March 8, 1966 N. E. SPENCER 3,239,127

CARTON WITH INTEGRAL ARTICLE SUPPORT

Filed Nov. 29, 1963 3 Sheets-Sheet 1

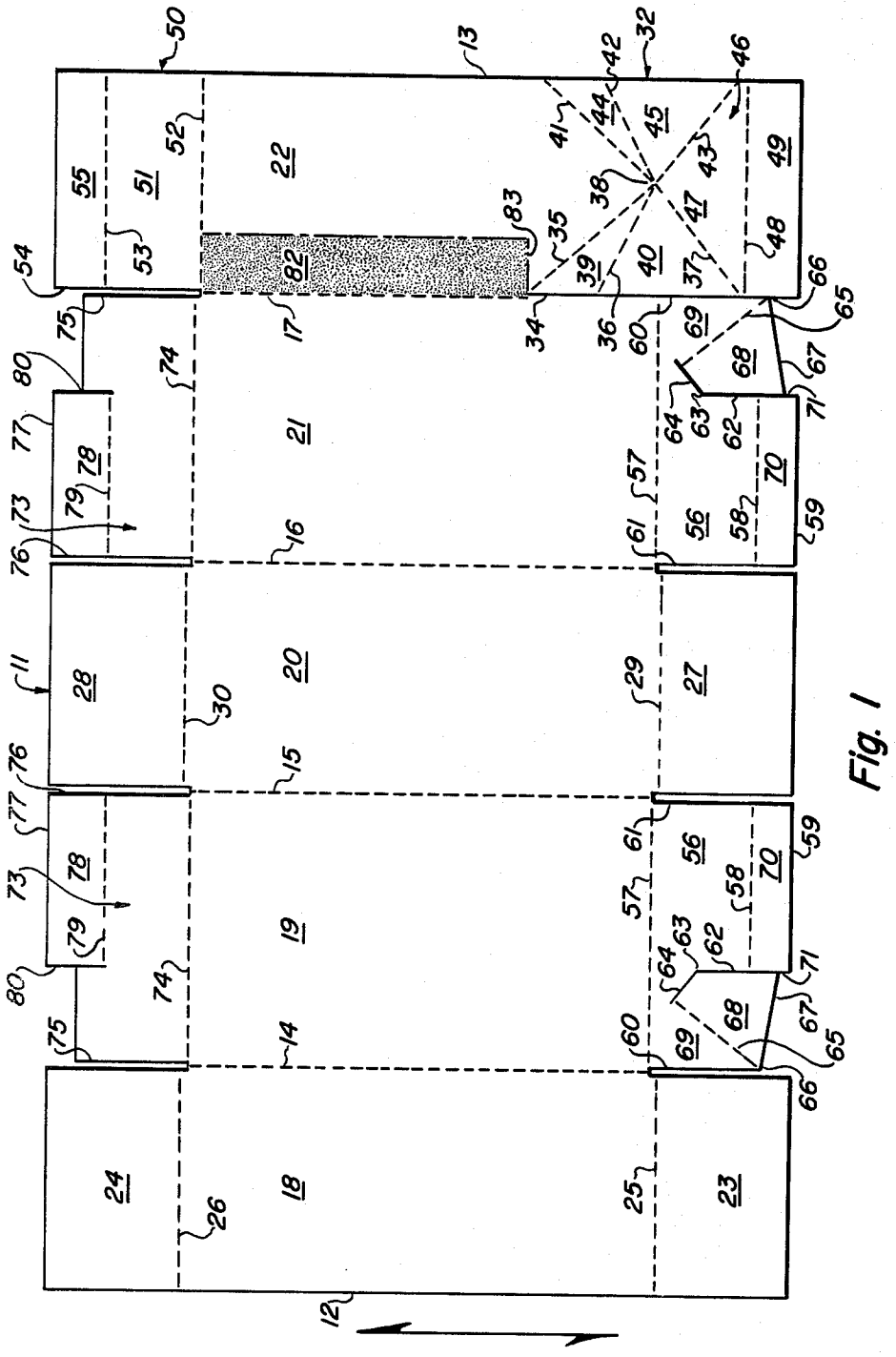


Fig. 1

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CARTON WITH INTEGRAL ARTICLE SUPPORT

Filed Nov. 29, 1963 3 Sheets-Sheet 2

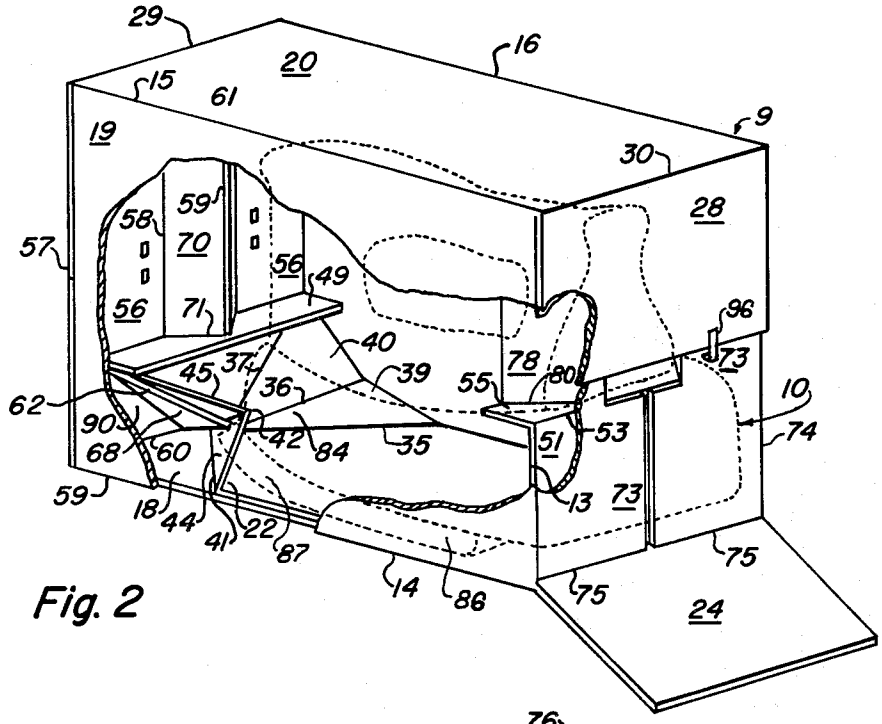


Fig. 2

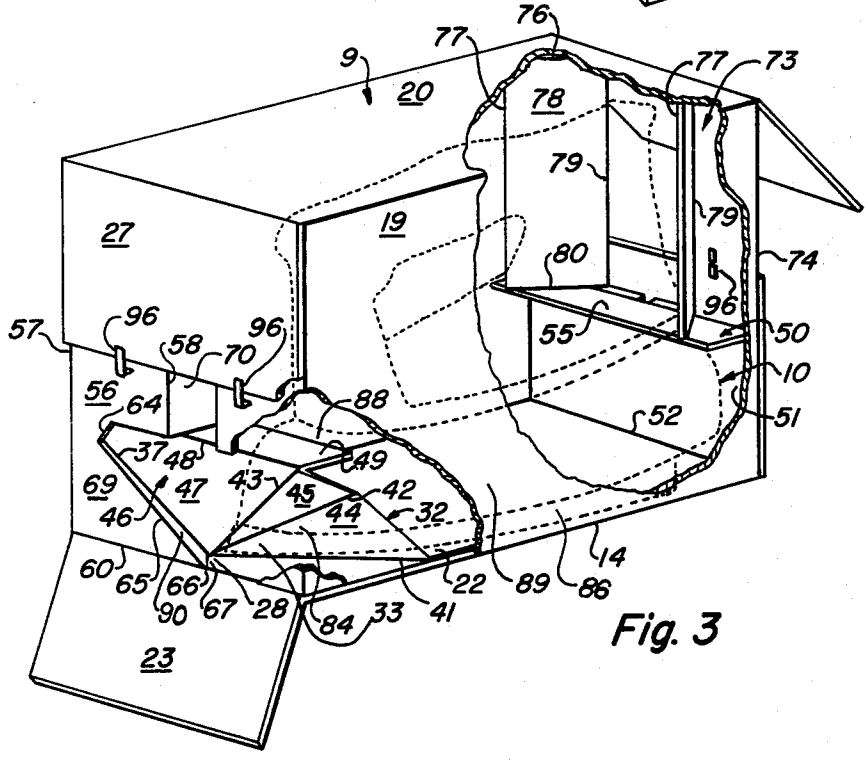


Fig. 3

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CARTON WITH INTEGRAL ARTICLE SUPPORT

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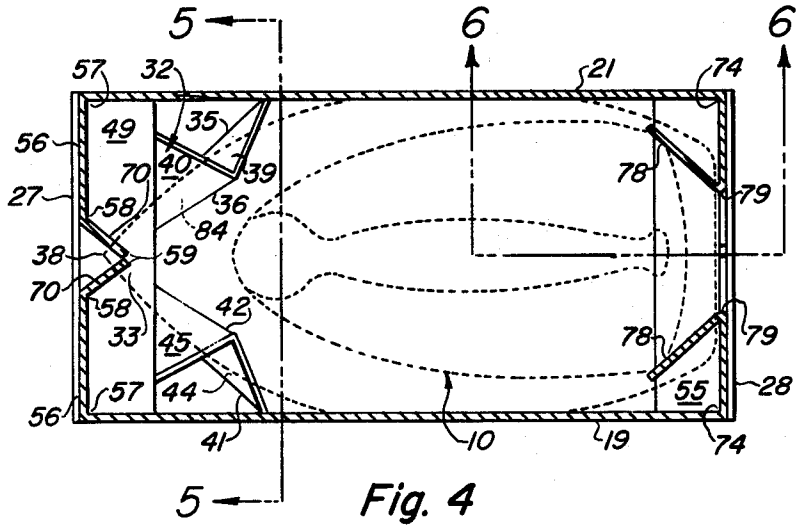


Fig. 4

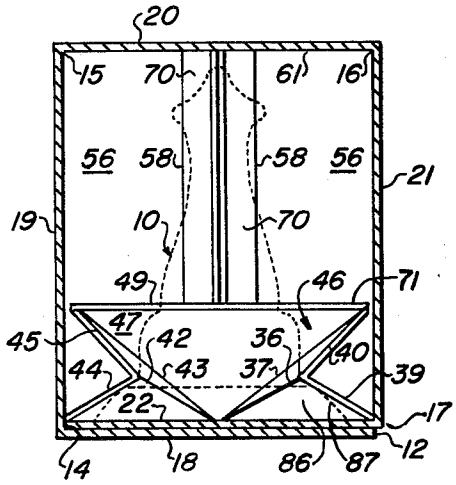


Fig. 5

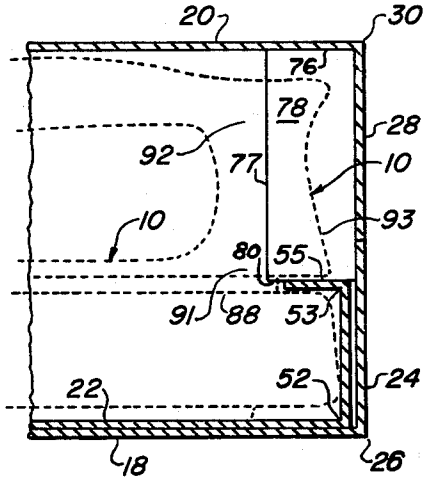


Fig. 6

United States Patent Office 3,239,127 Patented Mar. 8, 1966

3,239,127

CARTON WITH INTEGRAL ARTICLE SUPPORT

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7 Claims. (Cl. 229—14)

The present invention relates to collapsible cartons and more particularly to an inexpensive carton for end loading articles such as electric irons.

An object of the invention is to provide a carton formed from a single blank of corrugated boxboard and having integral portions to support opposite ends of the article packed in the carton and other integral portions to reinforce the supports and prevent collapse of the latter in the event the carton is subjected to extreme pressures, dropped or inverted. Other objects of the invention will be apparent from the following description and drawings, wherein:

FIGURE 1 is a plan view of the inside face of the blank from which the carton is formed;

FIGURE 2 is a rear perspective view of the erected carton with walls broken away to more clearly show the construction;

FIGURE 3 is a front perspective view of the carton with walls broken away;

FIGURE 4 is a top view of the carton with the top wall removed;

FIGURE 5 is a section along line 5—5 in FIGURE 4, and

FIGURE 6 is a section along line 6—6 in FIGURE 4.

The embodiment of the invention herein disclosed comprises an end loaded carton 9 for an electric iron 10 and is formed from a single blank 11 of corrugated boxboard wherein the corrugations extend longitudinally of the carton as shown by the arrow to the left of FIGURE 1 and is scored to provide creased folding or hinge lines shown by dash lines in FIGURE 1, and the solid lines indicate that the material is cut to form edges, slots and separation lines.

The blank 11, shown in FIGURE 1, is substantially rectangular and has opposite longitudinally extending marginal edges 12 and 13 between which the material is scored at 14, 15, 16 and 17 along parallel lines to provide a bottom wall 18, side wall 19, top wall 20, side wall 21 and integral with the latter a hinged support panel 22.

At opposite ends of the bottom wall 18 are closure flaps 23 and 24 bendable respectively along transverse score lines 25 and 26, and the top wall 20 is similarly provided with closure flaps 27 and 28 defined by the scored hinge lines 29 and 30.

The support panel 22 is provided at its front portion with first support means 32 for the toe 33 of the iron 10 to be packed in the carton 9 and comprises a cut edge 34 colinear with the score line 17, from which score lines 35, 36 and 37 extend diagonally inwardly to a point 38 at substantially the longitudinal medial line of the support panel 22 and cooperate to provide triangular panel support sections 39 and 40. Similar diagonal score lines 41 and 42 and 43 extend from the margin 13 to the point 38 and provide triangular panel support sections 44 and 45. The score lines 36 and 42 are on the opposite face of the blank 11 from that shown in FIGURE 1 to provide reverse fold lines therealong. A terminal portion 46 of the first support means 32 includes a triangular section 47 defined by the score lines 37 and 43 and a transverse score line 48 and the latter provides a hinge for a terminal member 49.

The rear portion of the support panel 22 at the opposite end of the carton 9 is provided with second support means 50 for the rear end of the iron and comprises a

substantially rectangular section 51 defined between score line 52 and 53, cut edge 54 and a portion of the margin 13, and hinged to the score line 53 is a terminal section 55.

The opposite face of the support panel 22 is provided with an adhesive material indicated by the stippling 82 and which extends between line 83 and the score line 52.

In order to reinforce the first support means 32 when the latter is folded to position the toe 33 of the iron sole plate in the carton 9, the opposite side walls 19 and 21 are each provided with a reinforcing end flap 56. Each flap 56 is provided with parallel transverse score lines 57 and 58, a marginal edge 59, lower cut edge 60 and an upper cut edge 61. Within each flap 56 a cut line 62 projects inwardly and normal to the margin 59 to a point 63 from which laterally extends a cut line 64 terminating in a score line 65 which continues diagonally to an outer corner 66 and an edge 67 extends to the cut line 62 to provide a polygonally shaped reinforcing panel 68. Adjacent to each reinforcing panel 68 between the score lines 65 and 57 and the cut edge 60 is a lower reinforcing panel 69. The score line 58 in each end flap 56 provides a hinge for reinforcing member 70 having a lower edge 71, margin 59 and part of the top edge 61.

The second support means 50 at the rear end of the support panel 22 is reinforced by end flap means 73 hingedly connected by a score line 74 to the rear end of each side wall 19 and 21. Each reinforcing flap 73 is formed by the transverse score line 74, cut edges 75 and 76 and marginal end 77. Included in each flap 73 is a reinforcing member 78 formed between a score line 79, a portion of the margin 77, a cut edge 80 and a part of edge 76.

The container is secured into a flat collapsed condition by folding the blank 11 along line 17 so that support panel 22 overlies the side wall 21, thereafter the blank is folded on line 15 to arrange the side wall 19 and bottom wall 18 over the top wall 20 and the outer surface of the folded support panel 22, whereby the bottom wall 18 engages the adhesive material 82 to thus secure the bottom wall 18 to the support panel 22 and position the marginal edge 13 adjacent the score line 14. The adhesive area 82 extends between the lines 52 and 83 so that a portion of the bottom wall 18 is positioned beneath the first support means 32 and the latter is free to be lifted and folded with respect to the bottom wall 18.

The carton is erected from its flat collapsed condition by applying an inwardly directed force against the score lines 15 and 17 causing the carton walls to be formed into a hollow open ended rectangular shell with the end flaps at the opposite ends of the shell extending outwardly in the same plane as respective walls 18, 19, 20, 21 and the support panel 22.

The first support means 32 is then folded along diagonal lines 35 and 41, the reverse score lines 36 and 42 and the diagonal lines 37 and 43. Such folding causes the reverse fold lines 36 and 42 to project inwardly of the diagonal lines 35 and 41 to produce a pyramidal shaped recessed pocket 84 with the point 28 as its apex and defined between the support panel 22, score lines 35 and 41, triangular sections 39 and 44 and the reverse score lines 36 and 42. The iron 10 is then inserted from the opposite open end of the carton shell and the toe 33 of the iron sole plate 86 is seated in the pocket 84 with the triangular support sections 39 and 44 overlying and engaging the inclined wall 87 of the sole plate toe 33. The terminal portion 46 of the first support means 32 is then folded along the score line 48 to position the terminal member 49 parallel to the support panel 22.

Reverse folding along the score lines 36 and 42 positions the triangular support panels 40 and 45 upwardly in opposite directions from the point 38 so that the support panels 40 and 45 are inclined with respect to the exposed

bottom wall 18 and are spaced therefrom to form a space 90. The triangular section 46 extends substantially vertically upwardly from the bottom wall 18 to the horizontal terminal member 49 which projects inwardly of the container.

The first support means 32 is maintained in its erected position by folding the reinforcing flaps 56 along their score line 57. The upper reinforcing panels 68 are folded along the score lines 65 to arrange the panels 68 in the spaces 90 with the surface of the panels 68 engaging the surface of the inclined triangular support sections 40 and 45. The folding of each reinforcing panel 68 into the adjacent space 90 positions the lower reinforcing panel 69 normal to the adjacent side walls with the lower edge 60 of each panel resting against the exposed surface of the bottom wall 18 to thereby prevent collapse of the pocket 84 when pressure is exerted by the iron laterally of the pocket 84 and toward the front end of the container in the event the latter is dropped.

The reinforcing member 70 on each reinforcing flap 56 is then folded along the line 58 to arrange the members 70 inwardly of the container so that the upper end 61 engages the inner surface of the top wall 20 and the lower edge 71 abuts the horizontal terminal member 49, whereby the latter and pocket 84 are maintained in position and prevented from moving toward the top wall 20 if the container is inverted and rests on the top wall 20.

The support means 50 at the rear end of the container is erected by folding the section 51 along the score line 52 and the terminal section 55 along line 53 to arrange the section 55 inwardly of the container and between the top wall 88 of the iron and the lower end 91 of the iron handle 92.

The reinforcing flaps 73 for the rear support means 50 are each folded along the line 74 and the reinforcing member 78 along line 79 to arrange the member 78 interiorly of the container along opposite sides of the rear leg 93 of the iron handle 92. The lower portion of each reinforcing flap 73 is arranged alongside the vertical wall of the rear support 50, the reinforcing members 78 have their lower edge 80 abutting the terminal section 55 and their upper edge 76 engaging the inner surface of the top wall 20 to prevent the support means 50 from collapsing and to hold the rear end of the iron in proper position in the carton should the latter be inverted or dropped when in such a condition.

Thereafter the front closure flaps 23 and 27 are folded along their score lines 25 and 29 respectively and secured to the reinforcing flaps 56 by staples 96 or if desired they can be glued together. In like manner the rear closure flaps 24 and 28 are folded along score lines 26 and 30 respectively and secured to the reinforcing flaps 73 by staples 96 or by an adhesive. The closure flaps when secured to the reinforcing means prevent movement of the latter and also the support means longitudinally of the carton and thus displacement of the iron.

From the foregoing it will be perceived that the support means and reinforcing means at the front and rear ends of the iron are integral with the carton to provide an inexpensive container and that the reinforcing means prevent collapse of the support means in the event the carton is mishandled causing the iron to exert lateral pressures against the support means.

While I have shown and described but one embodiment of my invention, it is to be understood that this embodiment is to be taken as illustrative only and not in a limiting sense. It do not wish to be limited to the particular structure shown and described but to include all equivalent variations except as limited by the scope of the claims.

I claim:

1. An end loaded carton formed from a single blank, comprising a plurality of walls hinged along fold lines longitudinally of the carton forming an erect open ended shell, a support panel integral with said blank and overlying one of said walls and secured thereto, walls adjacent to said one wall and said support panel, a first support at one end of said shell and hinged at one end of said support panel, said first support scored with lines extending inwardly from opposite longitudinal edges of said support panel and folded along said score lines inwardly of said one end of said shell to provide an open ended pocket along said support panel facing the other end of said shell to receive one end of the article packed in the carton and inserted thereinto from said other end of said shell, and closure flaps at both ends of said carton to close the open ended shell.

2. A carton as described in claim 1, and said first support including opposed panel sections inclined with respect to said one wall and each forming a space with the latter and said adjacent walls, and reinforcements for said first support and including flaps hinged on said adjacent walls and reinforcing panels folded into said spaces to engage said inclined panel sections to prevent collapse of said pocket.

3. A carton as described in claim 1, said carton having a wall arranged opposite to said one wall, and said first support including a terminal portion having a member spaced between said one wall and said opposite wall, and reinforcements for said first support and including flaps hinged on said adjacent walls and a reinforcing member having an end engaging said terminal member and another end engaging said opposite wall to prevent collapse of said first support toward said opposite wall.

4. A carton as described in claim 1, and a second support hinged to said support panel at the other end of said shell and having a folded section adapted to engage and support the other end of the article packed in the carton.

5. A carton as described in claim 4, and reinforcements for said second support and including flaps hinged on said adjacent walls to over lap said folded section.

6. A carton as described in claim 1, said carton having a wall arranged opposite to said one wall, and a second support hinged to said support panel at the other end of said shell and having a terminal section spaced between said one wall and said opposite wall and adapted to engage and support the other end of the article, and reinforcements for said second support and including flaps hinged on said adjacent walls and having an end engaging said terminal section and another end engaging said opposite wall to prevent collapse of said second support toward said opposite wall.

7. A carton as described in claim 1, and first reinforcements hinged to said adjacent walls and engaging said first support to prevent collapse of said pocket, a second support hinged to said support panel at the other end of said shell and having a folded section adapted to engage and support the other end of the article, and second reinforcements hinged to said adjacent walls at said other end of said shell and engaging said folded section to prevent collapse of said second support.

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