

July 13, 1965

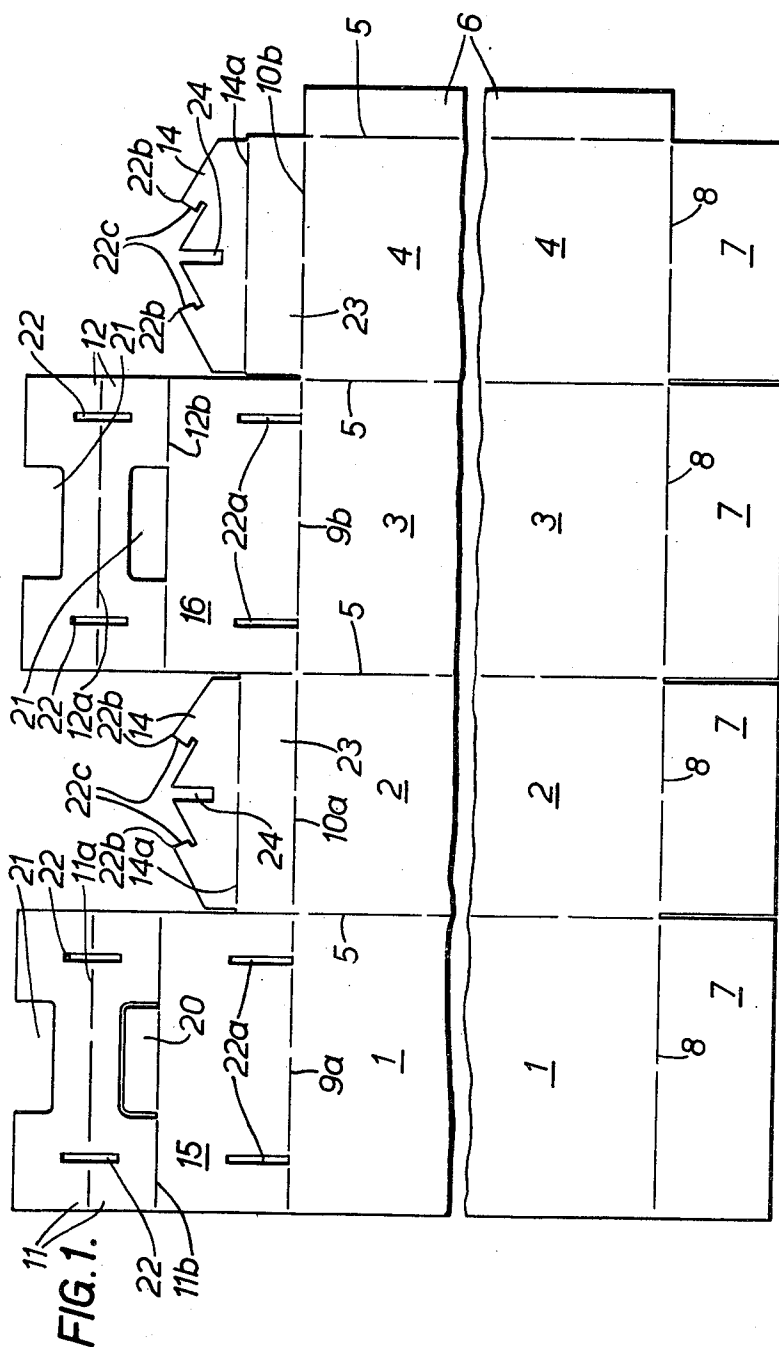
A. MAINDRON

3,194,480

COLLAPSIBLE PACK WITH RECESSED HANDLE

Filed Oct. 15, 1963

5 Sheets-Sheet 1



INVENTOR
ANDRE MAINDRON
BY

Brumbach, Free, Graves & Donahoe
HIS ATTORNEYS

July 13, 1965

A. MAINDRON

3,194,480

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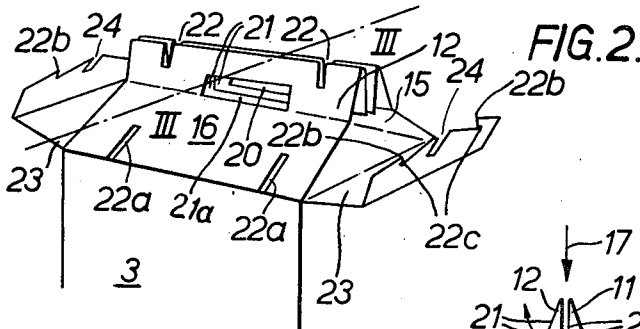


FIG. 3.

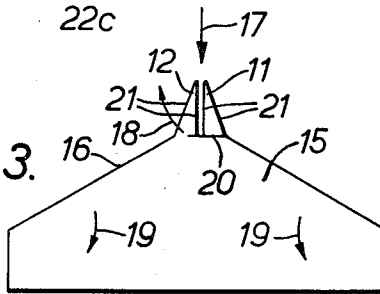


FIG. 4.

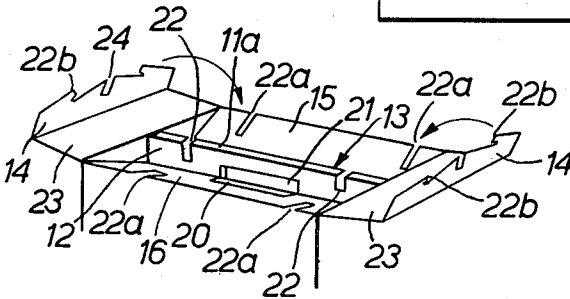


FIG. 5.

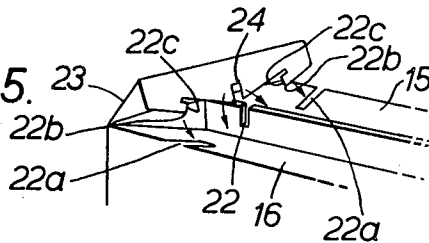
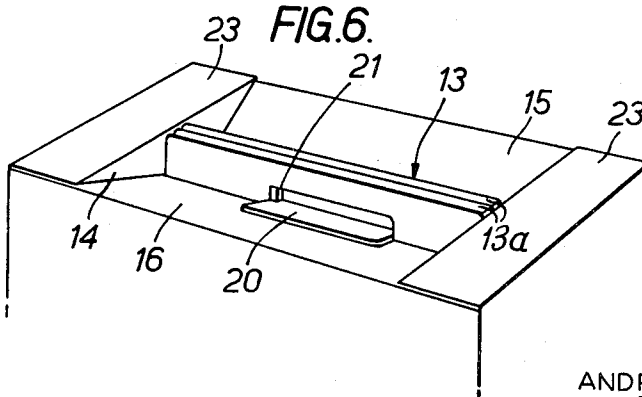


FIG. 6.



INVENTOR
ANDRÉ MAINDRON
BY

Brewster, Free, Haver & Bonheur
HIS ATTORNEYS

July 13, 1965

A. MAINDRON

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5 Sheets-Sheet 3

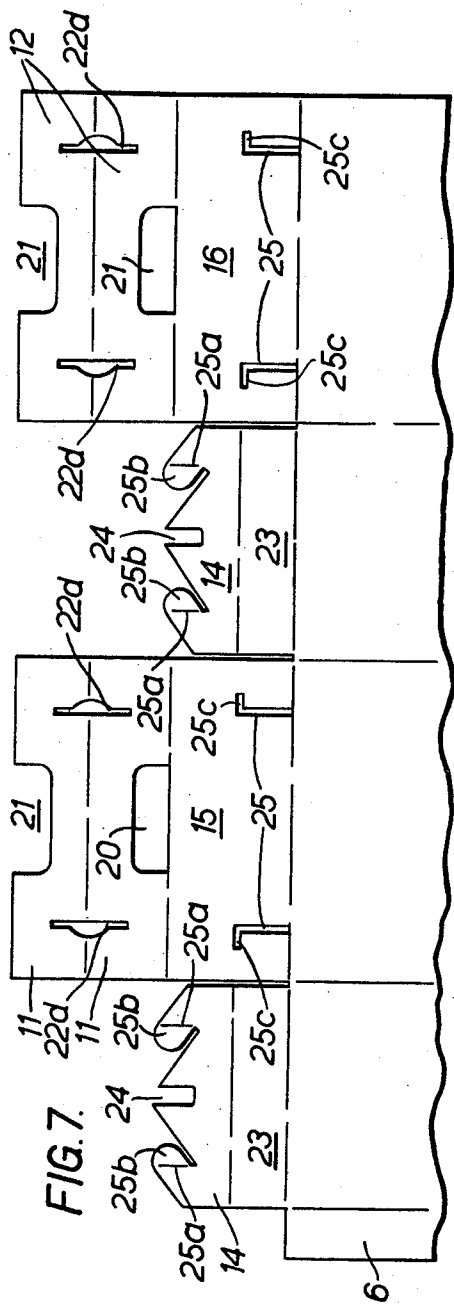
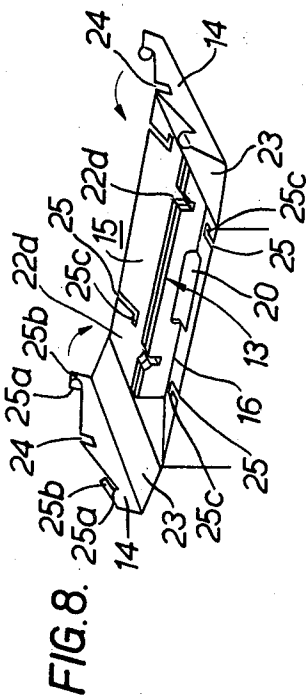


FIG. 8.

INVENTOR
ANDRE MAINDRON
BY

Brown, Kay, Free, Lewis & Donohue
HIS ATTORNEYS

July 13, 1965

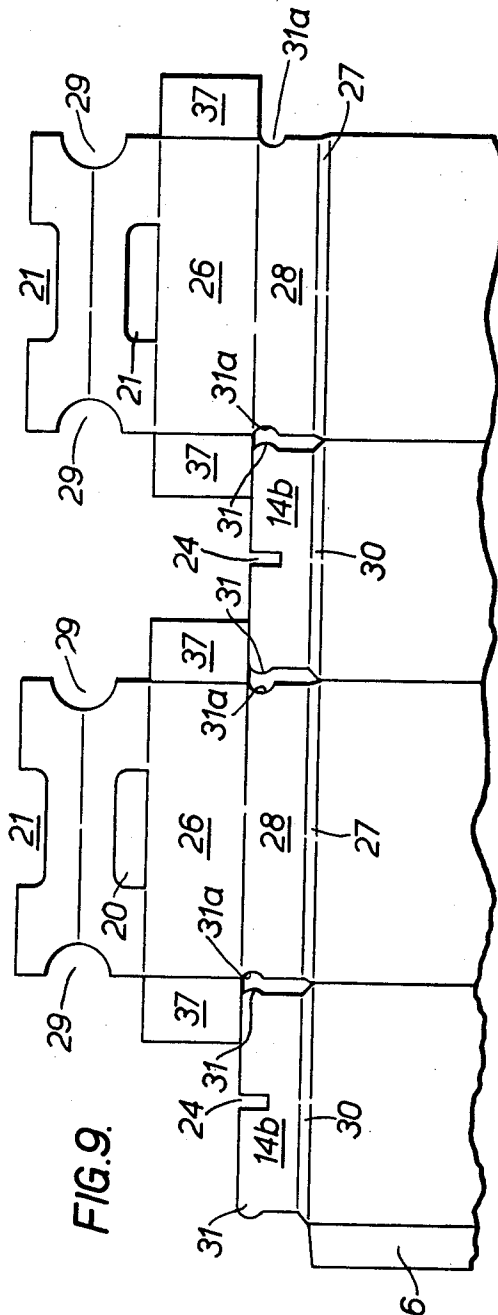
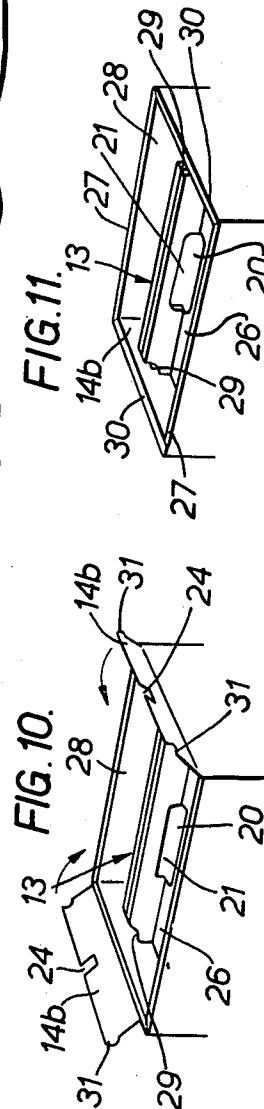
A. MAINDRON

3,194,480

COLLAPSIBLE PACK WITH RECESSED HANDLE

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5 Sheets-Sheet 4



INVENTOR
ANDRE MAINDRON
BY

Brunsbach, Free, Kane & Donohue
HIS ATTORNEYS

July 13, 1965

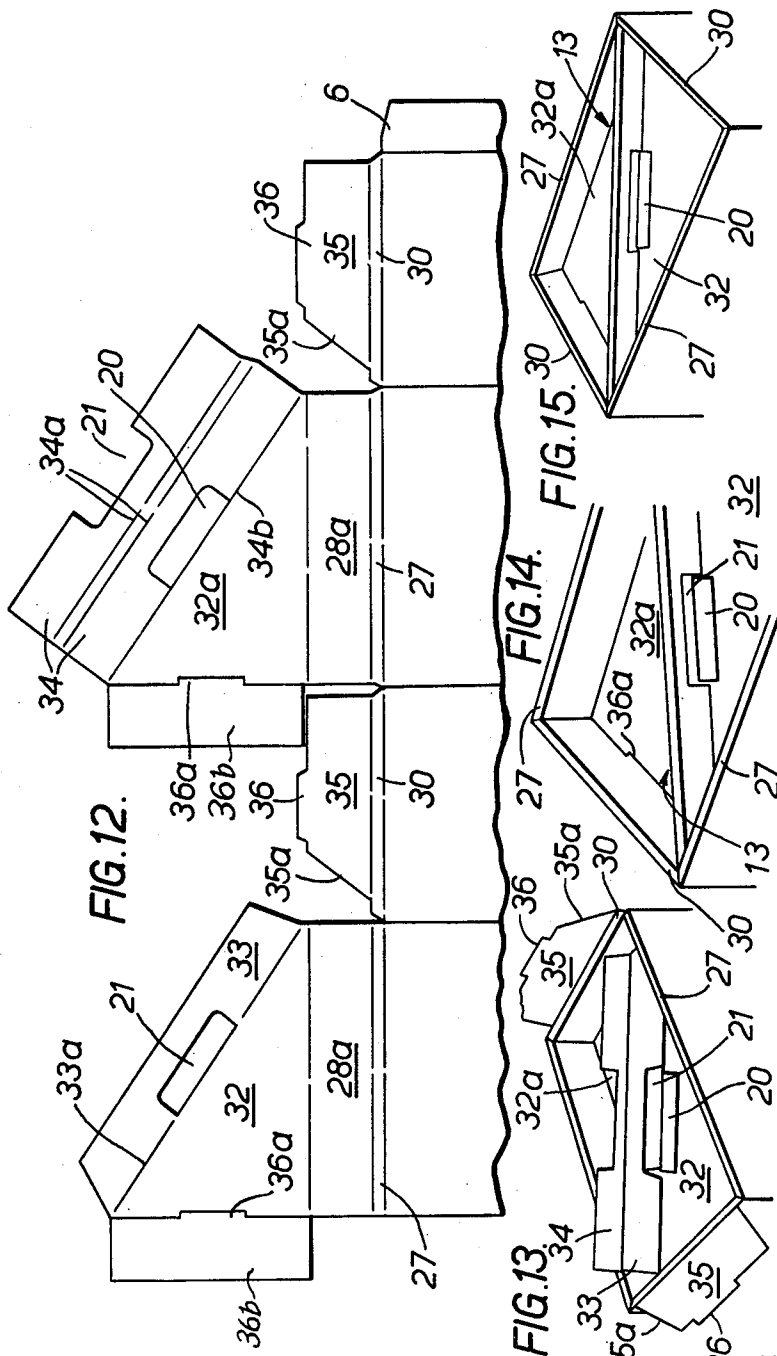
A. MAINDRON

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COLLAPSIBLE PACK WITH RECESSED HANDLE

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5 Sheets-Sheet 5



INVENTOR
ANDRE MAINDRON
BY
Philip H. Free, Harold D. Dwyer
HIS ATTORNEYS

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3,194,480

COLLAPSIBLE PACK WITH RECESSED HANDLE
André Maindron, Le Buisson, France, assignor to Lever
Brothers Company, New York, N.Y., a corporation of
Maine

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912,876

12 Claims. (Cl. 229—52)

This invention relates to a partially collapsible carton or pack, particularly to such a pack having a handle.

The practice of packaging relatively heavy products, e.g. washing preparations or detergent products in, for example, collapsible packs, is often inconvenient for the user when the packs or cartons are bulky and contain heavy quantities of the products. The standard type of pack, i.e. one without a handle, is not easy to carry after filling.

Packs which have a separate handle added, e.g. of plastic, or are provided with a cardboard handle made by cutting and folding, do not on the whole retain their general parallelepipedal shape after they have been made up because these handles generally protrude so that the packs cannot be stacked. This is a problem particularly if the packs are to be stored with their handles pointing upwards so that the latter can be reached without difficulty.

The present invention overcomes the above-mentioned problems and relates to a collapsible, stackable pack with recessed handle which may be made of cardboard or any similar product. It will deal with considerable loads and is characterised in that the handle is formed by the interaction of two parts of the pack which are integral with two opposing side walls of the pack. The handle is held in position during use of a filled pack by flaps formed by folding and turning down a part integral with the upper part of the other two walls of the pack.

According to some of the proposed embodiments of the invention, the parts of the pack which make up the handle are joined to the two side walls of the pack by panels which slope inwardly when the pack is closed and ready for use. In other embodiments, the parts making up the handle are joined to their side walls by parts which are horizontal, vertical and horizontal respectively, produced by folding a part which is attached to the upper part of the side walls three times.

The handle is arranged vertically. It can lie in a plane parallel with the two side walls with which its constituent parts are integral, or in a plane which passes through the diagonal of the rectangle corresponding to the top of the pack.

The flaps which serve to prevent the handle from rising when the pack is being used may each have a projection which fits into a corresponding slot in each of the two parts between the parts that form the handle and the corresponding side walls of the pack. The projections may be cut out in such a way as to form an interlocking arrangement which prevents the turned-down parts of the flaps from rising again when the pack is being moved.

In a preferred embodiment of the pack according to the invention, the slots designed to retain the flaps are rectangular.

The characteristics of the present invention will be more clearly understood on reading the following description of four different embodiments of packs according to this invention, embodiments which are given as non-limiting examples and which are described by reference to the accompanying schematic drawings in which:

FIGURE 1 is a blank of a first embodiment;

FIGURE 2 is a perspective view of the top of the pack

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shown in FIGURE 1 whilst it is being closed and before the recessed handle has been set up;

FIGURE 3 is a section along III—III in FIGURE 2;

FIGURE 4 is a perspective view of the top of the same pack after its recessed handle has been set up but before the flaps have been turned down;

FIGURE 5 is a perspective view showing the interaction of a flap with the slots in the handle and in the sloping panels;

FIGURE 6 is a perspective view of the top of the same pack when assembled;

FIGURE 7 is a blank of a second embodiment which has L-shaped slots in place of the slots of the first embodiment;

FIGURE 8 is a perspective view of the top of the pack shown in FIGURE 7 after the recessed handle has been set up but before the flaps have been turned down;

FIGURE 9 is a blank of a third embodiment;

FIGURE 10 is a perspective view of the top of the pack shown in FIGURE 9 before the flaps have been turned down;

FIGURE 11 is a perspective view of the top of the pack shown in FIGURE 9 after the flaps have been placed in position;

FIGURE 12 is a blank of a fourth embodiment;

FIGURE 13 is a perspective view of the top of the pack shown in FIGURE 12 whilst its handle is being set up and before the flaps have been turned down;

FIGURE 14 is a perspective view of a pack in which the handle is set up along another diagonal, showing in particular the way in which one of the horizontal connecting faces adjoining the handle interacts with one of the flaps;

FIGURE 15 is a perspective view of the top of the pack shown in FIGURE 14 after the flaps have been placed in position.

In the following description of the several embodiments, like parts are given the same reference numeral.

The blank shown in FIGURE 1 has the usual four side walls 1, 2, 3, 4, separated by fold lines 5. Side wall 1 can be joined to side wall 4 by means of a tab 6 which can be stapled or stuck to the back of side wall 1. The bottom of the pack is formed by four extensions 7 of the side walls, separated by cuts 7a, which are folded along fold lines 8 in the usual way and are then stapled into position in such a way as to close up the bottom of the pack.

The top of the blank has fold lines 9a, 9b and 10a, 10b. Side walls 1 and 3 are joined to the double flaps 11 and 12 respectively, these double flaps having central fold lines 11a and 12a respectively so that after folding along these fold lines they become ribs 13a, meeting in face to face relationship to form a handle 13 for the pack. This handle can be seen particularly clearly in FIGURES 4 to 6. The double flaps 11 and 12 are joined along fold lines 11b and 12b respectively to panels 15 and 16 which are joined to side walls 1 and 3 respectively. Side walls 2 and 4 are joined by way of panels 23 to flaps 14. Flaps 14, when they are turned down along fold lines 14a in conjunction with the folding of the panels 23 along fold lines 10a and 10b to a horizontal position, serve to hold the handle 13 in position.

The width of panels 15 and 16 is greater than half the length of the flaps 14 so that it is necessary to exert a little force and press panels 15 and 16 successively in the direction of the arrow 17 to make them adopt the sloping position shown in FIGURES 4 to 6. It is necessary to bring the two parts of each double flap 11 and 12 together simultaneously working in the direction of the arrow 18 in FIGURE 3 when the panels 15 and 16 will swivel downwards in the direction of the arrows 19. The tab 20 is integral with panel 15 and passes through the

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three handle slots 21 provided in flaps 11 and 12 to form a handle slot 21a. Double flaps 11 and 12 are also provided with slots 22 designed to interact with the pointed ends 22b of the flaps 14 which are cut out in such a way that it is necessary to exert force to make them slide down inside the slots 22a provided in panels 15 and 16 while parts 22c of the flaps 14 form protrusions which interlock with panels 15 and 16. The panels 23 once the flaps have been placed in position and interlocked, form two horizontal surfaces upon which another pack may be stacked safely and stably. The flaps 14 have central slots 24 which co-operate with slots 22 in double flaps 11 and 12. The interlocking action of the protrusions 22c which locks the flaps 14 into the sloping panels 15 and 16, at the same time ensures that the handle 13 is held in position as a result of the interaction of slots 24 and slots 22.

In the second embodiment (FIGURES 7 and 8), the slots 22a which were provided in panels 15 and 16 of the first embodiment are replaced by L-shaped slots 25. The central slots 24 in flaps 14 interact with slots 22d in flaps 11 and 12 in the same way as in the first embodiment but the shape of slots 22d is slightly different from that of slots 22 to make it easier for flaps 14 to fit obliquely into slots 25.

In this embodiment the interlocking parts of the flaps 14 have an extra fold 25a which forms a turn-back tab 25b that will go into the ends 25c of the slots 25, thus ensuring that the flaps lock. Tab 20, integral with panel 15 is provided for the assembly of the two parts of the handle 13.

In the third embodiment (FIGURES 9 to 11), the sloping panels 15 and 16 are replaced. Panel 15 is replaced by panel 27 and flaps 28 and 26 connected in that order by fold lines. This panel 27 and flaps 28 and 26 after assembly take up horizontal, vertical and horizontal positions respectively. Panel 16 is similarly replaced. Flaps 26 have extension flaps 37 which act to reinforce the side walls when the pack is assembled. The shape of the slots 21 in the handle is similar to those in the other embodiments and tab 20 passes through the slots 21 in the same way. In the ends of the handle 13 are slots 29 which make it possible to turn down the flaps 14b and to introduce the handle into the slots 24. Each flap 14b is joined to a side wall of the pack by a narrow panel 30 and after the pack has been set up, these panels form a horizontal surface which although smaller than the one provided in the first two embodiments and less suitable from the point of view of stacking the packs on top of one another, is nevertheless a stacking surface. The length of the handle may be reduced and the width of the panels 30 increased to improve stacking conditions.

The flaps 14b have projections 31 at the side which on assembly of the pack are folded so that they will interact with the notches 31a provided in the vertical flaps 28 so as to hold the flaps 14b in position and so prevent the handle 13 from rising.

In the fourth embodiment (FIGURES 12 to 15), panels 27 are integral with flaps 28a and panels 30 are integral with flaps 35. Flaps 28a are integral with horizontal triangular flaps 32 and 32a respectively. Handle 13 is formed by single flap 33 which is joined to flap 32 along a fold line 33a and by a double flap 34 which has two fold lines 34a running across the centre in such a way that the distance between the folds 34a makes it possible to insert flap 33 between the two parts of the double flap 34. The slots 21 in flaps 33 and 34 serve the same purpose as the slots 21 in the other embodiments. The flaps 35 intended to hold flaps 32 and 32a firmly in position after assembly have an oblique part 35a which will allow them to be turned down after the flaps 32 and 32a and the handle 13 have been placed in position.

FIGURE 13 shows how the top of the double flap 34 is turned down on to flap 33 and how the slots 21 will allow the tab 20—which is integral with flap 32a and

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joined to it along fold line 34b—to pass through. The flaps 35 have a projection 36 that is designed to interlock with slots 36a after the flaps are folded over the upstanding pieces 36b. The four turn-down panels 27 and 30 are shown to be very narrow and this pack is not so suitable for stacking the packs on top of one another. However, the profile of the flaps 35 could be altered so as to increase the width of the panels 30 which would give improved conditions for stacking.

It will be understood that the above described embodiments of the invention are illustrative only and modifications thereof will occur to those skilled in the art. Therefore, the invention is not limited to the specific apparatus disclosed herein but is to be defined by the appended claims.

What is claimed is:

1. A carton comprising a bottom and four side walls, panels connected to the walls and disposed inwardly thereof, flaps extending from the edges of the panels, one pair of said flaps extending from opposite panels and being folded to meet and form an upright recessed handle the upper edge of which does not project above a plane passing through the upper edges of said side walls, and the other pair of said flaps extending inwardly from the other opposite panels and engaging and securing said handle and its associated panels against upward movement.

2. A carton comprising a bottom and four side walls, a first pair of panels connected by first fold lines to the upper edges of two of the opposite side walls and extending inwardly to a position below the upper edges of said side walls, first flaps joined to said panels by second fold lines and doubled-over to form opposed upright ribs in face to face engagement in a plane substantially parallel with said side walls, said ribs having upper edges that do not project above a plane passing through the upper edges of said side walls, a second pair of panels connected to the other opposite side walls and lying substantially in the plane of said upper edges of said side and end faces, and second flaps attached to each of the second pair of panels engaging and securing the ribs and their associated panels against upward movement.

3. A carton as defined in claim 2, in which a handle slot is formed in said upright ribs.

4. A carton as defined in claim 3, in which is provided spaced-apart and mutually aligned first slots in the first pair of panels, and second slots in the first flaps in alignment with said first slots, the second flaps extending into and interlocking with said first and second slots to secure the ribs and their associated panels against upward movement.

5. A carton as defined in claim 4, in which said first slots are L-shaped and said second flaps include tabs each interlocking with one of said L-shaped slots.

6. A carton comprising a bottom and four side walls, first and second pairs of panels connected to the upper edges of the two pairs of opposite side walls, respectively, the panels extending inwardly substantially perpendicularly to said walls, first and second pairs of flaps connected to the inner edges of said first and second pairs of panels, respectively, and extending downwardly, a third pair of flaps connected to the lower edges of said first pair of flaps and extending substantially perpendicularly to the side walls, fourth flaps connected to the side edges of the third pair of flaps and extending upwardly therefrom adjacent to opposite side walls, two doubled-over flaps connected to the inner edges of the third pair of flaps to form opposed upright ribs in face to face engagement in a plane substantially parallel to said side faces, said ribs having upper edges that do not project above a plane passing through the upper edges of said side walls, and locking flaps attached to the inner edges of the second pair of panels engaging and securing said ribs and said third pair of flaps against upward movement.

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7. A carton as defined in claim 6, in which notches are provided at each end of said locking flaps, and projections at the ends of said ribs fit into the notches to secure the ribs and third pair of flaps against upward movement.

8. A carton comprising a bottom and four side walls, first and second pairs of panels connected to the upper edges of the two pairs of opposite side walls, respectively, the panels extending inwardly and substantially perpendicularly to said faces, first and second pairs of flaps connected to the inner edges of said first and second pairs of panels, respectively, and extending downwardly, triangular flaps connected to the lower edges of said first pair of flaps and extending substantially perpendicularly to the side walls, second flaps connected to the side edges of the triangular flaps and extending upwardly therefrom adjacent to opposite side walls, a slot along a portion of each of the connections between the triangular and second flaps, a single flap and a doubled-over flap respectively connected to the inner edges of the triangular flaps, the doubled-over flap encasing the single flap to form an upright recessed handle disposed diagonally across the top of said carton, the upper edge of said handle not projecting above a plane passing through the upper edges of said side walls, and a pair of third flaps connected to the inner edges of the second panels and overlying said second flaps, tabs on the edges of the third flaps that fit into said slots and secure the handle and triangular flaps against upward movement.

9. A unitary carton blank suitably cut and scored comprising, in combination, four connected side walls, a tab connected to one side wall which is adapted to be affixed to the side wall adjacent thereto when the carton is assembled, extensions joined to the lower edges of said walls which are foldable inwardly of said walls to form a bottom, first and second pairs of panels joined to the upper edges of the side walls, each of the first pair of panels alternating with each of the second pair of panels, the first pair of panels inwardly foldable to close the top of the carton and having spaced-apart slots therein, a second pair of the panels being foldable to overlie portions of the first pair of panels that lie below a plane passing through the upper edges of said side walls, a first pair of flaps joined to the upper edges of the first pair of side walls and foldable upon themselves to form opposed upright ribs meeting in face to face engagement when the carton is assembled, said first flaps having spaced-apart slots therein, and a second pair of locking flaps joined to the upper edges of the second pair of panels and foldable downwardly to engage said slots.

10. A carton blank as defined in claim 9, wherein the first flaps have elongated handle slots therein.

11. A unitary carton blank suitably cut and scored comprising, in combination, four connected side walls, a tab connected to one side wall which is adapted to be affixed to the side wall adjacent thereto when the carton is assembled, extensions joined to the lower edges of said walls which are foldable inwardly of said walls to form

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a bottom, first and second pairs of panels joined to the upper edges of the side walls, each of the first pair of panels alternating with each of the second pair of panels, first and second pairs of flaps joined to the edges of the first and second pairs of panels, respectively, a third pair of flaps joined to the edges of said first pair of flaps, the first pair of panels and the first and third pairs of flaps being foldable inwardly, downwardly and inwardly, respectively, to close the top of the carton, notches formed in the ends of the second panels, fourth flaps joined to the side edges of the third flaps, said fourth flaps foldable upwardly to lie adjacent to the side walls when the carton is assembled, fifth flaps joined to the end edges of the third flaps and foldable upon themselves to form opposed upright ribs meeting in face to face engagement, and the second pair of flaps joined to the second pair of panels being foldable inwardly and downwardly, respectively, to engage and secure the ribs and third flaps.

12. A unitary carton blank suitably cut and scored comprising, in combination, four connected side walls, a tab connected to one side wall which is adapted to be affixed to the side wall adjacent thereto when the carton is assembled, extensions joined to the lower edges of said faces which are foldable inwardly of said faces to form a bottom, first and second pairs of panels joined to the upper edges of the side walls, each of the first pair of panels alternating with each of the second pair of panels, first and second pairs of flaps joined to the edges of the first and second panels, respectively, triangular flaps joined to the edges of the first pair of flaps, the first pair of panels and the first and triangular flaps being foldable inwardly to close the top of the carton, third flaps joined to the side edges of the triangular flaps, said third flaps foldable upwardly to lie adjacent to the side walls when the carton is assembled, a slot along a portion of the junction between the triangular and second flaps, a single flap joined to the edge of one of said triangular flaps, and a double flap joined to the edge of the other triangular flap and foldable to encase the single flap to form an upright recessed handle extending diagonally across the top of the carton, the second pair of flaps joined to the edge of the second panels being foldable inwardly and downwardly, respectively, to engage the slots and secure the handle and triangular flaps.

References Cited by the Examiner

UNITED STATES PATENTS

1,787,736	1/31	Schrier	229—39
2,006,454	7/35	Hatch	229—52
2,007,810	7/35	Oman	229—52
2,306,343	12/42	Neubecker et al.	229—52
2,537,318	1/51	Scoble	229—38
2,714,982	8/55	Strauss	229—52 X
3,150,769	9/64	Cohn	229—52 X

FRANKLIN T. GARRETT, *Primary Examiner.*