June 13, 1944. R. W. VERGOBBI 2,351,165

CARTON

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Fig. 1

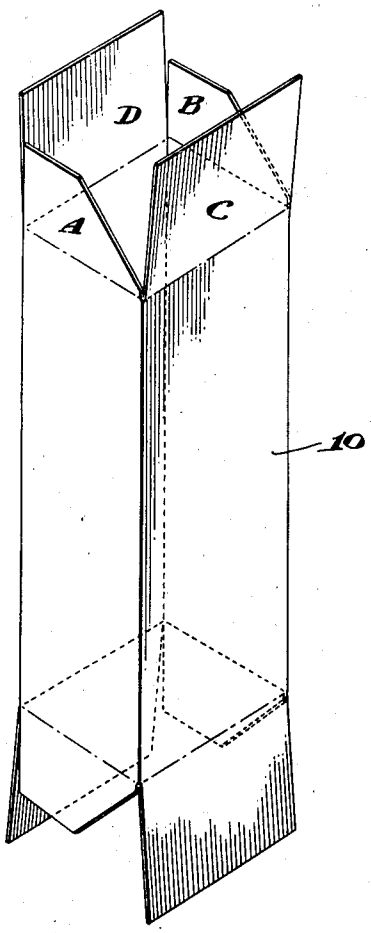


Fig. 2

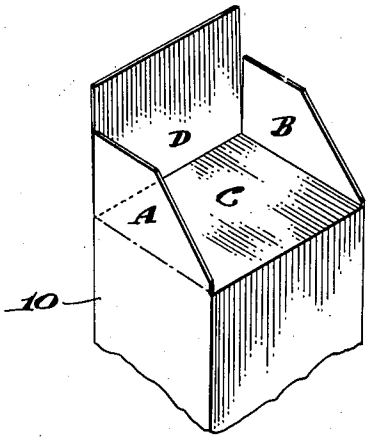


Fig. 3

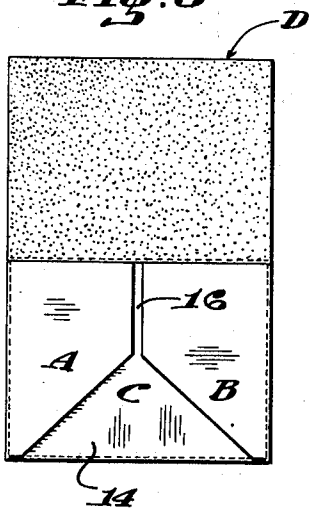
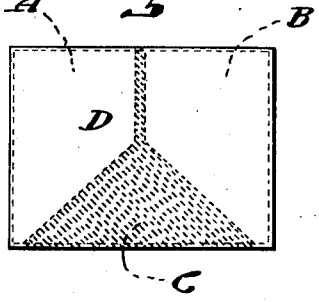


Fig. 4



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Fig. 5

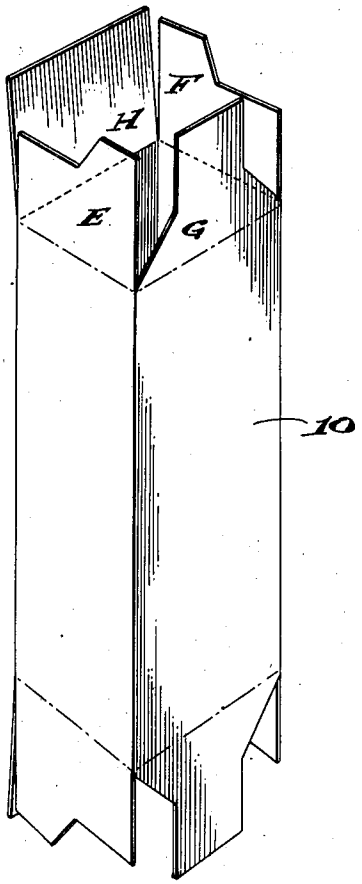


Fig. 6

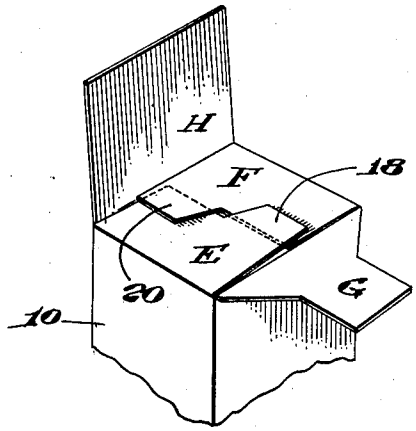


Fig. 7

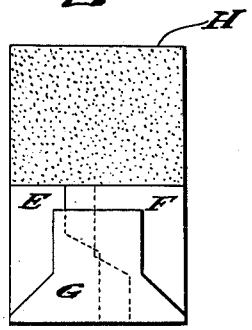
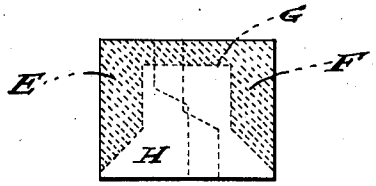


Fig. 8



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UNITED STATES PATENT OFFICE

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CARTON

Robert William Vergobbi, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Application July 24, 1940, Serial No. 347,138

6 Claims. (Cl. 229—37)

This invention relates to a carton.

The object of the invention is to provide a novel and improved construction of sealed carton designed to provide a tight seal for the top, bottom, or both ends of the carton. The novel sealed closure is particularly useful in those cartons constructed of relatively light board.

With this general object in view and such others as may hereinafter appear, the invention consists in the sealed carton and in the various structures, arrangements and combinations of parts hereinafter described and particularly defined in the claims at the end of this specification.

In the drawings which illustrate the preferred embodiments of the invention, Fig. 1 is a perspective view of a carton forming the subject matter of the present invention in its fully opened position; Fig. 2 is a perspective detail showing the first step in closing the flaps of the carton to produce the present sealed carton; Fig. 3 is a plan view showing the end flaps folded down to expose portions of the underlying flap and having adhesive applied to the undersurface of the remaining flap; Fig. 4 is a plan view of the last flap folded over, the shaded portions representing those portions of the lowermost flap which become adhesively affixed to the top flap; Fig. 5 is a perspective view of a modified form of a carton embodying the present invention; Fig. 6 is a perspective detail showing the end flaps first folded over in locking engagement; Fig. 7 is a plan view showing one of the wider flaps folded over to expose portions of the two underlying flaps, and showing adhesive applied to the undersurface of the remaining flap; and Fig. 8 is a plan view showing the top flap folded over, the shaded portions representing those portions of the two first folded flaps which become adhesively affixed to the top flap.

In general, the present carton comprises a body portion of rectangular shape having a flap formed as an extension of each panel thereof and the flaps are designed to be folded down to form a closure for the end of the carton. In order to provide a most efficient and tight seal between the flaps, provision is made for folding down three of the flaps and for adhesively affixing the under-surface of the last folded flap to the previously folded flaps. The three flaps which are first folded down are shaped to expose a substantial portion of each flap, whereby, when the outer or last folded flap is folded down, a satisfactory and tight seal may be affected by adhesively affixing the under-surface of the fourth or last flap to the exposed portions of the three flaps which have been previously folded down.

Referring now to the drawings, in Figs. 1 through 4, I have illustrated one embodiment of the invention in which 10 represents the body portion of the carton provided with the flaps A, B, C and D, formed as extensions of corresponding panels of the carton body. In order to form the desired efficient and tightly sealed end closure for the carton, provision is made for folding down one of the wider flaps, such as C, forming a closure for the end of the carton. The two opposed and intermediate flaps A and B are trapezoidal-shaped and extending to a point approximately medially of the narrow sides of the carton so that, when folded down, in the manner illustrated in Fig. 3, onto the previously folded wider flap C, they expose a triangular portion 14 of the underlying flap C, and when the last flap D is folded down, the adhesive coating may be affixed directly to the two intermediate flaps A and B, and to the exposed triangular portion 14 of the underlying flap C, thus providing in effect a continuous seal across the entire end of the carton and securely uniting the flap D to each of the previously folded down flaps A, B and C. The flaps A and B may and preferably will be of a width such as to expose a narrow strip 16 which further assists in securing the outer flap D to the first folded flap C across the entire width thereof.

In Figs. 5 through 8, I have illustrated a modification of the structure of the carton which is characterized by the folding down of the two narrower panel flaps E, F and subsequently folding down and overlapping the wider panel flaps G, H. In such a structure, it is preferred to construct one of the wider panel flaps G of a shape such as to expose substantial portions of the two previously folded down narrower flaps E, F so that when the outer or final flap H is folded down, it may be adhesively secured to each of the previously folded flaps, in the manner illustrated in Figs. 7 and 8. In order to provide additional support for the flaps during the sealing operation, it is preferred to form the two narrower flaps in the manner illustrated in Figs. 5 and 6 to provide trapezoidal extensions or locking tabs 18, 20 extending from the adjacent edges thereof for locking together the two flaps so that when the remaining two flaps are folded down and pressed during the sealing operation, sufficient support is provided to enable this operation to be efficently performed.

It will be noted from Figures 7 and 8 that

the flap G is of less length than the width of the narrow flaps E and F and that its sides are cut inwardly at an angle of about 45 degrees from a point a short distance from its fold line and then along a line parallel with the narrow sides of the carton for the remainder of its length, whereby substantially trapezoidal sections are removed from each side of the flap G and the remainder of the flap partially covers the medially overlapping portions of the narrow flaps E and F leaving a substantial portion of these narrow flaps exposed along the side edges thereof remote from the fold line of the flap G and also leaving substantial areas of the narrow flaps E and F exposed adjacent their fold lines. Accordingly when the wide flap H is folded down upon the overlapping flaps E, F and G, the flap H will be adhesively secured to the outer surface of the wide flap G and to the side and edge areas of the narrow flaps E and F not covered by the flap G.

In both forms of invention disclosed herein, the flexibility and thinness of the board stock assure a tight seal between the substantially rectangular flaps D and H, respectively, with the exposed areas of the underlying flaps.

The present structure of carton is particularly useful in order to enable satisfactory tight seals to be made when the body and flap forming portions of the carton are composed of relatively light and more or less flexible board.

While the preferred embodiments of the invention have been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:

1. A carton formed from thin, flexible board stock, comprising: a body portion of generally rectangular shape provided with a flap joined thereto along fold lines and formed as an extension of each panel thereof, whereby two narrow flaps and two relatively wide flaps are arranged opposite each other, the two narrow flaps and one of said wide flaps being disposed in overlapping relation and completely closing the open end of the carton, said overlapping flaps being so shaped and arranged that a substantial area of each of the three overlapping flaps is exposed at the portion thereof adjacent its fold line, the other of said wide flaps having a shape and area corresponding to that of the carton end and being adhesively secured to the exposed areas of the three underlying flaps, the flexibility and thinness of the board stock assuring a tight seal against the exposed area of said three underlying flaps.

2. A carton formed from thin, flexible board stock, comprising: a body portion of generally rectangular shape provided with a flap formed as an extension of each panel thereof and connected to the panel along a fold line, whereby two narrow flaps and two relatively wide flaps are arranged opposite each other, said narrow flaps extending inwardly from their respective fold lines a distance sufficient to overlap at a zone medially of the narrow sides of said carton and having a configuration effective to close the open end of said carton when arranged in overlapping relation, one of said wide flaps being folded over upon said overlapping narrow flaps, said wide flap being shorter than the narrow width of the carton and having its sides cut inwardly at an angle from a point a short distance from its fold line and then along a line generally parallel with the narrow sides of the carton for the remainder of its length, whereby substantially trapezoidal sections are removed from each side of said wide flap and the remainder of said wide flap partially covers said medially overlapping portions of said narrow flaps leaving a portion exposed along the side edges of said narrow flaps remote from the fold line of said wide flap and also leaving substantial areas of said narrow flaps exposed adjacent the fold lines of said narrow flaps, the other wide flap having a substantially rectangular shape corresponding to that of the end of the carton and being folded over on the three underlying overlapped flaps and adhesively secured to the outer surface of said wide flap and to the side and edge areas of the two narrow flaps not covered by said one wide flap, the flexibility and thinness of the board stock assuring a tight seal against the exposed areas of the three underlying flaps.

3. A carton formed from thin, flexible board stock comprising: a body portion of generally rectangular shape provided with a flap formed as an extension of each panel thereof and connected to the panel along a fold line, whereby two narrow flaps and two relatively wide flaps are arranged opposite each other, said narrow flaps extending inwardly from their respective fold lines to a point substantially medially of the narrow sides of said carton and having mutually overlapping extensions interlocking the adjacent ends of said narrow flaps in a substantially flat plane, one of said wide flaps being folded over upon the extensions of said overlapping narrow flaps, said wide flap having each of its sides provided with a trapezoidal notch extending longitudinally from a point a short distance from its fold line to the end thereof, whereby said wide flap only partially covers said overlapping narrow flaps leaving substantial areas of said narrow flaps exposed adjacent the fold lines of said narrow flaps, the other wide flap having a substantially rectangular shape corresponding to that of the end of the carton and being folded over upon the three underlying overlapped flaps and adhesively secured to the outer surface of said wide flap and to the area of the two narrow flaps not covered by said one wide flap, the flexibility and thinness of the board stock assuring a tight seal against the exposed areas of the three underlying flaps.

4. A carton formed form thin, flexible board board stock, comprising: a body portion of generally rectangular shape provided with a flap formed as an extension of each panel thereof and connected to the panel along a fold line, whereby two narrow flaps and two relatively wide flaps are arranged opposite each other, said narrow flaps extending inwardly from their respective fold lines to a point substantially medially of the narrow sides of said carton and having mutually overlapping trapezoidal extensions interlocking the adjacent ends of said narrow flaps in a substantially flat plane, one of said wide flaps being folded over upon the trapezoidal extensions of said overlapping narrow flaps said wide flap having each of its sides provided with a trapezoidal notch extending longitudinally from a point a short distance from its fold line to the end thereof and having a length shorter than the width of said narrow flaps, whereby said wide flap only partially covers said overlapping narrow flaps leaving substantial areas of said narrow flaps exposed adjacent the fold lines of said

narrow flaps and along the side edges of said narrow flaps remote from the fold line of said wide flap, the other wide flap having a substantially rectangular shape corresponding to that of the end of the carton and being folded over on the three underlying overlapped flaps and adhesively secured to the outer surface of said wide flap and to the side and edge areas of the two narrow flaps not covered by said one wide flap, the flexibility and thinness of the board stock assuring a tight seal against the exposed areas of the three underlying flaps.

5. A carton formed from thin, flexible board stock, comprising: a body portion of generally rectangular shape provided with a flap formed as an extension of each panel thereof and connected to the panel along a fold line, whereby a pair of narrow flaps and a pair of relatively wide flaps are arranged opposite each other, the flaps of one of said pairs of flaps extending inwardly from their respective fold lines and having mutually overlapping and interlocking portions arranged to support each other in a substantially flat plane, whereby to form a relatively rigid supporting surface against which the other pair of opposing flaps can be pressed, one of the flaps of said other pair being folded over upon said first pair of overlapping flaps and having its sides removed from a point a short distance from its fold line to its end to thereby expose substantial areas of the underlying flaps adjacent their fold lines, the second flap of said other pair of flaps having a substantially rectangular shape corresponding to that of the end of the carton and being folded over on the three underlying overlapped flaps and adhesively secured to the outer surface of its opposing flap and to the areas of said first-mentioned pair of flaps not covered by said opposing flap, the flexibility and thinness of the board stock assuring a tight seal against the exposed areas of the three underlying flaps.

6. A carton formed from thin, flexible board stock, comprising: a body portion of generally rectangular shape provided with a flap formed as an extension of each panel thereof and connected to the panel along a fold line, whereby a pair of narrow flaps and a pair of relatively wide flaps are arranged opposite each other, the flaps of one of said pairs of flaps extending inwardly from their respective fold lines to a point substantially medially of the carton and having mutually overlapping and interlocking extensions arranged to support said flaps in a substantially flat plane, whereby to form a relatively rigid supporting surface against which the other pair of opposing flaps can be pressed, one of the flaps of said other pair being folded over upon said first pair of overlapping flaps and having its sides removed from a point a short distance from its fold line to its end to thereby expose substantial areas of the underlying flaps adjacent their fold lines and also being of less length than the width of said pair of underlying flaps so that said underlying flaps are also exposed along the side thereof remote from the fold line of said flap, the second flap of said other pair of flaps having a substantially rectangular shape corresponding to that of the end of the carton and being folded over on the three underlying overlapped flaps and adhesively secured to the outer surface of its opposing flap and to the side and edge areas of said first-mentioned pair of flaps not covered by said opposing flap, the flexibility and thinness of the board stock assuring a tight seal against the exposed areas of the three underlying flaps.

ROBERT WILLIAM VERGOBBI.