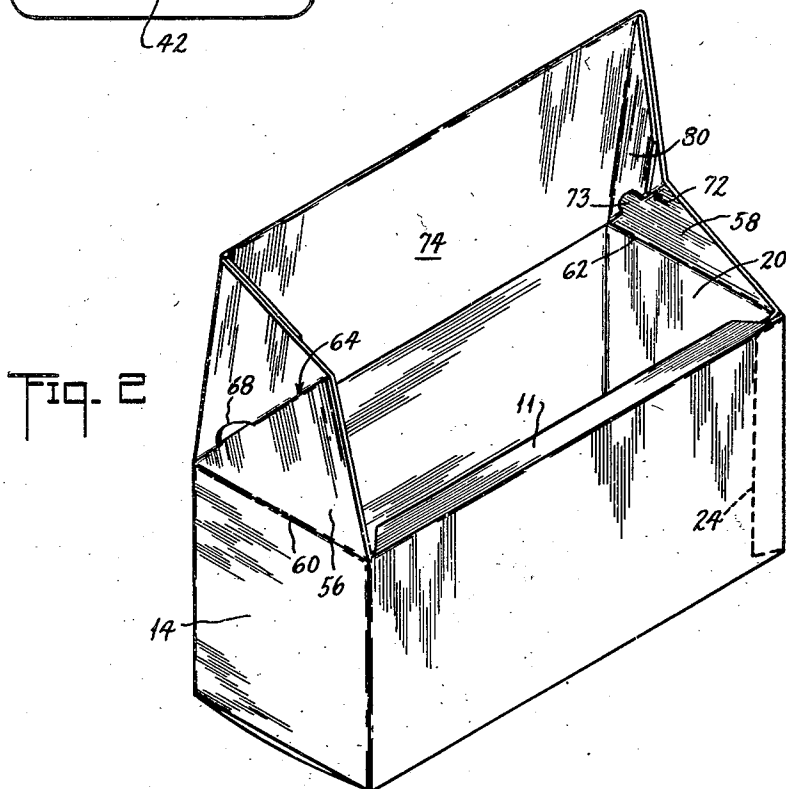
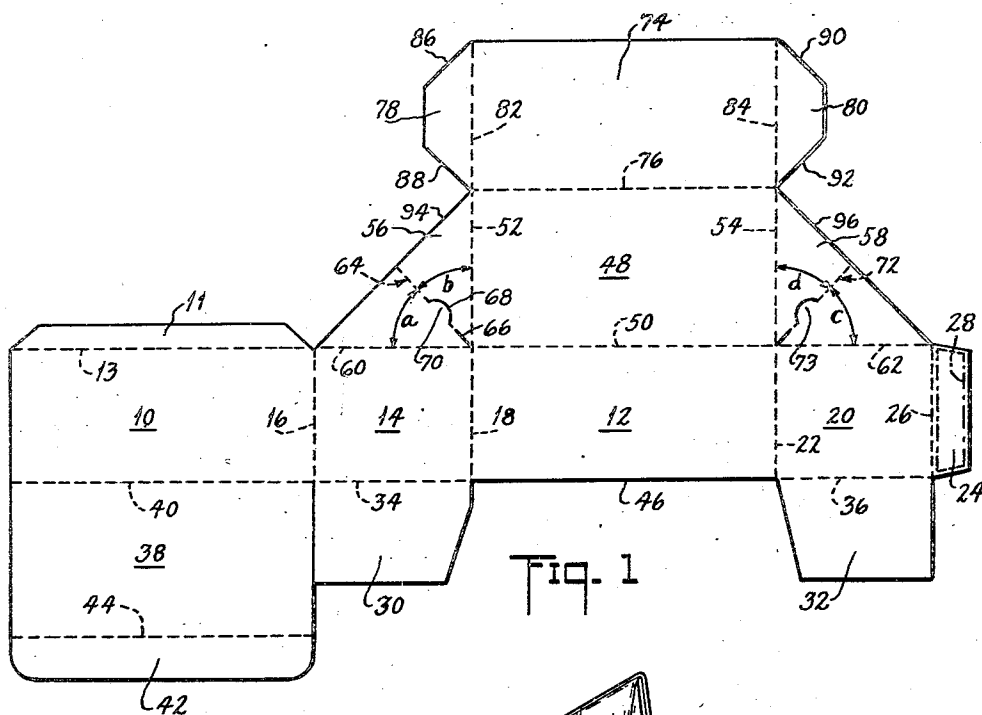
R. E. VAN ROSEN

2,799,442

BOX WITH AUTOMATIC CLOSURE

Filed Nov. 18, 1953

4 Sheets-Sheet 1



July 16, 1957

R. E. VAN ROSEN

2,799,442

BOX WITH AUTOMATIC CLOSURE

Filed Nov. 18, 1953

4 Sheets-Sheet 2

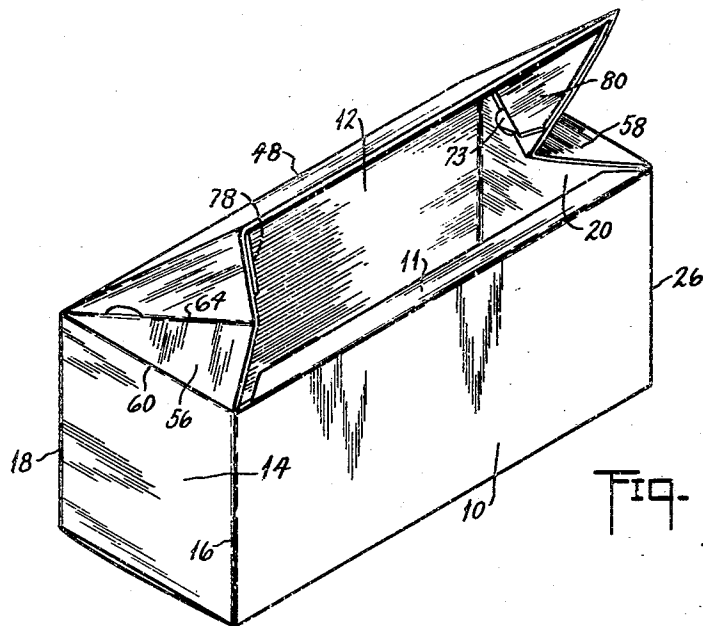


FIG. 3

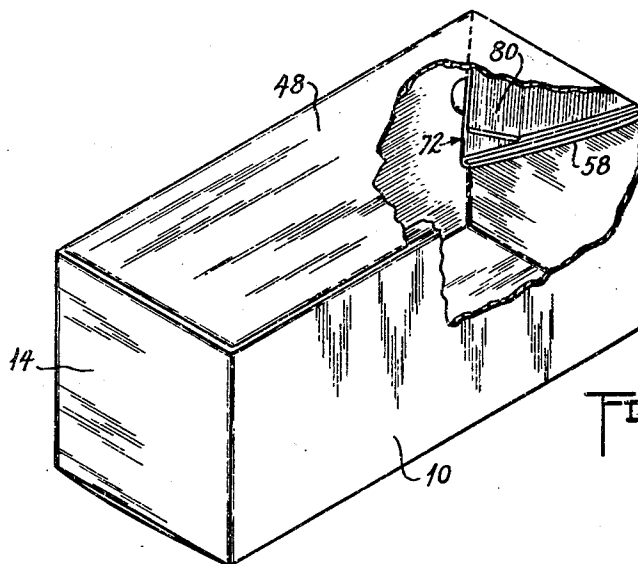


FIG. 4

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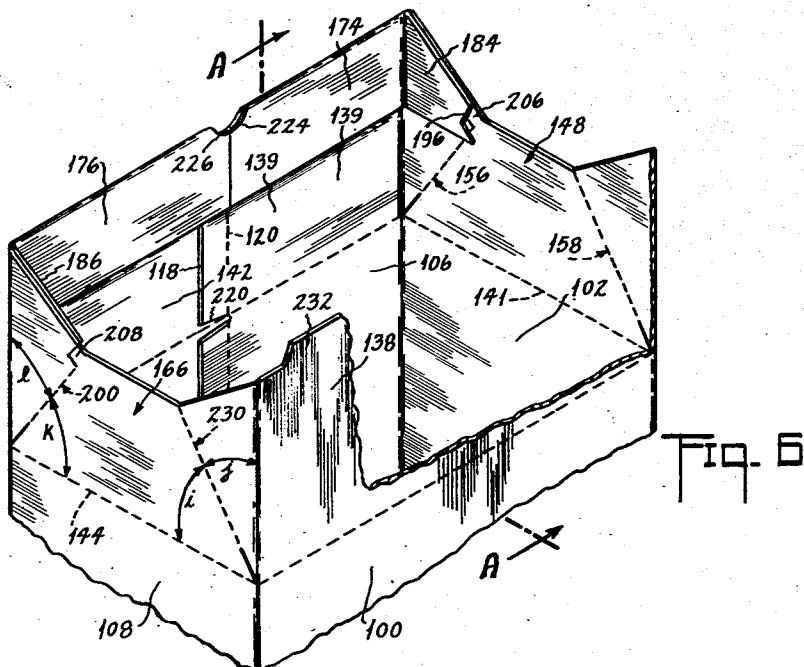
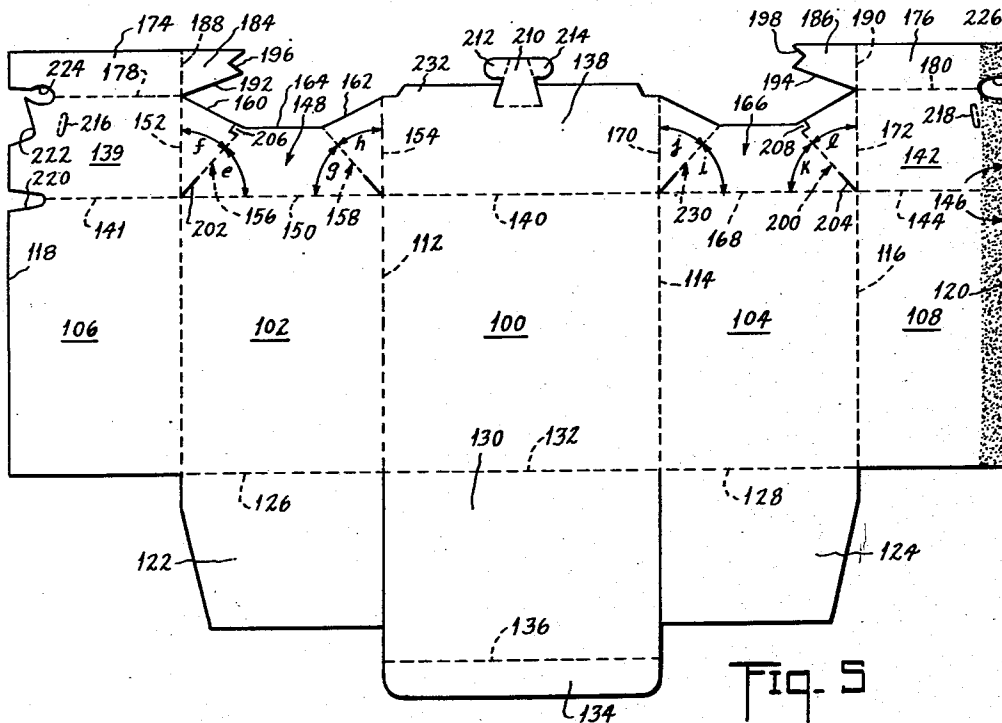
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BOX WITH AUTOMATIC CLOSURE

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July 16, 1957

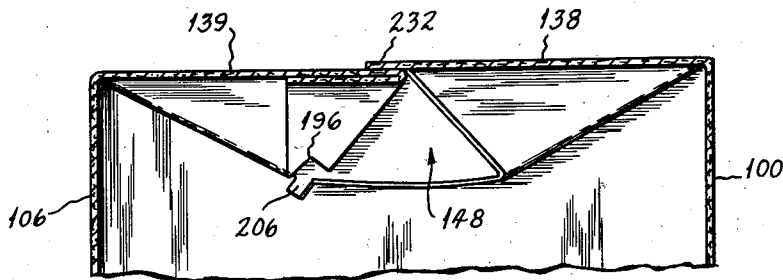
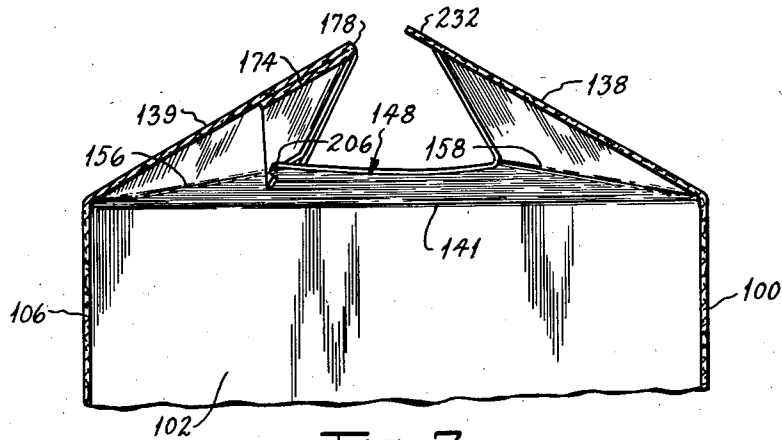
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2,799,442

BOX WITH AUTOMATIC CLOSURE

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2,799,442

BOX WITH AUTOMATIC CLOSURE

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Application November 18, 1953, Serial No. 392,937

3 Claims. (Cl. 229—37)

The present invention relates to boxes and more particularly to an automatic self-closing closure for boxes of the general type identified as folding boxes. According to the present invention a generally rectangular box having four vertical walls is provided with one or more closure flaps each hinged along an upper or lower edge of one vertical wall and hingedly connected by webs to the corresponding edges of the walls on both sides of that to which the closure flap is hinged. The webs are provided with generally diagonally disposed lines of weakening along which the webs may be folded inwardly as the closure flap is moved toward closed position. According to the present invention, the lines of weakening in the webs are not truly diagonal whereby the webs are somewhat distorted when the closure flap is moved toward closing position. The particular disposition of the lines of weakening is such that distortion of the webs yieldingly resists movement toward closed position and maximum distortion occurs before the closure flap reaches its final closed position. Continued movement of the closure flap toward closed position and beyond the point of maximum distortion brings about a reversal or over-centering of the spring effect arising from such distortion and thereafter the distorted webs serve to hold the closure flap in closed position. The closure flap, therefore, will snap into closed position or into opened position whenever it is moved in an appropriate direction beyond the point where maximum distortion of the webs occur.

A folding box with such automatic closure is particularly useful in the retail trade where a merchant may purchase the boxes in flat, folded condition and set them up when they are needed for packaging of merchandise. After the merchandise has been inserted in the box, the closure flap is moved toward closed position whereupon it snaps shut and the purchaser may take the merchandise home without the necessity for taping, tying with string, or the like. Furthermore, the box may be used by the purchaser for subsequent storage of the purchased article inasmuch as the automatic closure may be operated repeatedly without damage to the closure or to the box. The box of the present invention is particularly useful, for example, in the merchandising of light, bulky articles such as hats, shoes, garments, and the like.

The closure of the present invention may be applied in the form of one or more automatically closing flaps at the top or bottom or both. If the closure of the present invention is applied at one end only, say the top, any desired form of bottom closure may be provided. For convenience in use, such bottom closure ordinarily should be one which may be rapidly operated when the box is set up.

The present invention has been illustrated in two embodiments applied to boxes of relatively common form. It will be understood that the principles of the present invention are readily adaptable to boxes of other types, shapes and proportions and that the present invention

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shall not be limited to the specific disclosures herein made.

In the drawings:

Fig. 1 is a plan view of a blank from which one embodiment of the present invention may be constructed;

Fig. 2 is an elevational view of a box which has been set up from the blank of Fig. 1 and in which the closure flap has been slightly moved toward closed position;

Fig. 3 is a view similar to Fig. 2 but showing the closure flap moved further toward closed position;

Fig. 4 is a view similar to Fig. 2 but showing the box closed and with certain parts broken away to disclose the position of the webs which serve to hold the closure flap in position;

Fig. 5 is a plan view of a blank from which a modified form of the present invention may be constructed;

Fig. 6 is a fragmentary elevational view of one end of a box made from a blank such as that shown in Fig. 5 and showing the closure slightly moved toward closed position;

Fig. 7 is a fragmentary sectional view taken in a plane such as that indicated at A—A in Fig. 5, and showing the closure moved further toward closed position; and

Fig. 8 is a view similar to Fig. 7 showing the closure in closed position.

Referring now to the drawings, in Fig. 1 there is shown a blank for a simple rectangular box which may be of the general size and proportions of the familiar shoe box. The blank includes a front wall 10, a rear wall 12, an end wall 14 interposed between the walls 10 and 12 and separated therefrom by score lines 16 and 18. An opposite end wall 20 is separated from the rear wall 12 by a score line 22. A glue tab 24 is joined along a vertical edge of the end wall 20 by a score line 26. Glue or other suitable adhesive is positioned in the area indicated at 28 for securing the tab 24 to the left hand edge portion of the front wall 10 as viewed in Fig. 1 in a manner well known in the art. A stiffening flange 11 is joined along a score line 13 along the upper edge of the front wall 10.

The blank may be provided with any suitable form of bottom closure flaps including flaps identical with the top closure flaps to be described hereinbelow. For simplicity of disclosure, however, there is shown herein a simple bottom closure construction comprising end flaps 30 and 32 joined with the end walls 14 and 20 by score lines 34 and 36. A main bottom closure flap 38 is joined along the lower edge of the front wall 10 by a score line 40 and is provided with a tuck-in lip 42 hinged thereto along a score line 44. The simple bottom closure just described is closed after the box has been erected by first folding the end flaps 30 and 32 inwardly and thereafter folding the main bottom flap 38 along the score line 40. The tuck-in flap 42 is inserted between the end flaps 30 and 32 and the adjacent lowermost edge 46 of the rear wall 12. The closure just described forms no part of the present invention, it being understood that any suitable form of bottom closure may be used so long as it is of the type which will tend to hold the box in erected position for insertion of contents through the top.

The top closure, in accordance with the present invention, comprises a main top panel 48 joined along a score line 50 with the rear wall 12. The main panel 48 is also joined along vertical score lines 52 and 54 with webs 56 and 58 which have a generally triangular configuration and which are respectively joined with the end walls 14 and 20 along horizontal score lines 60 and 62. A line of weakening 64 extends from the intersection of the score lines 60 and 52 generally diagonally of the web 56 and in a particular angular relationship which will be described hereinbelow. Such line of weakening may com-

prise a score line or a combination of scoring and cutting as illustrated in this particular form of the invention. As shown in the drawings and particularly in Fig. 1, the line of weakening 64 may comprise a cut 66 which extends from the intersection of the score lines 60 and 52 for a relatively short distance beyond which there is a score line interrupted by an arcuately curved cut 68 to define a tab 70 to be described hereinbelow. Beyond the tab 70, the score line extends to the margin of the web 56. It will be apparent that the web 56 will tend to fold along the line of weakening 64 and that the tab 70 will project outwardly when such fold is made.

The web 58 at the opposite end of the box is provided with a line of weakening indicated generally at 72 which is similar in all respects with the line of weakening 64 and includes, for this particular form of the invention a cut 71 and a curved portion 75 defining a curved tab 73.

Since the box which is to be erected from the blank shown in Fig. 1 is a rectangular box, the walls 12 and 14 for example, will occupy planes which intersect at right angles along the score line 18. Similarly, the score lines 52 and 60 intersect at right angles. Therefore, the natural fold line for the web 56 would be along a line bisecting the angle between score lines 60 and 52. If the line of weakening 64 were to be thus disposed, the web 56 could be folded inwardly as the main closure panel 48 is folded inwardly along its score line 50 without distortion of the web 56 and such action would be resisted only by such spring as is left in the box board along the score lines. This residual spring, of course, would tend to move the main closure panel upwardly and away from closed position. If the score lines were so weakened, as by precreasing, as to kill residual spring, the main closure panel 48 might lie limply in closed position but such a closure obviously would be of little value in maintaining contents within the box. According to the present invention, the lines of weakening 64 and 72 in the webs 56 and 58 do not bisect the angle between the respective score lines which define such webs. Thus the angle a between the score line 60 and the line of weakening 64 is slightly greater than the angle b between the line of weakening 64 and the score line 52. Similarly, the angle c is slightly greater than the angle d in the web 58. As a practical matter, the difference between the angles may be from one to four degrees. For example, angles a and c may be 46° and the angles b and d may be 44° , in a rectangular box of the type chosen for illustration. Since the lines of weakening 64 and 72 are thus displaced from the natural fold lines of the webs 56 and 58, distortion will occur when the webs are tucked inwardly incident to moving the main closure panel 48 towards closed position.

The blank so far described may be erected into a folding box with a self-closing top closure which will automatically remain in closed position as will be described hereinbelow. However, it has been found preferable to provide a reinforcing panel 74 joined to the top panel 48 along a score line 76 and provided with relatively small side panels 78 and 80 joined to the reinforcing panel 74 along score lines 82 and 84 respectively. The small panels 78 and 80 are angularly cut at the top and bottom. Thus the panel 78 is cut along the edge 86 at an angle to coincide generally with the line of weakening 64. At the lower end the panel 78 is cut at 88 at an angle to coincide generally with the edge 94 of the web 56. The panel 80 is similarly cut at 90 and 92. It will be understood, however, that the particular conformation of the edges 94 and 96 of the webs 56 and 58 is not critical to the present invention and they might be curved or broken if so desired, particularly in connection with boxes of different size or proportions from that illustrated in Figs. 1 through 4. The purpose of the reinforcing panel 74 and the side panels 78 and 80 is largely to stiffen the main closure panel 48 and to this end it is folded forwardly and downwardly along the line 76 as viewed

in Fig. 1, in order that the reinforcing panel 74 may lie flatwise in registry with the main panel 48 and the small panels 78 and 80 may lie in general registry with the triangular portions of the webs 56 and 58 which lie above the lines of weakening 64 and 72.

The blank shown in Fig. 1 will normally be folded first along the line established by the score lines 18, 52 and 82 to bring the glue tab 24 in position to be secured to the front wall 10. After it is thus secured the blank is ready for shipment to the customer. When the customer desired to set up the blank the various score lines described hereinabove will be precreased in appropriate directions as is usual in setting up folding boxes. Thus the score lines 16 and 22 will be creased so that the vertical walls 10, 14, 12 and 20 will define a hollow rectangle. The end flaps 30 and 32 of the bottom closure will be folded inwardly and the main bottom panel 38 with its tuck-in tab 42 will be positioned in known manner. The box then will be in open erected position. The stiffening flange 11 will be folded along the score line 13 to extend inwardly of the box to stiffen the upper edge of the front wall 10. The reinforcing panel 74 and small panels 78 and 80 will be folded downwardly along the line 76 to form the double thickness top closure flap. The box is now ready to be closed and this is effected by starting the webs 56 and 58 to fold along their lines of weakening 64 and 72, inwardly and downwardly of the mouth of the container. This brings the container into the position illustrated in Fig. 2.

As shown in Fig. 2, the webs 56 and 58 have been moved inwardly and downwardly to such an extent that the tabs 70 and 73 will snap under the lower edges 88 and 92 respectively of the small panels 78 and 80. The tabs 70 and 73 will thereafter serve to hold the small panels 78 and 80 snugly against the upper triangular portions of the webs 56 and 58 and thus to hold the reinforcing panel 74 flat against the main top panel 48. Continued closing of the box from the position shown in Fig. 2 will swing the webs 56 and 58 inwardly and downwardly against increasing resistance due to distortion until, as shown in Fig. 3, the webs 56 and 58 have reached the position in which the triangular portions thereof below the lines of weakening 64 and 72 respectively will lie in a plane substantially normal to the end walls 14 and 20. In this position maximum distortion occurs and the energy stored in the distorted, resilient box-board from which the container is made is at a maximum. Continued downward movement of the closure toward the position shown in Fig. 4 will depress the lower triangular portions of the webs 56 and 58 below the horizontal whereupon the energy stored in the distorted parts of the box will be effective to spring the webs 56 and 58 downwardly to snap the top closure into closed position as illustrated in Fig. 4. As shown in said Fig. 4 the in-folded webs 56 and 58 are inclined downwardly into the body of the box being constantly urged into such position by the energy stored in the distorted box parts. When the box is opened by lifting the top closure flap 48, 74 the webs 56 and 58 will again approach the position shown in Fig. 3 and during this period opening will be increasingly resisted. Further opening will bring about a reversal of the direction in which the stored energy is effective and the closure will thereupon snap into a substantially open position such as that shown in Fig. 2.

The action of the closure of the present invention is comparable with that achieved by the use of an over-centering spring in many familiar applications. The spring effect in the present structure is provided by the inherent resiliency of the box-board, which may be chip-board, kraft board or any of the paper-boards ordinarily used in the manufacture of cartons, folding boxes and the like. The overcentering effect is the result of the particular construction of the webs 56 and 58 which have lines of weakening angularly offset from the natural fold lines for such webs. The principle of such over-

centering effect will be explained with particular reference to the form of the invention shown in Figs. 1 through 4.

Since the angle a in web 56 is slightly greater than angle b an imaginary line normal to any point along the line of weakening 64 will have a greater length between line 64 and score line 60 than it has between the line 64 and score line 52. Thus, if the web 56 be folded inwardly and the top panel 48 be folded downwardly from the flat blank shown in Fig. 1 such action would swing the end wall 14 forwardly along the score line 18. Because of the unequal lengths of the imaginary line aforesaid, the end wall 14 would tend to assume a final position wherein the angle between the rear wall 12 and the end wall 14 would be greater than a right angle. However, since the box is glued together and is set up in open rectangular form before the web 56 is folded inwardly, the right-angular relationship between walls 12 and 14 is already established. Thus, referring to Figs. 2 and 3, the inward folding of the webs 56 and 58 is accompanied by the exertion of force tending to spread the end walls 14 and 20 apart.

Such force will be exerted along lines generally normal to the lines of weakening 64 and 72 and thus will tend to compress or distort the lower, larger triangular portions of the webs 56 and 58. Also the force will be resisted by the end walls 14 and 20 along the fold lines 60 and 62 and will cause bulging along such lines. The distortion and bulging will reach a maximum when the lower triangular portions reach a substantially horizontal or dead-center position. When such dead-center position is passed in a downward direction the distorted parts will tend to spring back to undistorted condition and in doing so will snap the closure to closed position.

The reinforcing panel 74 and the small panels 78 and 80, if provided, serve to stiffen the top closure panel 48 and the upper, smaller triangular portions of the webs 56 and 58. Such stiffening serves to confine distortion to the lower triangular portions of the webs 56 and 58 and to the end walls 14 and 20 and makes operation of the closure more definite and reliable particularly when relatively light board is used.

Referring now to Figs. 5 through 8, there is shown a different form of closure embodying the present invention. In these figures the closure is shown applied to a box which may be generally of the size and proportions suitable for millinery. In Fig. 5 there is shown a plan view of the inner surface of a blank from which the box shown in Figs. 6 through 8 may be erected. The blank comprises a rear wall 100, side walls 102 and 104 and two front wall parts, 106 and 108. The walls and wall parts aforesaid are defined by vertical score lines 110, 112, 114 and 116 and the front wall parts 106, 108, are of such size that the edges 118 and 120 thereof may be overlapped to form a front wall of the same width as the rear wall 100. A bottom closure of any desired or convenient form may be used. For purposes of illustration, there has been shown bottom end flaps 122 and 124 hinged respectively along score lines 126 and 128 to the end walls 102 and 104. A bottom closure flap 130 is hinged along a score line 132 to the rear wall 100 and is provided with tuck-in flap 134 hinged thereto along a score line 136.

A top closure panel 138 is hinged along a score line 140 along the upper edge of the rear wall 100. In this form of the invention the top closure panel 138 is approximately one-half the width of the open mouth of the erected box. A second top closure flap of approximately the same width is arranged to fold along the upper edge of the front wall, the two top closure panels thus provided being arranged to meet along a transverse center line of the open mouth of the erected box. The second top closure panel may be made in two parts as shown in the blank in Fig. 5 although it will be understood that such construction is illustrated because the main ver-

tical seam of the box extends vertically of the front panel and it will be apparent that a different construction may be adopted in the event the main seam of the box lies adjacent one corner thereof or is positioned in some other panel or wall. The second top closure panel comprises a panel part 139 hinged along a score line 141 to the panel 106 and a panel part 142 hinged along a score line 144 to the panel 108. The panel part 142 and the front wall panel 108 are adapted to receive a stripe of glue or other suitable adhesive within the area generally indicated at 146 for the purpose of securing the edge portions 120 and 118 together to form the main seam of the box.

A web indicated generally at 148 is hinged along a score line 150 to the end wall 102 and is also hinged along score lines 152 and 154 respectively to the closure panels 138 and 139. Lines of weakening generally indicated at 156 and 158 extend generally diagonally inwardly of the web 148. The angle e between the line of weakening 156 and the score line 150 is slightly greater than the angle f between the line of weakening 156 and the score line 152. Similarly the angle g between the line of weakening 158 and the score line 150 is greater than the angle h between the line of weakening 158 and the score line 154. The difference between these angles may be substantially the same as that discussed above in connection with the first form of the present invention.

The upper edge of the web 148 is preferably cut away to facilitate folding, as shown in Fig. 5. Thus the edge 160 slants downwardly from the upper end of score line 152 to a point of intersection with a continuation of the line of weakening 156. A similar inclined edge 162 extends from the upper end of score line 154 to a point of intersection with the line of weakening 158. A generally horizontal portion 164 joins the inclined edges 160 and 162.

A web 166, which may be identical with the web 148, is hinged along a score line 168 to the end wall 104 and along score lines 170 and 172 to the closure panel 138 and panel part 142 respectively.

If so desired, a reinforcing panel may be provided for stiffening the top closure made up of parts 139 and 142. Such stiffening panel may comprise panel parts 174 and 176 hinged respectively along score lines 178 and 180 to the upper edges of the top closure parts 139 and 142. Small panels 184 and 186 preferably are provided with inclined lower edges 192 and 194 which are disposed at such an angle as to coincide substantially with the inclined portions 160, 162 for example, of the upper edges of the webs 148 and 166 when the stiffening panel 174 is folded flatwise into engagement with the top closure panel 139, 142. Each of the small panels 184 is provided with a notch 196 and 198 for a purpose to be described.

The line of weakening 156 in web 148 and the corresponding line of weakening 200 in web 166 may consist primarily of a score line having cuts 202 and 204 aligned therewith in the region of the score line 150 and 168 respectively. At their outer ends the lines of weakening 156 and 200 may be provided with irregular cuts to define small tabs 206 and 208 respectively which will project outwardly from the webs 148 and 166 when the same are folded along the lines of weakening 156 and 200. These small tabs 206 and 208 are so positioned as to snap into engagement with the notches 196 and 198 in the small stiffening panels 184 and 186, as will be described hereinbelow.

Also, if so desired, a locking tab 210 may be formed along the upper edge of the closure panel 138. The tab 210 has tongues 212 and 214 for insertion in openings 216 and 218 formed respectively in the closure panel parts 139 and 142. The tab 210 (if provided) may be availed as a supplemental lock for the top closure panels.

Inasmuch as the front wall of the box is formed of corresponding halves which are joined along the edges 118 and 120 as described above, it is preferable to pro-

vide a plurality of relief notches along various score lines in order to avoid the necessity for folding double thicknesses of box-board. Such provision is common in the box making art and in this connection the blank may be provided with relief notches 220, 222, 224 and 226 which are so shaped and located in the zone of the main seam of the box as to function in the desired manner. An inspection of Fig. 6 will reveal the ultimate disposition of the relief notches 220 and 224, 226, for example.

The blank shown in Fig. 5 will be folded along two vertical score lines such as 112 and 114 to bring the edges 118 and 120 into overlapping position with edge 120 uppermost. Adhesive in the zone 146 will be availed of to form the main seam of the box. The box is then ready for shipment to the customer in flat folded form. When the box is set up it will be creased along the remaining vertical score lines to bring it to hollow rectangular form and the bottom closure flaps 122, 124 and 130 will be moved to closed position in known manner. The box is now set up in rectangular form with the top open to receive contents.

When it is desired to close the box for the first time, the stiffening panel 174, 176 with associated small panels 184 and 186 is folded inwardly and downwardly along the score lines 178 and 180 into the position illustrated in Fig. 6. It should be noted that in Fig. 6 the box has been turned into a position wherein the wall 100, herein arbitrarily referred to as the rear wall, is in the front part of the view. As shown in said figure, the notch 196 in panel 184 lies adjacent tab 206 in web 148. A similar relation is established between the notch 198 and the tab 208 at the opposite end of the box. The webs 148 and 166 are then pressed inwardly to initiate folding along the lines of weakening 156, 158, 200 and 230. The top closure panels 138 and 139, 142 will thereupon move inwardly and downwardly toward closed position. As such movement continues the notches 196 and 198 will become seated behind the tabs 206 and 208 and thereafter will remain in such relationship to hold the stiffening panel 174, 176 snugly against the closure panel 139, 142.

Further movement of the closure toward closed position will bring the parts into the position shown in Fig. 7 wherein the central portions of the webs 148, 166 will approach a generally horizontal position. Movement up to this point meets with increasing resistance due to distortion of the webs 148 and 166 and of adjacent walls such as the end walls 102 and 104, all as explained above in connection with Figs. 1 through 4. Maximum distortion occurs at approximately the position illustrated in Fig. 7. As the central portions of the webs 148 and 166 are moved beyond the dead center position they will snap downwardly towards the position shown in Fig. 8.

The over-centering spring action exerted by the closure shown in Figs. 5 through 8 is substantially the same as that described above in connection with Figs. 1 through 4. Thus the lines of weakening 156, 158, 200 and 230 are offset from the natural fold lines of the webs 148 and 166 in such manner that imaginary lines normal to the lines of weakening have excessive length below the lines of weakening and bring about distortion as heretofore described.

It will be noted that the closure flaps 138 and 139, 142 are of such length as to meet in the center of the top opening of the box. It is preferred to provide the closure panel 138 with an extension lip 232 which will overlap the closure panel 139, 142 as shown in Fig. 8. In the event a locking tab such as 210 is provided the tongues 212 and 214 thereof may be inserted in the openings 216 and 218 (see Fig. 5) to lock the top closure flaps in the position illustrated in Fig. 8.

From the above detailed description of two embodiments of the present invention, it will be apparent that the principal feature of the invention lies in the provision of webs hingedly connected with opposite ends of a clo-

sure flap and with the walls adjacent the wall from which the closure flap extends, which webs are provided with lines of weakening offset from the natural fold lines which such webs would tend to follow when tucked inwardly of the closure flap as the latter is moved towards closing position. The offset is such that the portion of the web lying between the line of weakening and the adjacent wall provides lever arms whose effective lengths are greater than corresponding lever arms between the line of weakening and the edge of the closure flap to which the web is joined. Thus when the flap is moved towards closed position the web-portion having the longer lever arms will reach a generally horizontal position before the upper portion of the web reaches such position. At the same time the shorter lever arms above the line of weakening will subject the longer lever arms to compression which may distort the web portion in which the longer arms lie or the adjacent box wall or both. Such distortion stores energy in the distorted areas and immediately that the lower portions of the webs pass through a generally horizontal plane, the stored energy will tend to move the webs towards a position in which distortion is reduced. The tendency towards such movement causes the closure to spring towards closed position and to remain closed until sufficient force is applied to the closure to bring the webs upwardly through the position of maximum distortion whereupon over-centering will again occur and the webs will spring the closure into substantially open position.

I claim:

1. In a box made of paperboard, the combination of four rectangularly disposed side walls, a bottom closure lying in a plane substantially normal to said side walls when in closed position, and a top closure including at least one rectangular flap hingedly joined to the upper edge of one of said side walls and adapted to be folded along said edge into a plane substantially normal to said side walls to assume a closed position, a pair of webs, each of said webs being hingedly joined to one side edge of said closure flap and to the upper edge of a side wall contiguous with that to which said closure flap is hinged, each of said webs having a line of weakening formed therein extending angularly from the intersection of the upper edges of said contiguous wall and the wall to which said closure flap is hinged and defining an angle with the upper edge of said contiguous side wall which is slightly greater than the angle which it defines with the side edge of said closure flap, and a rectangular flap hinged to the free edge of said closure flap and having panels hinged at the opposite ends thereof, said rectangular flap being adapted to be folded flatwise against the inner surface of said closure flap to stiffen said closure flap and said panels being adapted to lie flatwise respectively against the portions of said webs lying above the angularly extending lines of weakening therein whereby when said closure flap is moved to closed position said panels will serve to urge the inwardly folded webs downwardly into closure locking position.

2. In a box made of paperboard, the combination of four rectangularly disposed side walls, a bottom closure lying in a plane substantially normal to said side walls when in closed position, and a top closure including at least one rectangular flap hingedly joined to the upper edge of one of said side walls and adapted to be folded along said edge into a plane substantially normal to said side walls to assume a closed position, a pair of webs, each of said webs being hingedly joined to one side edge of said closure flap and to the upper edge of a side wall contiguous with that to which said closure flap is hinged, each of said webs having a line of weakening formed therein extending angularly from the intersection of the upper edges of said contiguous wall and the wall to which said closure flap is hinged and defining an angle with the upper edge of said contiguous side wall which is slightly greater than the angle which it defines with the side edge

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of said closure flap, a rectangular flap hinged to the free edge of said closure flap and having panels hinged at the opposite ends thereof, said rectangular flap being adapted to be folded flatwise against the inner surface of said closure flap to stiffen said closure flap and said panels being adapted to lie flatwise respectively against the portions of said webs lying above the angularly extending lines of weakening therein whereby when said closure flap is moved to closed position said panels will serve to urge the inwardly folded webs downwardly into closure locking position, said panels terminating along a line substantially coinciding with at least a part of the length of the angularly extending lines of weakening in said webs, and tabs extending from the portions of said webs lying below the lines of weakening therein upwardly across said lines of weakening to engage the terminal edges of said panels when the closure is moved to closed position thereby to lock said panels in flatwise engagement with the portions of said webs lying above the lines of weakening therein.

3. In a box made of paperboard, the combination of four rectangularly disposed side walls, a bottom closure lying in a plane substantially normal to said side walls when in closed position, and a top closure including at least one rectangular flap hingedly joined to the upper edge of one of said side walls and adapted to be folded along said edge into a plane substantially normal to said side walls to assume a closed position, a pair of webs, each of said webs being hingedly joined to one side edge of said closure flap and to the upper edge of a side wall contiguous with that to which said closure flap is hinged, each of said webs having a line of weakening formed therein extending angularly from the intersection of the upper edges of said contiguous wall and the wall to which said closure flap is hinged and defining an angle with the

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upper edge of said contiguous side wall which is slightly greater than the angle which it defines with the side edge of said closure flap, a rectangular flap hinged to the free edge of said closure flap and having panels hinged at the opposite ends thereof, said rectangular flap being adapted to be folded flatwise against the inner surface of said closure flap to stiffen said closure flap and said panels being adapted to lie flatwise respectively against the portions of said webs lying above the angularly extending lines of weakening therein whereby when said closure flap is moved to closed position said panels will serve to urge the inwardly folded webs downwardly into closure locking position, said panels terminating along a line substantially coinciding with at least a part of the length of the angularly extending lines of weakening in said webs, notches formed in the terminal edges of each of said panels, and tabs extending from the portions of said webs lying below the lines of weakening therein upwardly across said lines of weakening to engage the notches in the terminal edges of said panels when the closure is moved to closed position thereby to lock said panels in flatwise engagement with the portions of said webs lying above the lines of weakening therein.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,799,442

July 16, 1957

Robert E. Van Rosen

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the grant, lines 2 and 3, for "assignor to Robert Gair Company, Inc., of New York, N. Y., a corporation of Delaware" read --assignor to Continental Can Company, Inc., a corporation of New York--; line 12, for "Robert Gair Company, Inc., its successors" read --Continental Can Company, Inc., its successors--; in the heading to the printed specification, lines 3 to 5, inclusive, for "assignor to Robert Gair Company, Inc., New York, N. Y., a corporation of Delaware" read --assignor to Continental Can Company, Inc., a corporation of New York--.

Signed and sealed this 3rd day of December 1957.

(SEAL)

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON
Commissioner of Patents