

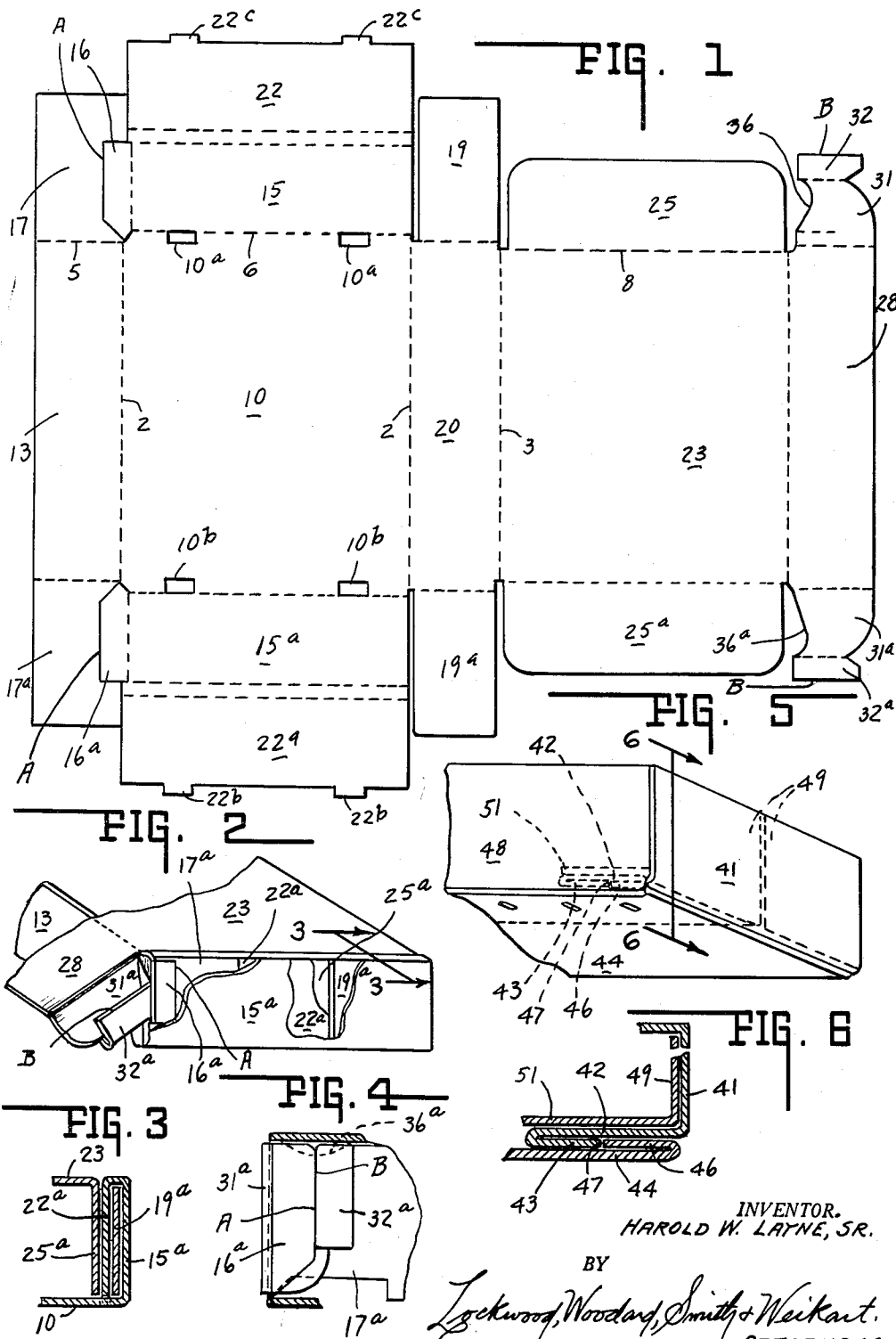
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TAMPER PROOF CARTON LOCK

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TAMPER PROOF CARTON LOCK

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1 Claim. (Cl. 229—36)

This invention relates generally to cartons formed of fibreboard or the like and in particular to a carton which incorporates a tamper-proof lock construction.

In Clark Patent 2,319,919, assigned to the assignee of the present invention there is disclosed and claimed a reusable carton having a side panel which carries integral end flaps inserted along the carton end panel to close the box. While the carton or container of the above mentioned patent is satisfactory for the purposes for which it was designed, the construction is such that the carton may be easily opened and pilfered during transit or storage. Further, extreme weight or loading bulk accommodated in the carton of the above identified patent sometimes caused the end flaps or ears to be forced out of position in the carton.

The present invention provides a carton of the type disclosed in the Clark patent identified above, but which differs therefrom in that it is tamper-proof in that once the carton has been closed, it cannot be reopened without visibly damaging the carton walls. The carton of the present invention is described herein as formed of a one-piece blank; however, it could be formed from separate cover and bottom blanks as is one form of the cartons disclosed in the above identified patent.

The primary object of the present invention is, therefore, to provide a pilfer-proof carton of fibreboard or the like which cannot be opened without visibly damaging the carton panels.

A further object of the present invention is to provide a carton of the type referred to which cannot loosen or spring open even under extreme loading.

These and other objects will become apparent as the description proceeds with reference to the accompanying drawings in which:

FIG. 1 is a top plan view of a scored and slotted blank from which the carton of the present invention is formed.

FIG. 2 is a perspective view of a portion of the carton in the process of being set up from the blank of FIG. 1, certain of the panels being broken away to show the underlying structure.

FIG. 3 is a sectional view taken generally along the line 3—3 of FIG. 2.

FIG. 4 is an enlarged view of certain components of the structure.

FIG. 5 is a fragmentary, perspective view of a modified form of the present invention.

FIG. 6 is a sectional view taken generally along the line 6—6 of FIG. 5.

Referring initially to FIG. 1, the blank from which the carton is to be formed has a generally rectangular overall configuration. The blank is transversely scored at 2 to provide a base panel 10 and integral side panels 13 and 20. The side panel 20 is scored at 3 to provide an integral top panel 23. The top panel 23 is further scored at 4 to provide an integral outer side panel 28. It will be understood that the top panel 23 and parts integral therewith, could be formed from a separate blank and attached to the side panel 20 by any suitable means, this construction being an alternative to the construction herein described in detail wherein the side panel 20 and top panel 23 are integral.

A score line 5 across the upper end of the side panel 13 defines an end flap 17. The upper portion of the base

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panel 10 is scored at 6 to define an outer end panel 15 and an inner end panel 22, with panels 15 and 22 being separated by the parallel score lines 7. Adjacent the score line 6 the base panel 10 is provided with rectangular apertures 10a and the free margin of the end of panel 22 has extending therefrom ears 22c which are received within the apertures 10a when the carton is set up. The left hand margin of the end panel 15 has extending therefrom a locking tab 16 having an outer side margin A.

The upper portion of the side panel 20 is scored to define a side panel end flap 19. The top panel 23 is scored at 8, along its upper margin, to define a top panel end flap 25. The outer side panel 28 is scored across its upper portion to define a locking flap 31, the flap 31 being scored at 9 to provide a locking tab 32 having an upper free margin B. Just beneath the locking tab 32 the flap 31 is cut away as indicated at 36.

The lower portion of the blank is formed with panels and flaps identical to those just described, that is, lower portion components have, in FIG. 1, reference numerals identical to their upper counterparts but with the suffix "a." The free margin of the end of panel 22a has extending therefrom ears 22b, corresponding to the ears 22c on the panel 22 and accommodated within the apertures 10b in the base panel 10.

Referring now to FIGS. 1—4, the carton may be set up by folding the locking flaps 16 and 16a inwardly into overlying relation to their adjacent end panels 15 and 15a. The side panels 13 and 20 are folded upwardly along the score lines 2 with the end flaps 17, 17a, 19 and 19a directed inwardly. The outer end panels 15 and 15a may be folded upwardly and the inner end panels 22 and 22a folded downwardly in overlying relation to the end flaps 17, 19, 17a and 19a, respectively. The ears 22b and 22c are inserted into the apertures 10b and 10a respectively. The top panel 23 is folded along the score line 3 so as to overlie in spaced relation the base panel 10. The end flaps 25 and 25a are thereby placed in side-by-side, contiguous relation with the inner faces of the end panels 22 and 22a.

The locking tabs 32 and 32a are folded into overlying relation with their corresponding locking flaps 31 and 31a and, as may be seen in FIG. 2, the flap 31a and the tab 32a carried thereby are inserted into the space between the end panel 15a and the end flap 17a. The cut away portion 36a on the locking flap 31a permits only one thickness of the material from which the carton is folded to be presented to the corner recess thereby facilitating entry of the tab 32a therein. A corresponding operation is performed with the locking tab 32, these components being inserted between the end panel 15 and the end flap 17.

As may be seen in FIG. 4, when the outer side panel 28 is disposed at right angles to the top panel 23 the margins A and B of the locking tab 32a and locking flap 16a, respectively, move into edge abutting relation to thereby lock the flap 31a against subsequent withdrawal from its position of FIG. 4. It will be understood that the adjacent margins of the locking tab 32 and the locking flap 16 are also engaged in edge abutting relation. When so assembled it will be evident that the carton cannot be opened without visibly damaging the panels and that the carton is thus pilfer proof.

Referring now to FIGS. 5 and 6, a modified form of the locking construction is shown embodied in a carton of the tubular type, that is, a carton in which the side marginal area of the base panel, for example, is fastened by staples or the like to an inwardly projecting flap carried by an adjacent side panel. The carton includes an end panel 41 having an inwardly extending flap 42. The terminal portion of the flap 42 is reversely folded so as to provide a locking tab 43. A base panel 44 has its end

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marginal area folded inwardly to provide a locking flap 46, the free margin of the locking flap 46 abutting the free margin of the locking flap 43 as indicated at 47 in FIG. 5. The carton is further provided with side panels 48 which are provided with sidewardly extending flaps 49 disposed against the inner face of the end panel 41, the flaps 49 further carry integral horizontal flaps 51 which overlie the flaps 42.

With the description of FIGS. 1-4 in mind, it will be apparent that the withdrawal of the flap 42 is prevented by the engagement, along their edges, of the locking flaps 43 and 47.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claim.

The invention claimed is:

A carton comprising a base panel having an integral side panel at each of its side margins, said base panel having integral outer end panels extending from its end margins, said outer end panels each having integral inner end panels extending therefrom, said outer end panels each having a locking flap folded into overlying relation to the inner face of its corresponding outer end panel, one of said side panels having a top panel secured to one side margin thereof, integral top panel end flaps extending

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from each end margin of said top panel, an outer side panel integral with and extending from one side margin of said top panel, said outer side panel having integral locking flaps extending from its end margins, each of said locking flaps carrying a locking tab at its outer margin, said locking tabs being folded into overlying relation with the outer face of their adjacent locking flaps, said carton being formed by disposition of said inner end panels in parallel relation with said outer end panels, said top panel being disposed in spaced overlying relation to said base panel with said top panel end flaps extending in side-by-side relation to the inner faces of said inner end panels, said locking flaps being inserted between their adjacent outer end panel and inner end panel with the free margins of said locking tabs and locking flaps in edge abutting relation, whereby said carton is locked in closed condition, said locking flaps being undercut whereby in inserting said locking flaps between their adjacent outer end panel and inner end panel the marginal area only of said locking tabs is initially presented.

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