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CONTAINER

Filed June 11, 1962

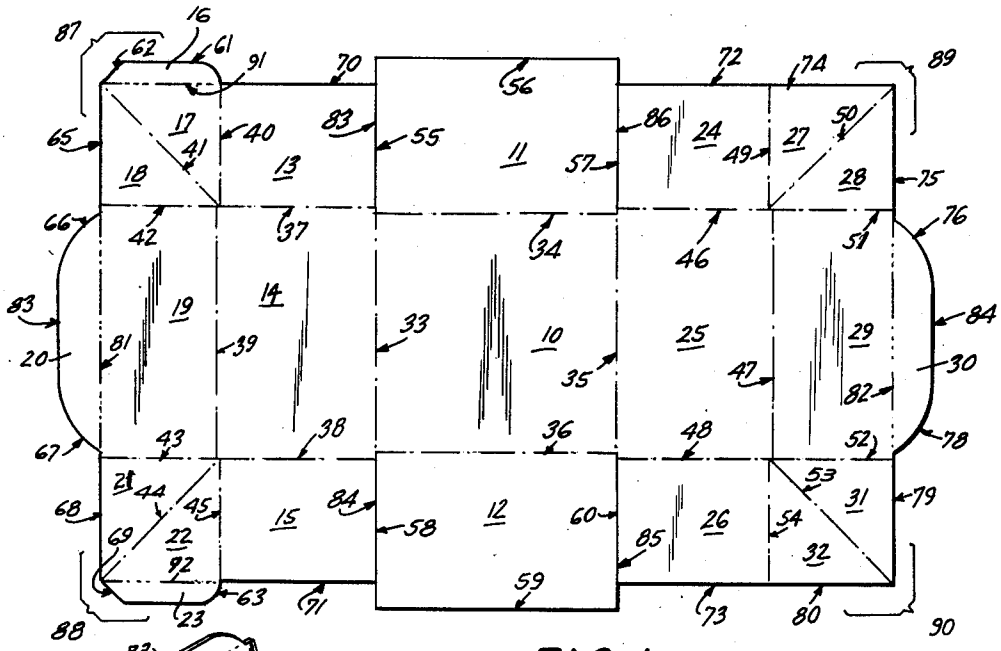


FIG. 1

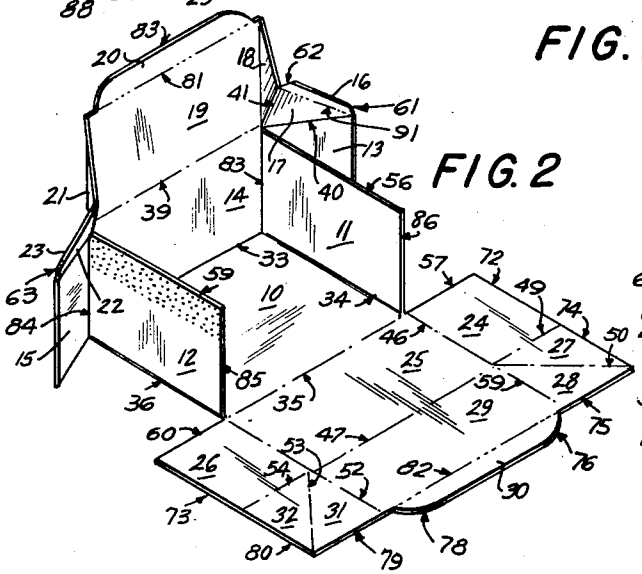


FIG. 2

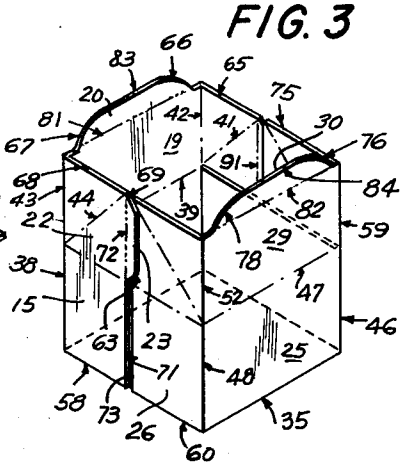


FIG. 3

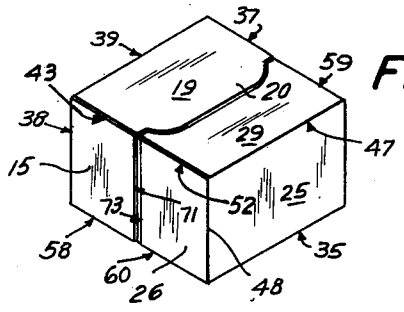


FIG. 4

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CONTAINER

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This invention relates to an improvement in corrugated paper containers for packaging nails, bolts, screws and other hard objects. This invention relates more specifically to a container having two side and two end panels, a bottom panel and an improved top closure. The container of my invention is used in the automatic packaging of small objects such as nails, which are most economically processed on automatic equipment.

Previous prior art containers have been made of two-piece blanks. This construction resulted in containers having two sections in a telescoped relationship. My novel container is made of a one-piece blank so designed that it may be easily erected by automatic equipment to form a container made from a one-piece blank. This blank results in a substantial savings of paper.

Efficient manufacturing processes also require that the container can be erected, filled, and closed on automatic equipment. After the container is erected from the blanks during the assembly operation, it then passes to the filling operation. During this filling operation, the container must provide a top structure similar to a funnel to guide the packaged goods into the container. An acceptable container must also provide a structure similar to a funnel to hold the packaged goods in the container section after filling, because the filled but still unclosed containers are then vibrated vigorously to compact the goods.

The efficient rectangular design of the blank results in abutting edges of the sheet material meeting in a position midway in the funnel-like top structure so that a crack or fissure results. This fissure is a trap for the packaged goods during the filling and closing operations. The compacting or vibrating operation causes the contents to spill through the fissure of the containers and thus jams the top when the automatic closing machinery attempts to close the lid. Thus, my unique one-piece blank design provides a container with a funnel-like arrangement very suitable for enclosing and guiding the packaged goods while the filling equipment is in operation and avoids jamming during the closing operation. My container has a novel tab arrangement serving the two-fold function of sealing this crack during filling operations and then serving a significant function during the closing operation as described below.

The closing of the filled container is accomplished by the action of a plow device, sweeping against one top panel of the closure structure. This action of the plow depresses one top panel of the closure structure downwardly toward the container bottom and the packaged goods therein. A tab panel serves to position the opposite top panel of the closure as described in detail below.

As the plow device pushes the top panel downwardly, the tabs of the cornerweb structures associated with the top panel being pushed, is contacted against the outer surface of the cornerweb panels of the opposite cornerwebs and this contacting action depresses the opposite top panel downwardly and serves to position it. The pocket formed by the cornerwebs of the opposite top panel is positioned and held to receive the top panel which is being plowed.

The closure structure of my container has an arrangement of foldable cornerwebs consisting of two flaps which form a pocket upon closing to receive the opposite top panel. The top panels of the closure structure have an

extended edge. This extended edge is designed to be received into the formed pocket and thus this interlocking arrangement of the top panel and cornerwebs serves to form a closure for the container, which is then easily reclosed after the initial opening.

Thus, the container constructed from the blank of my invention provides an easily assembled, easily filled and easily closed container very suitable for utilization on automatic filling equipment.

The preferred embodiment of my invention is illustrated in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein:

FIGURE 1 is a flat layout of the one-piece blank from which the container may be assembled.

FIGURE 2 is a perspective view of a partially erected container.

FIGURE 3 is a perspective view of a fully-assembled container and showing the closure construction in detail.

FIGURE 4 is a perspective view of an assembled container illustrating the closure in a fully-closed state.

My container may be constructed from a blank as described below.

The blank is scored to have bottom panel 10 formed by fold lines 33, 34, 35, and 36. Foldably attached to the bottom panel 10 are end panels 11 and 12. End panel 11 is attached to bottom panel 10 along fold line 34. End panel 11 has edges 55, 56, and 57. End panel 12 has edges 58, 59, and 60, and is foldably attached along fold line 36 to bottom panel 10.

Foldably attached to bottom panel 10 are side panels 14 and 25 along fold lines 33 and 35, respectively. Side panel 14 is formed by fold lines 33, 37, 38, and 39. Side panel 25 is formed by fold lines 35, 46, 47, and 48.

Top panel 19 is foldably attached to side panel 14 along fold line 39 and is formed by fold lines 39, 42, 43 and line of demarcation 81.

Top panel 29 is foldably attached to side panel 25 along fold line 47 and is formed by fold lines 47, 51, 52 and line of demarcation 82.

Tab 20 is integral with top panel 19, and is extended beyond line of demarcation 81. Tab 20 has edge 83 and curved edges 66 and 67.

Tab 30 is integral with top panel 29, along demarcation line 82 and has edge 84 and curved edges 76 and 78.

Flap 13 is formed by fold lines 37, 40 and edges 70 and 83, and is foldably attached to side panel 14 along fold line 37.

Curved edges 62 and 69 of the tabs 16 and 23 are in a relatively flat tangent. This straight line edge covers the fissure of the container up to the apex of the opposite cornerweb and lies in a substantially parallel relationship to weakened fold lines 50 and 53.

End flap 15 is formed by fold lines 38 and 45 and edges 71 and 84, and is foldably attached to side panel 14 along fold line 38.

End flap 24 is formed by fold lines 46 and 49 and edges 72 and 86 and is foldably attached to side panel 25 along fold line 46.

End flap 26 is formed by fold lines 48, 54 and edges 73 and 85, and is foldably attached to side panel 25 along fold line 48.

Cornerweb 87 is foldably connected to end flap 13 along fold line 40, and to top panel 19 along fold line 42. Cornerweb 87 is formed by two inwardly folding flaps 17 and 18, which are foldably connected along weakened fold line 41.

Tab 16 is integrally attached to flap 17, and is extended beyond line of demarcation 91. Tab 16 has curved edges 61 and 62. Curved edge 62 is relatively flat and straight in extending to and beyond weakened fold line 41.

Flap 17 is formed by fold lines 40, 41, and line of demarcation 91.

Flap 18 is formed by fold lines 41, 42 and edge 65.

Cornerweb 38 is foldably connected to end flap 15 along fold line 45, and to top panel 19 along fold line 43.

Cornerweb 38 is formed by two inwardly folding flap portions 21 and 22, which are foldably connected along fold line 44.

Flap 22 is formed by fold lines 44, 45, and line of demarcation 92. Tab 23 is integrally attached to flap 22 and is extended beyond line of demarcation 92. Tab 23 has curved edges 63 and 69. Curved edge 69 is relatively flat and straight in extending to and beyond weakened fold line 44.

Flap 21 is formed by fold lines 43, 44 and edge 68.

Cornerweb 89 is foldably connected to end flap 24 along fold line 49, and to top panel 29 along fold line 51.

Cornerweb 89 is formed by two inwardly folding flaps 27 and 28, which are foldably connected along weakened fold line 50.

Flap 27 is formed by fold lines 49, 50 and edge 74.

Flap 28 is formed by fold lines 50, 51 and edge 75.

Cornerweb 90 is foldably connected to end flap 26 along fold line 54, and to top panel 29 along fold line 52.

Cornerweb 90 is formed by two inwardly folding flaps 31 and 32, which are foldably connected along weakened fold line 53.

Flap 31 is formed by fold lines 52, 53, and edge 79.

Flap 32 is formed by fold lines 53, 54, and edge 80.

The cornerwebs 87 and 88 of the blank of FIGURE 1 may be constructed without tabs 16 and 23, and will then be similar in construction to cornerwebs 89 and 90, and the blank will be symmetrical in appearance.

This type of blank is assembled by hand work. The embodiment improved with tabs integral with the cornerweb is very efficient for automatic assembly.

The container of my invention is erected as illustrated in FIGURE 2. End panels 11 and 12 are folded at right angles to bottom panel 10. Side panel 14 is folded at right angles to bottom panel 10. End flaps 13 and 15 are folded at right angles to side panel 14, and overlie end panels 11 and 12, and may be attached to end panels 11 and 12 by suitable means such as adhesives, staples, or banding. End flaps 24 and 26 may also be attached to panels 11 and 12 in a similar manner. Cornerweb 87 is folded inwardly along fold line 41 and cornerweb 88 is folded inwardly along fold line 44. A pocket is formed by panel 18, top panel 19, and panel 21. Side panel 25 and flaps 24 and 26 are folded in a manner similar to that described above. Top flap 29 is inserted beneath top flap 19 and into the described pocket.

Thus the container as erected from the blank in FIGURE 1 provides a funnel-like arrangement as shown in FIGURE 3 formed of top panel 19 and top panel 29 and cornerwebs 87, 88, 89, and 90.

When the container is closed as described above, it is then held fast by suitable fastening devices such as a wire strap or staples.

The container may be reclosed and will remain closed by the interlocking action of the cornerwebs and the top panels, as described above.

Having described a preferred embodiment of my invention I claim:

1. A container comprising

(*a*) a bottom panel,

(*b*) side panels foldably attached along opposite ends of the bottom panel and substantially perpendicular to the bottom panel,

(*c*) end panels foldably attached along opposite ends of the bottom panel and substantially perpendicular to the bottom panel,

(*d*) end flaps foldably attached along opposite ends of each side panel and substantially perpendicular to the side panel and lying in a plane substantially parallel to and in apposition with an end panel,

(*e*) a top panel foldably attached to each side panel along an edge thereof,

(*f*) a cornerweb foldably attached to each top panel along opposite ends thereof and foldably attached to an end flap along an edge thereof,

(*g*) said cornerwebs folding inwardly when the top panels are swung downwardly to form corner pockets which will receive a portion of an opposite top panel,

(*h*) tabs integrally attached to at least a pair of cornerwebs and contacting the outer surface of at least another pair of cornerwebs and overlying and thus depressing and positioning the contacted cornerweb when the top panels are swung downwardly to receive an opposite top panel.

2. The blank of claim 1 wherein a tab is integrally attached to at least one cornerweb.

3. The blank of claim 1 wherein tabs are attached to at least two cornerwebs attached to the same top panel.

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