

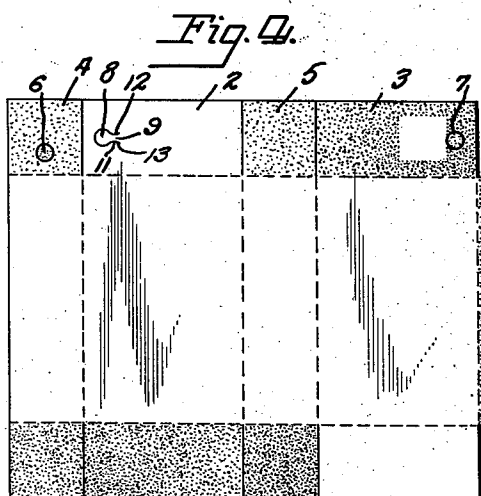
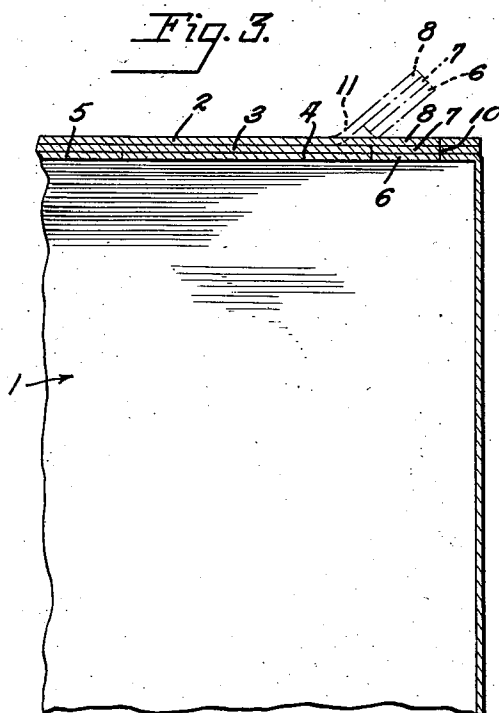
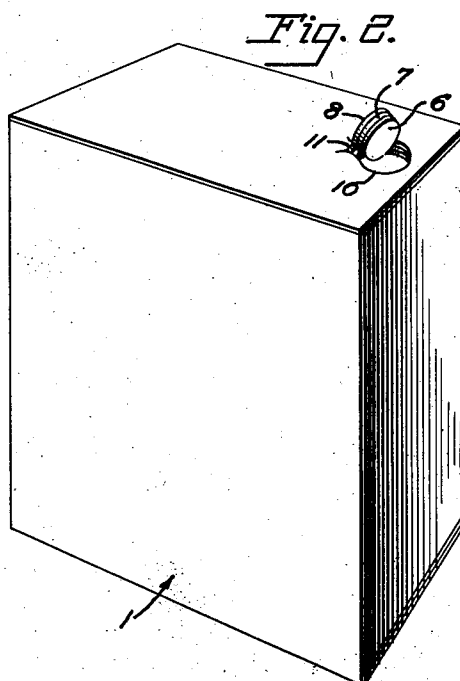
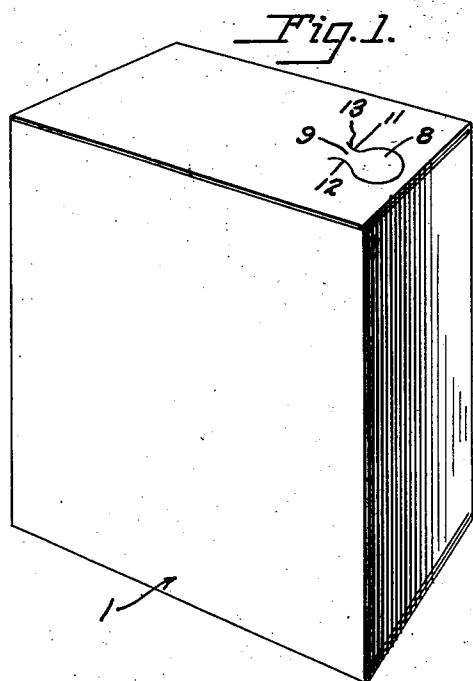
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FOLDED CARTON WITH POURING APERTURE

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FOLDED CARTON WITH POURING
APERTURE

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1 Claim. (Cl. 229-7)

This invention relates to paper or cardboard folding cartons or boxes of that type employed in packaging powdered or small granular material, and provided with a small pouring hole defined by a weakened line in the wall of the carton, and which the consumer opens by knocking out the integral plug or tongue which covers the hole.

It is desirable for the consumer to be able to close the hole each time after pouring some of the contents from the box, to keep the unused portion of said contents from deterioration. When the wall of the box and the closure are of single thickness, however, it is difficult to replace the closure in the hole, for in attempting to press the closure into the hole, the sheet stock of which the carton is made being somewhat flexible, bends, distorting the shape of the closure and of the rim of the hole, so that the closure will not fit into the hole.

To avoid this difficulty, it has lately been proposed to put the pouring hole in the end of the carton, which is of plural ply thickness, generally three plies, formed of flaps from the front, back and lateral faces of the carton, folded in lapped relation and pasted together. The hinged closure punched out of this relatively thick end portion of the carton, has a thickness of three laminations and is amply stiff to resist any deformation when pressed into the hole, this being true also of the rim of the hole, so that no trouble is encountered in replacing the closure into the hole.

However, in such a construction, the hinge portion of the closure is also three layers thick, which fact reduces its flexibility and causes it to break off after one or two flexions.

One of the objects of the present invention is to provide a carton or box of the type described, in which the rim of the pouring hole and the plug portion of the hinged closure are of plural ply thickness, while the hinge portion of the closure is of single ply thickness in the interest of maximum flexibility.

Another object of the invention is to provide a carton blank in which two of the three end flaps which will lap in the folded carton are provided with lines of weakness of complete encompassing form, defining areas to be knocked out, and the third or outmost flap having an incomplete encompassing line of weakness defining a partial knockout, the discontinuous portion of said encompassing line forming the integral connecting hinge of the closure, said lines of weakness registering when the carton is folded, then said flaps being adhesively united so that when the closure is knocked or punched out, the several knockouts are united into a plug of plural ply thickness, the

rim of the hole also being of the thickness of several plies, while the hinge integrally connecting the plug to the outmost lamination of the end wall of the carton is of single thickness.

Still another object of the invention is to provide in a folded carton, a pouring hole and hinged closure as described, the outmost flap being formed with weakened lines extending outward from the ends of the discontinuous portion of the line of weakness of said outmost flap, defining a long integral hinge, said hinge being characterized by the absence of adhesive between it and the next underlying flap, whereby it swings on an axis remote from the closure, thereby requiring to be flexed through only a relatively small angle in opening the hole.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawing throughout the several figures of which the same characters of reference have been employed to designate identical parts:

Figure 1 is a perspective view of a carton embodying the principles of the present invention, showing the closure in closed position;

Figure 2 is a similar view showing the closure in open position;

Figure 3 is a longitudinal vertical section showing the closure open; and

Figure 4 is a plan view of a blank which folds into the carton illustrated in the previously described figures.

Referring now in detail to the several figures, the numeral 1 represents the carton as a whole, which in the illustrated embodiment of the invention is rectangular in form, the top end of which being formed by folding inward the flaps 2 and 3 from the opposite broad faces of the carton, and the flaps 4 and 5 from the opposite narrow sides thereof, the flaps being so interleaved that the flaps 4 and 5 are folded first, with the flaps 2 and 3 in superposed relation, the flap 2 being on top. Inasmuch as the flaps 4 and 5 are relatively short, they do not overlap, but lie in the same plane, so that the top end of the box is of three ply thickness. It is obvious that the invention could equally well apply to a box construction in which the wall perforated by the pouring hole is of two ply thickness of any larger number of plies.

Figure 4 shows that the two underlying flaps 3 and 4 are formed with circular areas 6 and 7, defined by encompassing lines of weakness and registering when the carton is in folded position. The outmost flap 2, also is provided with an area

8 adapted to register with the areas 6 and 7 of the respective flaps 4 and 3, in the folded carton. The area 8 is formed by a line of weakness which only partially encompasses said area, being discontinuous throughout that part which is indicated by the reference character 9. This discontinuous part forms an integral hinge for the closure. The infolded flaps are suitably pasted together, so that the top of the carton becomes a laminated unit. The pasting together of the several turned flaps also adhesively unites the areas 6, 7, and 8, which form a plug or closure of three ply thickness, as shown in Figure 3. This plug may be pried or knocked out of the laminated top wall of the carton so as to form the pouring hole 10, the rim of which is also of three ply thickness. Said plug or closure is integrally connected to the top ply of the carton, by the hinge 11 having the thickness of a single ply. Preferably, the flap 2 is provided with the weakened lines 12 and 13, which substantially parallel each other and extend outwardly from the ends of the discontinuous portion of the line of weakness which defines the area 8. Said lines define the length of the hinge 11. It is preferred that the flap which immediately underlies the outmost flap 2, for example, the flap 3 in Figure 4, shall have no adhesive on that part which is contacted by the underneath surface of the hinge 11. This permits the hinge 11 to swing on an axis which is remote from the hole 10, said axis being a line joining the outer ends of the weakened lines 12 and 13. This permits the pouring hole 10 to be fully uncovered by the closure plug, by a relatively small angular flexion of the hinge 11, preventing its breaking, and perpetuating its intactness through the entire useful period of the life of the carton.

It will be understood that heretofore cartons have been made having the upper ends of multiply thickness, with an integral knockout closure of a pouring opening formed in said end. However, in such constructions as are known, the

hinge connection is of the same thickness as that of the end of the box or the thickness of the plug portion of the closure, to which attention has been called in the objective paragraphs of the specification, lacking flexibility and breaking upon being bent once or twice.

It will be understood to those skilled in the art, that various changes may be made in the specific details of construction and arrangement of parts, without deviating from the principles of the invention, and that the specific structure as shown and described is to be regarded by way of example and not as restricting the scope of the invention which is defined in the appended claim.

What I claim as my invention is:

Folding carton having an end thereof composed of a plurality of inwardly turned lapping flaps pasted one against another forming a unitary laminated structure, the underlying of said lapping flaps being formed with complete registering encompassing lines of weakness, and the outmost lapping flap having an incompletely encompassing line of weakness registering with the lines of weakness of the underlying flaps, the encompassed and partially encompassed adhesively united portions of said flaps constituting a closure plug adapted to be knocked out by the consumer to form a pouring hole with associated closure, said closure being of plural ply thickness, the discontinuous portion between the ends of the line of weakness in the outmost flap defining an integral hinge for said closure, of single ply thickness, said outmost flap being formed with spaced weakened lines extending outward from the ends of the incomplete line of weakness of said outmost flap, defining a long integral hinge, said hinge being characterized by the absence of adhesive between it and the immediately underlying flap, whereby it swings on an axis remote from said hole, thereby requiring to be flexed through only a relatively small angle in opening said hole.

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