

Jan. 14, 1958

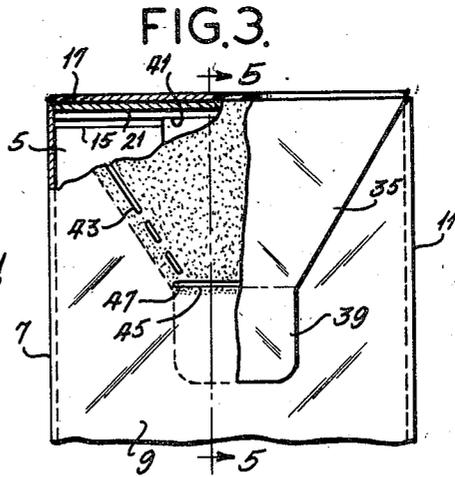
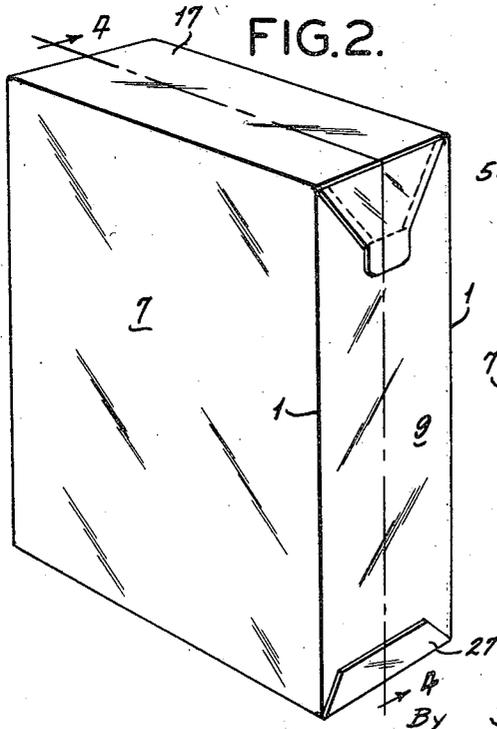
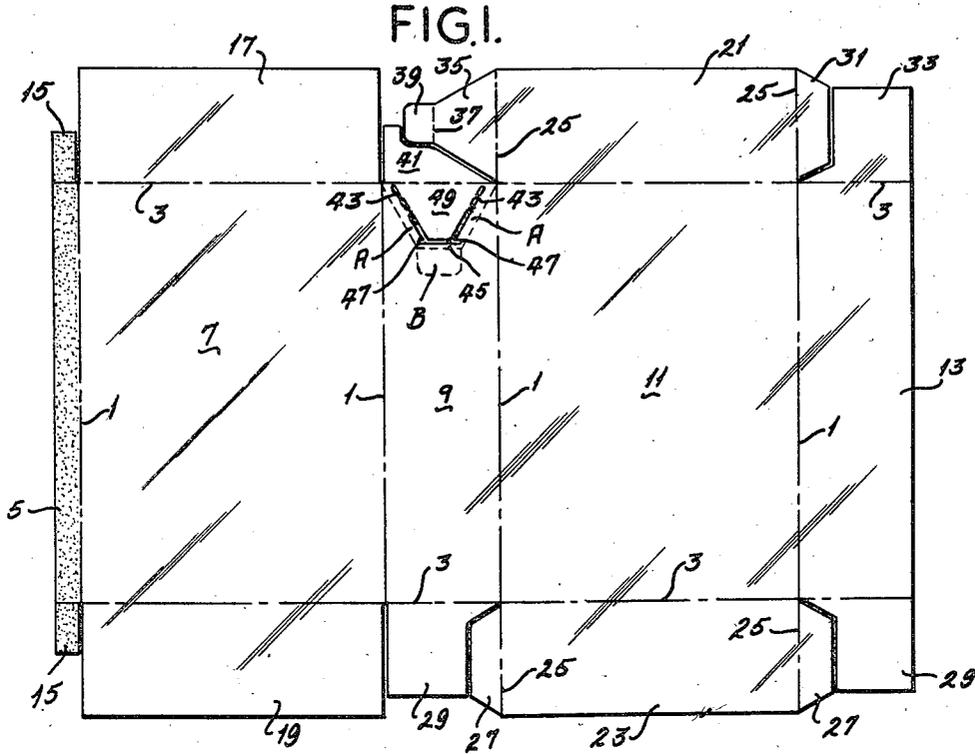
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2,819,831

CONTAINERS WITH POURING OUTLETS

Filed May 3, 1954

2 Sheets-Sheet 1



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FIG. 4.

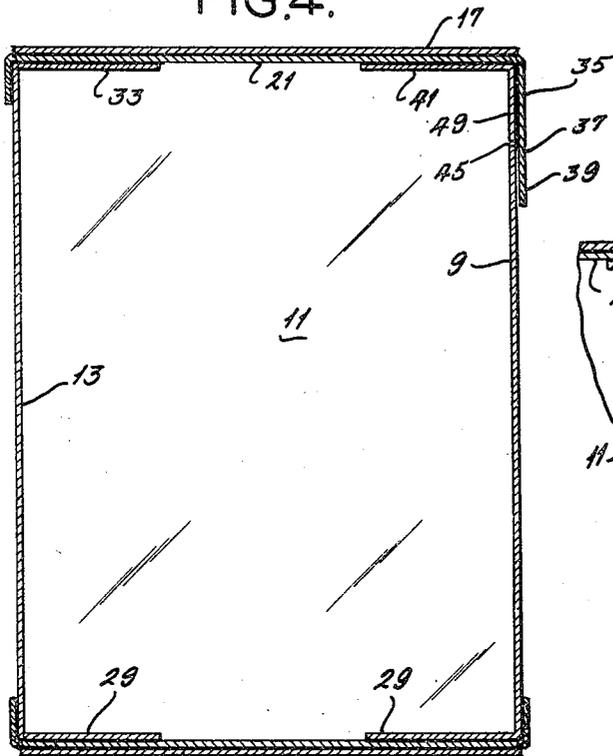


FIG. 5.

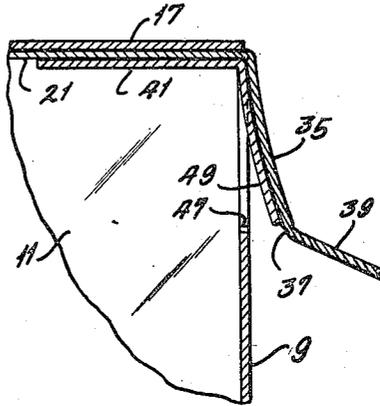


FIG. 6.

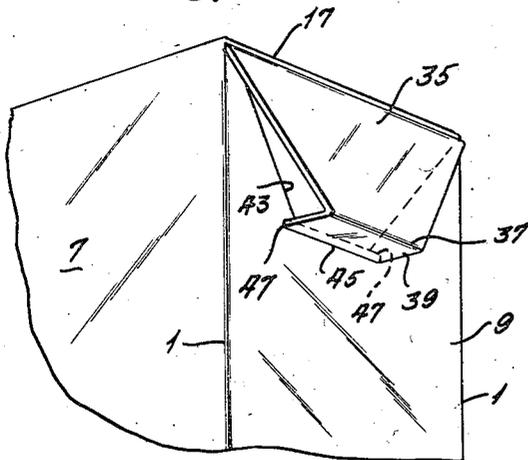
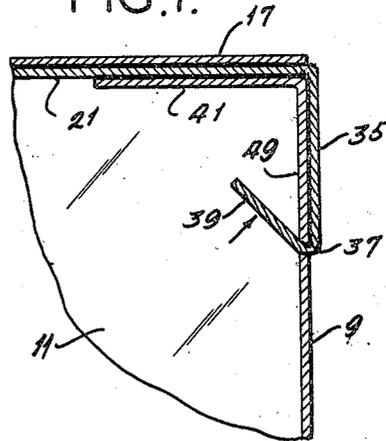


FIG. 7.



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CONTAINERS WITH POURING OUTLETS

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2 Claims. (Cl. 229—17)

This invention relates to containers, and more particularly to sift-proof boxes of the type that have pouring outlets.

In packaging commodities which are consumed intermittently, such as cereals and detergents, it is customary to use a narrow, rectangular carton which has a punch-out portion delineated (as by lines of perforations) at the top of one of the narrow end walls. In use, this portion is pushed inwardly back against the top of the box, and the adjacent top portion is then peeled back to form an opening through which to pour the contents. Frequently, the carton will be made sift-proof by providing Van Buren ears. Although this type of box is simple to make, it has some objections.

Once opened, the carton cannot be conveniently reclosed, at least to an extent such as to prevent spilling should the carton inadvertently be tipped or inverted. For the same reason, the contents thereof are somewhat susceptible to contamination or deterioration through exposure. Also, the perforations that delineate the pouring outlet must be relatively large in order to facilitate the punching-out operation, and hence may constitute a source of leakage (when the contents are of a finely granulated character) prior to use by the customer.

Accordingly, it is an object of the invention to provide an improved sift-proof carton of the character described, wherein the pouring outlet is positively sealed during initial transit and storage of the carton, and which once opened by the consumer, may be reclosed to prevent accidental spilling of the contents. Among the more specific objects of the invention may be noted the provision of a box of the character described which is made from a one-piece blank; the provision of a carton wherein the closure member includes a locking element which is readily releasable by the user but which resists disengagement when the contents are shifted within the carton; the provision of a carton of this type wherein the closure member is initially completely sealed about the pouring outlet; and the provision of a carton such as described which can be set up, filled and closed on existing machinery.

To these ends, we provide a carton having top, bottom, side and end walls, the top and bottom being formed by overlying or underlying members which have Van Buren ears. A pouring outlet of substantial size is delineated in one of the narrow end walls, as by lines of perforations and slits extending from the top and inwardly of the edges thereof in converging relationship. A slit which defines the bottom of the pouring outlet intersects and extends beyond the converging lines to provide for reclosure. The adjacent Van Buren ear is extended to entirely overlie the pouring outlet, and marginal portions of the ear are adhered to the end wall in surrounding relationship with the outlet, so that the perforations and slits are protected by an adhesive applied to the extended Van Buren ear. The ear is also formed with a foldable tab, which initially lies against

being adhered, the tab may be readily grasped to pull the ear outwardly; and that portion of the end wall which is bounded by the perforations and slits is also adhered to the ear, so that it becomes detached as the flap is pulled outwardly, thereby to open the carton. When the carton is not in use, the hinged tab at the free end of the ear is bent and inserted through the slit that defines the bottom of the pouring outlet.

It may be noted that as the contents are shifted within the box, this tends to bend the tab, with the result that the ear is locked in its closed position. Also, that portion of the end wall which is adhered to the ear returns to an abutting coplanar relationship with the remainder of the end wall, thus providing a better seal. Indeed, it has been found that with this arrangement, the contents will receive additional protection from high relative humidity.

Other features of the invention will be in part apparent from and in part pointed out in the following detail description taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of a carton blank embodying the invention;

Fig. 2 is an oblique view of a carton formed from the blank of Fig. 1, the carton being in its sealed condition as delivered to the consumer;

Fig. 3 is a detail end view showing the openable section of the carton, parts being broken away;

Fig. 4 is a cross section taken generally on the line 4—4 of Fig. 3;

Fig. 5 is a detail view similar to that of Fig. 4, but showing how the pouring outlet is initially opened;

Fig. 6 is an oblique detail view showing how the pouring outlet is reclosed; and

Fig. 7 is a view similar to that of Fig. 5, showing the outlet reclosed.

Referring now to the drawings, the carton embodying our invention is made from a one-piece blank of semi-flexible paperboard. As shown in Fig. 1, the blank is scored along transverse lines 1 and longitudinal lines 3 to define a plurality of integrally-connected panels, including a glue flap 5, a relatively wide side wall 7, a relatively narrow end wall 9, a second side wall 11 and a second end wall 13. A tube of narrow rectangular cross section is formed by adhering the flap 5 at one end of the blank to the end panel 13 at the other end. Top and bottom closures are then formed by certain flap-like members, which lie outwardly of the longitudinal scores 3.

The flap 5 may have projecting tongues 15 (which improve the sift-proof quality of the carton), the slits that define these tongues preferably terminating short of score line 3. Rectangular members 17 and 19 project from the side panel 7, these members extending the full width of the side panel and projecting a distance corresponding to the width of the end panels. In the finished carton, the closure members 17 and 19, respectively, form the outer top and bottom surfaces.

Somewhat similar top and bottom closure members 21 and 23 extend from the other side panel 11, but these members carry certain elements which are known in the art as Van Buren ears. The ears project beyond transverse scores 25 (which are continuations of the fold lines 1), but are shaped so as to accommodate end flaps which are hinged at 3 to the end walls 9 and 13. For example, the bottom closure 23 has short tapering ears 27, and the adjacent end flaps 29 are of substantial size.

Heretofore, this type of blank would have had identical ears at the top, but the present invention contemplates a different arrangement. The ear 31 and flap 33 over the end wall 13 may be similar to those at the bottom, but the ear 35 over the other end wall 9 is considerably longer.

This ear 35 tapers, however, so as to accommodate a flap 41, which is hinged to the end wall 9, and the ear 35 is scored at 37 (near its free end) to define a tab-like projection 39.

It may be noted also that the previous practice has been one of forming a relatively small punch-out section by a semicircular line of perforations extending down from the fold 3 at the top of the end panel 9. This punch-out section was of relatively small size, being but slightly larger than the ears shown at 27 and 35. Such a relatively small punch-out opening was not adequate in itself as a pouring outlet, hence it was general practice to also tear back a portion of the top of the box.

With the present invention, a substantially larger pouring outlet is defined by slits or perforated tear lines 43, which begin at the top fold 3 of the end panel 9 but inwardly from the edges 1 thereof. The tear lines 43 converge to an intersecting slit or tear line 45, and this slit preferably extends somewhat beyond the tear lines 43, as indicated at 47. The portion 49 of the end wall which is bounded by 43 and 45 is somewhat smaller in size than the adjacent ear 35, the area of this ear being indicated at A and B. When the ear 35 is then brought into overlying relationship with the end wall, the perforations are covered by the surrounding portion at A and the portion B is covered by the tab 39. The part A of the end wall 9 is adapted to make an adhesive connection with the ear 35, whereas the portion B preferably does not have any adhesive connection with the tab.

A blank as above described may be readily made on conventional die cutting and scoring apparatus, and it is also adapted to be set up, filled and closed with existing machinery. The usual practice is to supply the blanks as flattened tubes, the flap 5 being adhered to the end wall 13. As the blanks are fed through the filling and closing machine, they are first opened and the bottom closures 19 and 23 are spread so that they may pass over glue applicators, which apply adhesive to the under surface thereof. The end flaps 15 and 29 are swung inwardly; the closure member 23 is swung over so that it becomes adhered at the end flaps 29; and the other member 19 is then swung in and adhered to the member 23. Subsequently, the Van Buren ears 27 at the bottom are pressed against and adhered to the end walls 9 and 13.

The box is then filled and a similar process is followed in closing the top. The members 17 and 21 are first spread outwardly and their underneath sides coated with adhesive. The end flaps 15, 41 and 33 are swung inwardly; the top closure member 21 is swung over and adhered to the end flaps 33 and 41; and the other top closure 17 is swung over and adhered to the member 21. Finally, the ears 31 and 35 are swung down and adhered against the respective side walls 13 and 9.

Normally, the entire ear 35 and tab 39 would be coated with adhesive, but in the finished carton, it is desired that the tab 39 be free of the end wall 9. This may be conveniently achieved by overprinting the area B to form a slick surface which will not take adhesive. On the other hand, the area A and the portion 49 should have a surface which will make a firm adhesive connection.

It will be apparent that the pouring outlet is completely surrounded and adhesively sealed by the part 35. This feature, in conjunction with the ears and tongues 15 above mentioned, provides a sift-proof carton.

In use, the free tab 39 is grasped to pull back the ear portion 35, and as illustrated in Fig. 5, the adhered end wall portion 49 is also torn free to form an opening of substantial size through which the contents may be poured. When the carton is not in use, the tab 39 is bent along its score 37 and is inserted through the end wall 9 (as shown in Fig. 6), its edges having a frictional gripping cooperation with the extended slots 47. In the fully closed position, as indicated in Fig. 7, the tab 39 projects into the

carton, and the separable portion 49 of the end wall 9 is returned into closing coplanar relationship with other portions of the end wall 9.

It has been found that this closure effectively protects the contents, even in a relatively damp atmosphere. Also, the tab 39 functions somewhat as a valve, being folded back as indicated by the arrow in Fig. 7 to lock the ear 35 when the contents are shifted within the carton. Perhaps the principal advantage of this arrangement, however, is that the reclosable feature prevents spilling of the contents if the carton is accidentally knocked over or inverted.

From the foregoing description, it is apparent that those skilled in the art will understand the structure, function and mode of operation of the invention herein disclosed, and appreciate the advantages thereof. Although one embodiment has been disclosed in detail, it is to be understood that the invention is not limited thereto, but the drawings and description thereof are to be understood as being merely illustrative. For example, the flaps 19 and 23 at the bottom and 17 and 21 at the top may be reversed; and in that event, it is not essential to coat members 17 and 19 with adhesive in closing the box. The arrangement illustrated has an advantage in that the flap 41 becomes glued to the top and cannot block the pouring outlet. The other arrangement is thought to have an advantage in sift-proof action. It is realized that many modifications and variations will present themselves to those skilled in the art without departing from the spirit of this invention or the scope thereof as set forth in the appended claims.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A carton formed from a blank of semi-flexible sheet material comprising side and end walls connected to one another, a top-closure flap integrally hinged to one of said side walls, a pouring outlet delineated in one of said end walls near the top thereof, said pouring outlet being defined by weakened lines converging toward a lower edge that extends parallel with the top of the carton, said lower edge being defined by a slot which has its ends extending laterally beyond the ends of the pouring outlet-defining weakened lines, an integral ear projecting laterally from one end of the top-closure flap in overlying relationship with said pouring outlet and having a greater area than said pouring outlet, and a tab hinged to said ear at the free end thereof along a score co-extensive with the slot defining the lower edge of the pouring outlet, said tab being substantially rectangular in shape and having a width which is greater than the distance between the lower ends of the weakened lines and substantially the length of said slot, said ear being adhesively secured to that portion of the end wall defined by the weakened lines and slot and to portions beyond said weakened lines and slot to thereby seal the cuts defining the pouring outlet and to remove that portion of the side wall defined by said weakened lines and slot when the tab is pulled.

2. A carton formed from a blank of semi-flexible sheet material comprising side and end walls connected to one another, a top-closure flap integrally hinged to one of said side walls, a pouring outlet delineated in one of said end walls near the top thereof, said pouring outlet being defined by weakened lines in said end wall and having a lower edge, an integral ear projecting laterally from one end of the top closure flap in overlying relationship with said pouring outlet and having a greater area than said pouring outlet, and a tab hinged to said ear at the free end thereof along a score generally coextensive with the lower edge of said pouring outlet, said ear being initially adhered to that portion of the end wall defined by the weakened lines and to portions beyond said weakened lines to thereby seal the cuts defining the pouring outlet and to remove that portion of the side wall

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defined by said weakened lines when the tab is pulled,
the tab initially being free of said end wall.

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