Dec. 1, 1959 J. E. BREUNIG 2,915,236

CARTON AND HANDLE STRUCTURE

Filed Oct. 30, 1956

FIG. 1.

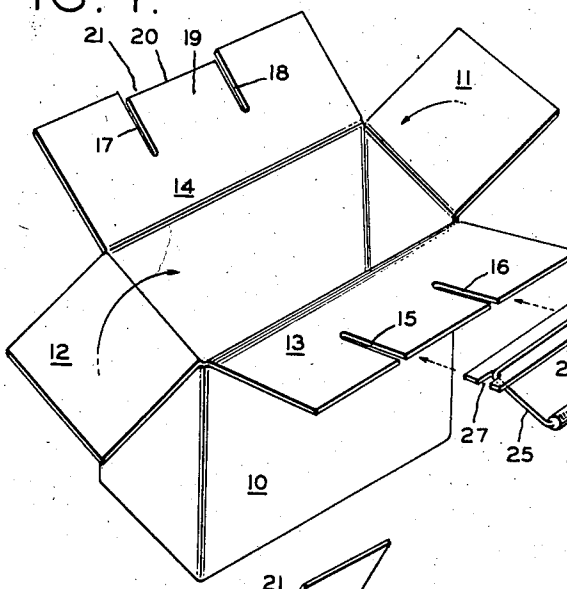


FIG. 2.

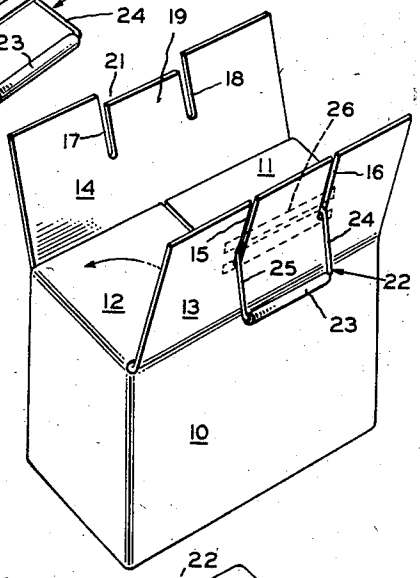


FIG. 3.

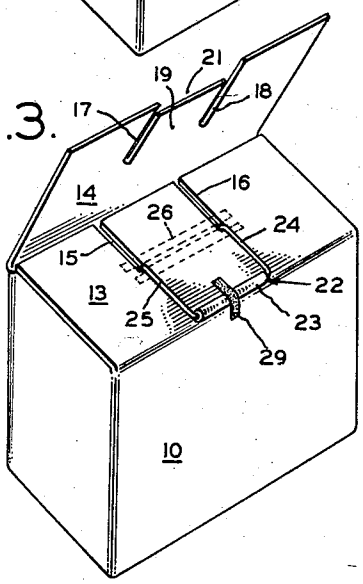


FIG. 4.

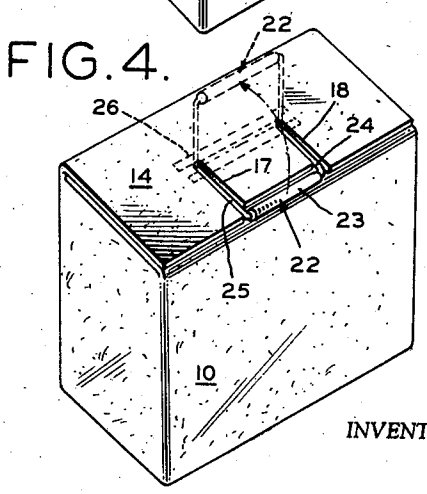
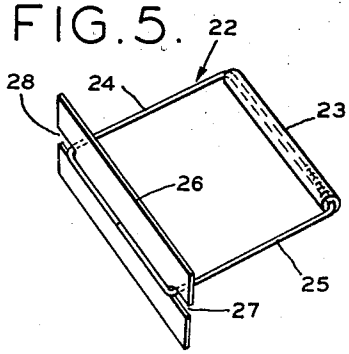


FIG. 5.



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CARTON AND HANDLE STRUCTURE

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2 Claims. (Cl. 229—52)

This invention relates to an improved carton and handle structure, the handle being provided to permit ease of carrying of the carton and being retractable into the top thereof.

Cartons intended for retail distribution and carrying fairly large loads, say 20 to 25 lbs., usually should be provided with full end flaps, i.e., end flaps which meet in the middle of the carton, and with side flaps which are of full width to extend completely to the opposite side of the carton. These large flaps are provided to give the carton sufficient strength and support during stacking and transportation and also are designed to prevent sifting of fines and dust particles through the closure joints.

The transportation of such a carton, carrying such a weight of material by the purchaser presents serious problems unless appropriate handle means are provided. Such handle means should be easily installable, should not detract from the strength of the carton, should be capable of being sealed in a standard case sealer, and should obviate sifting at the points of juncture. The handle should also be capable of being recessed in the top of the carton so as to be out of the way during stacking or shipping.

It is therefore one object of this invention to provide such a carton and handle structure as will meet the foregoing requirements.

It is a further object of this invention to provide such a handle which is easily installed by the packer and which will be recessed out of the way during stacking or shipping of the carton.

It is another object of this invention to provide such a handle structure which may be readily brought into play for the transporting of the cartons.

Other and further objects of this invention will become apparent as this specification proceeds.

Referring to the drawings,

Fig. 1 is a perspective view of a carton embodying the present invention with its end and side flaps in open condition to receive the filling material and showing the handle structure in position to be inserted into the slots provided in the inner of the side flaps;

Fig. 2 is a perspective view of a filled carton with the end flaps pushed inwardly into horizontal position over the contents, the side flaps still being in opened position, and with the handle member inserted in the appropriate slots in one of the side flaps;

Fig. 3 is a perspective view of the carton with the end flaps folded over the contents and with the inner, handle carrying side flap glued downwardly over the end flaps, the other side flap still being in raised or open position;

Fig. 4 is a perspective view of the fully closed carton with both side flaps in horizontal, glued position and with the handle structure in horizontal or recessed position against the top of the carton; and

Fig. 5 is a detailed view of the handle structure prior to insertion into the slots of the inner of the two side flaps.

In the drawing, **10** designates the carton per se which is preferably rectangular in shape and formed of heavy corrugated stock with full end and side flaps at both top and bottom, the end flaps meeting in the middle of the carton and the side flaps being of a width to extend completely across the width of the carton when in closed position.

As shown in Fig. 2, end flaps **11** and **12** are preferably of a length equal to one-half the length of the carton so as to meet in the center thereof when folded inwardly over the contents of the carton in closed position.

Side flaps **13** and **14** are preferably of a width substantially equal to the width of the carton so as to extend completely across the carton to its opposite edge when folded inwardly in closed position, as shown in Fig. 4. Side flap **13** is provided with parallel, rectangularly disposed slots **15** and **16** designed to receive the handle member, as will hereinafter be discussed in detail. Slots **15** and **16** are preferably of a width to readily, slidably receive the strands of the handle structure and are let into flap **13** to a distance equal to one-half its width. Slots **15** and **16** are so spaced in side flap **13** as to divide it into three approximately equal segments and are so disposed in flap **13** as to provide a central positioning for the handle **22** at the top surface of the carton when all flaps are closed and sealed.

Side flap **14** is provided with parallel, rectangularly disposed slots **17** and **18** which are of the same width as slots **15** and **16** of flap **13** and which also extend into flap **14** to a distance equal to one-half its width, being so located that when side flaps **13** and **14** are folded inwardly, with flap **13** under flap **14**, slots **17** and **18** will be in alignment with and in extension of slots **15** and **16** of side flap **13**.

As shown, the center segment **19** of side flap **14**, between slots **17** and **18** thereof, is cut back at its outer edge **20** to an appreciable extent to provide a recess **21** for the reception of the handle grasp when the flaps are sealed down, side flap **14** being sealed over side flap **13**.

Referring to the handle structure **22**, it comprises a preferably rectangular wire or cord member provided at its outer extremity with a handle grasp **23** and at its inner extremity with a reinforcing member or plate **26**. The handle may be formed of wire or cord or of any other appropriate material but is preferably formed of heavy gauge wire rectangularly bent, as shown, and provided at its outer extremity with a cylindrical hand grasp **23** of paper, wood or other appropriate material. Handle **22** is preferably of a width equal to the distance between slots **15—16** and **17—18** and is readily slidable thereinto.

Reinforcing member **26** is preferably formed of heavy corrugated paper, wood or other appropriate rigid material and is slotted at its extremities at **27** and **28** to receive the side strands **25** and **24** of handle **22**. Its purpose is to provide additional strength and support to the handle structure under side flaps **13** and **14** and also to prevent inward movement of the side strands **24** and **25** of handle **22** which might result in tearing or damage to the carton top structure. Use of this reinforcing member **26** is optional. It may be dispensed with where the weight carried in the carton justifies.

In assembling the carton and handle structure the following procedure is preferably followed. With the carton filled, end flaps **11** and **12** are first folded inwardly over the contents until their inward edges meet. Handle member **22** is then inserted into side flap **13** by sliding strand **24** thereof into slot **16** and strand **25** into slot **15** of side flap **13**. The handle member **22** is then pushed inwardly in slots **15** and **16** until it reaches their inner extremities and reinforcing member **26**, if used, is pulled flush against the inner surface of side flap **13** with side strands **24** and **25** fully seated at the inner extremities

of slots **16** and **15**. Glue is then applied to the inner surface of side flap **13** which is then forced downwardly over end flaps **11** and **12** to provide a preliminary bond therebetween. A small piece of adhesive tape **29** is then applied over handle grasp **23** of handle **22** and pressed downwardly against the top of side flap **13** to hold handle **22** in horizontal position against flap **13**, as shown in Fig. 3. The underside of side flap **14** is then spread with glue and side flap **14** is forced downwardly over the outer surface of side flap **13** to complete the sealing operation. It will be seen that slots **17** and **18** of side flap **14** fall respectively over side strands **25** and **24** of handle **22** and that handle grasp **23** falls within recess **21** at the upper center of side flap **14**. Thus, with the carton fully sealed, i.e., with side flap **13** glued downwardly over end flaps **11** and **12** and side flap **14** glued downwardly over the outer surface of side flap **13**, the entire handle structure **22** is maintained flush with the outer surface of side flap **14** with its side strands **25** and **24** respectively fitting within slots **17** and **18** of side flap **14** and its handle grasp **23** snugly fitted within recess **21** at the upper center of side flap **14**. With the handle member **22** maintained by tape **29** in flush position in the top of the sealed carton, the carton may be stacked and handled without any interference to movement from the handle structure **22**.

When it is desired to transport the carton by hand the tape **29** may be pulled upwardly from handle grasp **23** of handle **22** and the handle may then be readily raised into vertical position by raising it at right angles through slots **17** and **18** of side flap **14**, as shown in Fig. 4. Due to the manner of disposition of slots **15** and **16** in side flap **13** and the disposition of slots **17** and **18** in side flap **14** the slots are appropriately sealed upon closure by the inner portions of side flaps **13** and **14**, leaving no opening therein for the escape of dust or fines.

After transporting the carton by means of handle **22** the handle may, if desired, be dropped again to horizontal position through slots **17** and **18** and may again be sealed in this position by means of tape **29**.

As has been hereinbefore stated, handle member **22** is preferably formed of heavy gauge wire but may be formed of a heavy cord or plastic material. If a cord is utilized it is always advisable to provide reinforcing member **26** at its inner extremity to prevent cutting of the side flaps **13** and **14** by the cord during transportation by the handle.

The invention is susceptible of other embodiments without departing from the spirit thereof. As has hereinbefore been stated, reinforcing member **26** may be used or not, depending upon the circumstances of use and the weight carried in the carton.

This specification is by way of illustration of one embodiment of the invention only. Attention is directed to the appended claims for a limitation of the scope of this invention.

What is claimed is:

1. A carton and handle structure particularly characterized by its strength and by its freedom from sifting of fines or dust particles through the closure joints thereof comprising a carton having an uninterrupted, continuous side wall enclosing a volume of rectangular cross-section, a closed end portion completely closing the bottom end of said carton, a pair of opposed generally rectangular end flaps extending from two opposing edges of the top end of the carton and foldable across said top end, a pair of opposed generally rectangular side flaps extending from the remaining two edges of said top end, said side flaps each having substantially the same size and shape as the top end of the carton and being adapted to fold across said end flaps in overlapping relation, each of said side flaps having two parallel attenuated slots which are perpendicular to the edge from which the side flap extends, one slot in each side flap being aligned with a slot in the other side flap, each of said slots starting at the free end of a side flap and extending toward the edge from which the said flap extends to a point spaced from the edge by a distance which is approximately equal to one-half the width of said top end at its widest point along a line parallel to said slots, the inner ends of aligned slots overlapping to provide openings through said top end, the free end of the outer side flap being cut back between its slots to form a cut-away space, and a rectangular strand handle member the side strands of which pass through said openings and are rotatably movable therein when said side flaps are in horizontal, sealed position over said end flaps, said handle member being foldable down on top the carton when not in use and said side strands having a length such that the handle portion connecting their outer ends lies in the cut-away space.

2. A carton and handle structure particularly characterized by its strength and by its freedom from sifting of fines or dust particles through the closure joints thereof comprising a carton having an uninterrupted, continuous side wall and top and bottom ends, a closed end portion completely closing the bottom end, a pair of opposed end flaps extending from opposite edges of said top end and foldable across said top end, a pair of opposed side flaps extending from opposite edges of said top end adjacent to said end flaps, said side flaps being adapted to fold across said end flaps and to overlap each other, the outline of said folded side flaps being substantially identical to the outline of said top end, each of said side flaps having two parallel attenuated slots which are perpendicular to the edge from which the side flap extends, one slot in each side flap being aligned with a slot in the other side flap, each of said slots starting at the free end of a side flap and extending inwardly therefrom a distance approximately equal to one half the extent of overlap of said side flaps, the inner ends of aligned slots overlapping to provide openings through said top end, a rectangular strand handle member the side members of which pass through said openings and are connected by an inner handle portion underlying the overlapping portions of said side flaps, and a flat reinforcing member having a slot at each end thereof and adapted to bear against the inner surface of the inner of said side flaps, said reinforcing member being fitted within the inner portion of said handle member with the ends of said inner portion turning outwardly in the bottoms of said slots to form said side members.

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