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L. L. EDMUNDS

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CARTON

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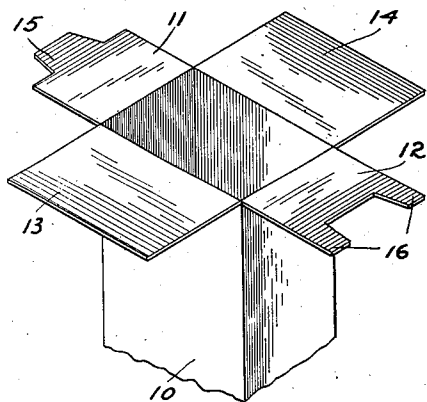


Fig. 1.

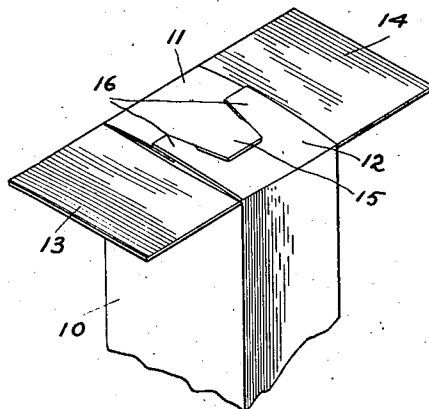


Fig. 2.

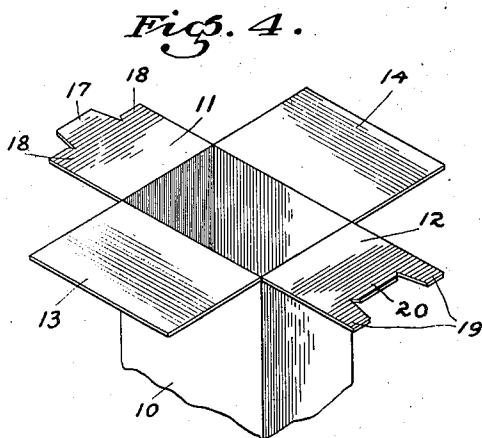


Fig. 4.

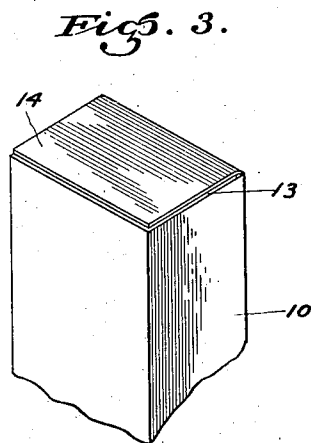


Fig. 3.

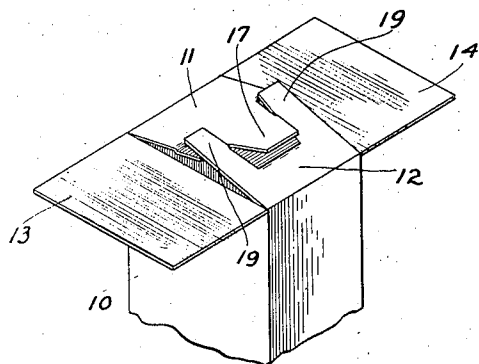


Fig. 5.

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CARTON

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My present invention relates to a new and improved carton and more particularly to a carton of the type having overlapping end flaps which are adapted to be closed and glued by a suitable machine.

One of the objects of my invention is to provide an improved form and arrangement of overlapping end flaps for a carton which can be conveniently and effectively glued together to seal the package.

A further object of my invention is to provide a novel arrangement and form of flaps which will interlock in a predetermined manner so that they will be self supporting and thus render it possible to effect a uniform gluing of the flaps when the carton is closed and sealed.

Another object of my invention is to provide a novel arrangement of interlocking flaps for collapsible cartons which when folded into their end closing positions will function to maintain the end of the carton rigid and of rectangular outline.

Other objects and advantages of my invention will be in part evident and in part pointed out in the following description taken in connection with the accompanying drawing wherein I have shown by way of illustration and not of limitation a preferred embodiment of my invention.

In the accompanying drawing wherein like numerals refer to like parts throughout the several views;

Figure 1 is a partial perspective view showing one form of my invention with the flaps extended,

Figure 2 is a view similar to Figure 1 showing the two inner flaps folded into their carton closing position,

Figure 3 is a view similar to Figure 1 showing the carton completely closed,

Figure 4 is a view similar to Figure 1 showing a modified form of my invention, and

Figure 5 is a view similar to Figure 4 showing the inner flaps partially closed.

In packing granular materials in sealed cartons of the type contemplated by my invention it is customary to seal the bottom before the carton is passed through the filling

machine. The carton is then passed through the filling machine with the upper flaps disposed as illustrated in Figure 1 of the drawing. As the carton leaves the filling machine a suitable folding mechanism will engage the inner flaps and fold them over into the position illustrated in Figure 2. The carton will then continue on to a point where the outer surfaces of the inner flaps and the inner surfaces of the outer flaps will be engaged by a suitable glue applying roller. It is with this last described operation and a final operation wherein the outer flaps are folded over and the carton is finally sealed that my present invention is concerned.

In order that the glue be properly distributed over the inner flaps by the glue applying roller and that the inner flaps be firmly glued in the sealing operation, it will be apparent that some means should be provided for supporting or holding the inner flaps against the glue applying roller and against the outer flaps during the sealing operation. In accordance with my invention, I provide a novel arrangement of interlocking projections upon the meeting ends of the inner flaps which in cooperation with each other and the side walls of the carton will form what may be termed a truss like arrangement of the inner flaps. This trussing of the inner flaps will hold them up or in other words prevent them from being folded down into the carton to a point where the glue applying roller and the outer flap will not contact uniformly therewith.

In the drawing I have illustrated a rectangular shaped carton having a body portion upon which there is provided inner flaps 11 and 12 and outer flaps 13 and 14.

The outer flaps 13 and 14 are shown as having a size and shape corresponding substantially to the end of the carton and are adapted to be folded and glued in superimposed relation over the inner flaps 11 and 12.

In order to provide for the above referred to trussing of the inner flaps 11 and 12 so that they will not fold down into the carton when pressure is exerted thereupon, as when gluing the outer flaps 13 and 14 in place,

I provide upon the flap 11 a centrally disposed projecting portion 15 and upon the flap 12 a pair of spaced projections 16 between which the projection 15 may lie when the two flaps are folded together. In practice, the dimensions of the flaps 11 and 12 from the carton wall to the base of the projections 15 and 16 is slightly greater than half the distance across the carton. With this arrangement it will be seen that when the flaps 11 and 12 are folded together with the projections 15 and 16 interlocking, the total dimension of the two flaps will be greater than the width of the carton and consequently the flaps will be stopped before they have reached a plane corresponding to the end of the carton and will form what I have termed a truss over which the outer flaps may be folded and glued. In addition to the above function, it should be pointed out that the particular arrangement and number of projections contemplated upon the flaps 11 and 12 will also insure a perfect alignment of these two flaps which will form and hold the end of the carton perfectly square during the gluing operation.

During the final sealing operation where the outer flaps are folded over the inner flaps, as illustrated in Figure 3, the side walls of the carton 10 will be unsupported, and since the granular material contained therein will take no definite shape, it will be appreciated that by providing tongues upon the inner flaps 11 and 12 as described, I have produced an arrangement which will bring these inner flaps into proper alignment and form a perfect rectangular outline at the end of the carton.

In the modified form of my invention illustrated in Figures 4 and 5, I show the inner flaps 11 and 12 as provided with a plurality of projecting portions of relatively different lengths which are so disposed that the shorter projections on one of the flaps will coincide with the longer projections on the other flap in such a manner that a substantially greater bearing surface will be produced at the point where the inner flaps meet and consequently form a relatively stronger truss like structure. In the particular embodiment referred to the inner flap 11 is shown as having a centrally extending projection 17 and relatively shorter projections 18 on each side thereof, and the inner flap 12 is shown as having two side projections 19 with a relatively shorter projection 20 therebetween. The length of the flaps 11 and 12 in this instance is similar to that disclosed in the earlier described embodiment, in that the length of these flaps from the sides of the carton to the base of the projections 17 to 20 just described is slightly greater than one half the distance across the carton. With this arrangement it will be understood that as the projections 17 and 19

are brought into overlapping and interlocking engagement, as illustrated in Figure 5, the relatively shorter projections 18 and 20 will be flexed out of line with the plane of their respective flaps and thus produce what might be termed additional bearing surfaces at the meeting points of the flaps which will greatly strengthen the truss so formed.

In practice with cartons of relatively thin material it is believed that the various projections provided upon the flaps 11 and 12 will flex sufficiently to provide a relatively smooth surface for the gluing operations, but should the cartons be made of a relatively stiff material it may be found necessary to slightly emboss the flaps at points corresponding to the position of the overlapping projections, as illustrated in Figure 5.

While I have, for the sake of clearness and in order to disclose my invention so that the same can be readily understood, described and illustrated specific devices and arrangements, I desire to have it understood that this invention is not limited to the specific means disclosed but may be embodied in other ways that will suggest themselves, in view of this broad disclosure, to persons skilled in the art. It is believed that this invention is broadly new and it is desired to claim it as such so that all such changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a carton of the type having front, back and side walls glued to form a rectangular container, the combination of a pair of oppositely disposed flaps corresponding in shape and size to the end of the carton, and a pair of interlocking inner flaps having a length greater than half the distance across the carton, each of said inner flaps having three projecting and overhanging portions which interlock in both a vertical and a horizontal plane.

2. In a carton of the type having front, back and side walls glued to form a rectangular container, the combination of a pair of oppositely disposed outer flaps corresponding in size to the end of the carton, a pair of inner flaps having a length greater than half the distance across the carton, one of said inner flaps having a central projecting portion and the other of said inner flaps having two spaced projecting portions between which said central portion may lie so that when closed the projecting portions of the inner flaps will interlock to form a truss like support for the outer flaps during the gluing operation, and other and shorter projecting portions on said flaps for reinforcing the truss like support formed by said first projecting portions.

3. An end closure for a rectangular carton

comprising, the combination of a pair of inner flaps having a total length greater than the width of the carton, a pair of outer flaps superimposed upon each other and glued to said inner flaps, and three projecting portions upon each of said inner flaps which interlock to align the flaps centrally with each other and hold them to form a truss, said truss formed by the inner flaps being adapted to withstand the pressure applied during the flap gluing operation.

4. In a carton for packing granular materials the combination of a pair of outer flaps adapted to be glued in superimposed relation in closing the carton, and a pair of inner flaps each having no less than three projecting portions at their meeting edges, said projecting portions being so disposed that they will interlock as the two flaps are folded together and of such dimensions that they will hold the inner flaps in substantially the same plane during the application of pressure as when gluing the outer flaps thereto.

LOUIS L. EDMUNDS.