Nov. 15, 1949 H. C. PARKER 2,488,323

DISPENSING CARTON

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Fig. 1.

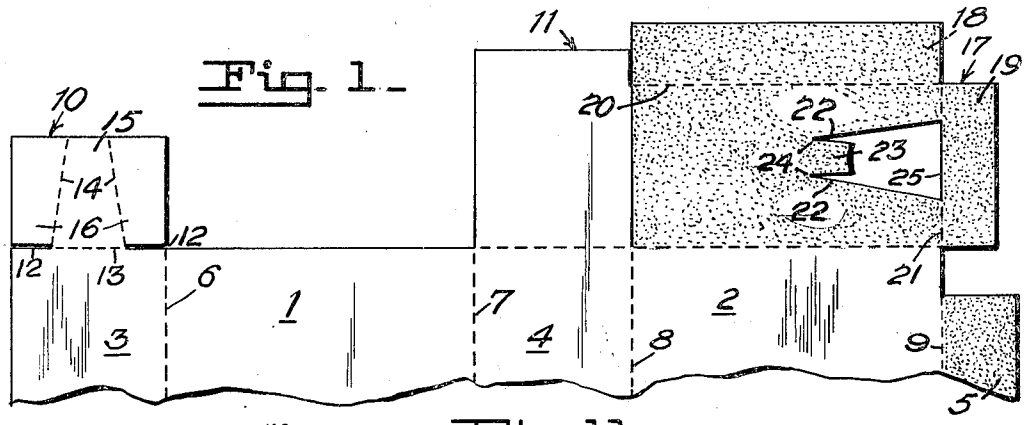


Fig. 1a.

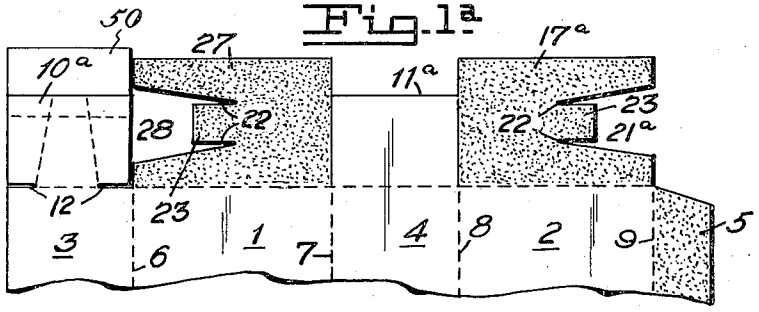


Fig. 2.

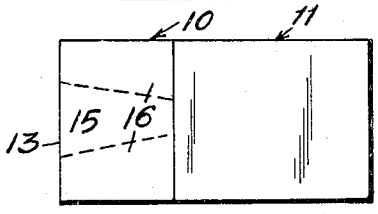
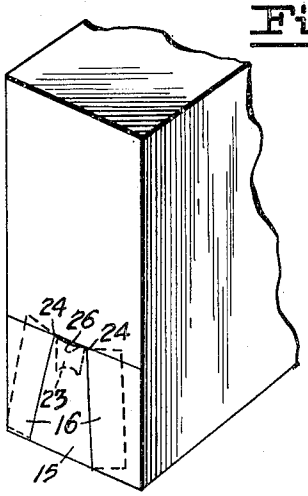


Fig. 4.



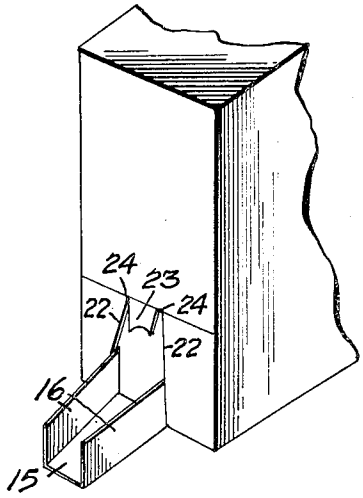


Fig. 3.

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Fig. 5.

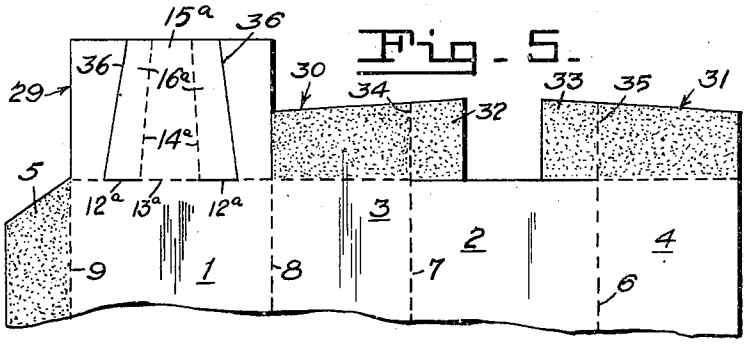


Fig. 6.

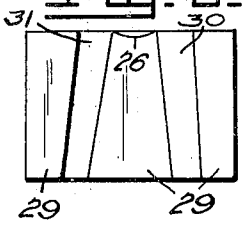


Fig. 7.

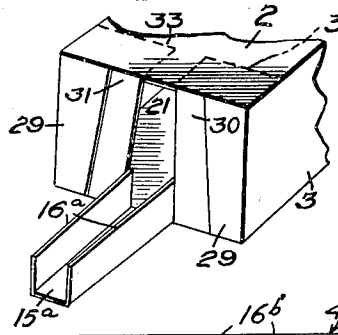


Fig. 8.

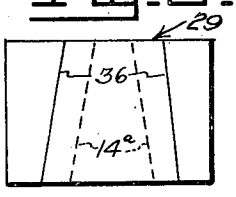


Fig. 9.

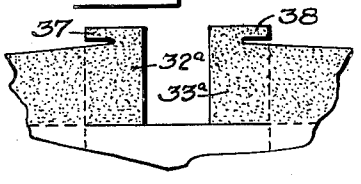


Fig. 11.

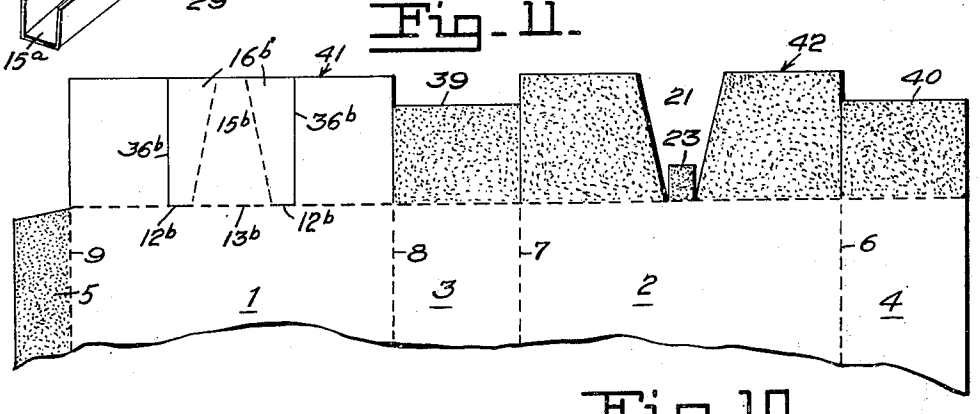


Fig. 12.

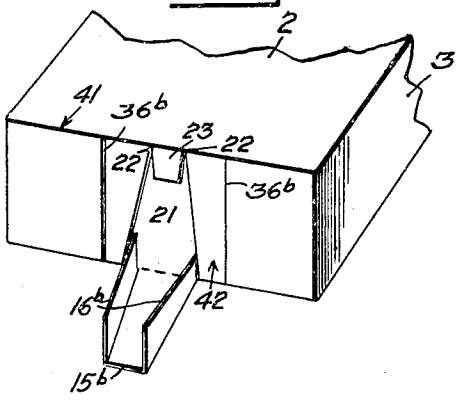
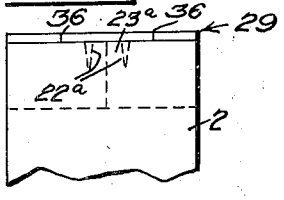


Fig. 10.



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2,488,323

DISPENSING CARTON

Henry C. Parker, Washington, D. C.

Application April 18, 1946, Serial No. 663,073

7 Claims. (Cl. 229—17)

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This invention relates to dispensing cartons; and it comprises a carton having a top formed of flaps sealed one above the other, an outer flap comprising a pouring spout blank defined by cuts at the top and sides and at the base by a hinge coinciding with and forming part of the fold of said flap, said blank being divided by scoring lines into a central section adapted to form the bottom of a pouring spout and side sections adapted to form side walls of said spout, said base being cut away at either side of said central section so that said side walls can be bent at right angles thereto, a dispensing opening directly beneath and having substantially the shape of said central section so that when said side walls are bent inwardly they can be received into said opening with the central section flush with the carton top, said carton top being also advantageously provided with means for preventing said dispensing spout from being pushed all the way into said dispensing opening and for holding said side walls in binding engagement when they are pushed into said opening, as well as with means for raising said blank from the carton top about the hinge as a base; all as more fully hereinafter set forth and as claimed.

A large number of dispensing tops for cartons have been developed or suggested in the art. In many of these the dispensing spouts or troughs are formed by bending a section of the top. In most of these devices the hinges of the troughs are formed from a flat portion of the top and, while some are provided with means for preventing the edges of the troughs from slipping out of the dispensing opening usually no provision is made for holding the troughs in dispensing position or for frictionally retaining the troughs when folded into closed position.

I have found that a highly satisfactory dispensing spout or trough can be formed by suitably bending up a pouring spout blank which constitutes a flap or section thereof usually having a substantially rectangular outline and using the fold of said flap as a hinge, cuts being provided along said fold at either side of the hinge and along the lateral edges and top of the blank, the blank being separated by scoring lines into a central section adapted to form the bottom of the spout and side sections adapted to form the side walls of said spout, the bases of the side sections being defined by cuts so that said sections can be folded at right angles to said central section. The scoring lines can be slanted, if desired, to produce a spout which tapers towards its outer end. The flap or flaps beneath that formed into

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a spout are cut away to make a dispensing opening, this opening having advantageously the general shape of the bottom of the spout so that, when the sides of the spout are in upright position these sides can be received into the dispensing opening and the spout folded flush with the top of the box. When it is desired to use the spout for dispensing purposes one of its side walls can be bent outwardly to a slight extent so that its end bears against the box top at one side of the dispensing opening. This holds the spout perpendicular to the box top and is a convenient way of preventing the hinge from automatically tending to fold it into closed position. Since the hinges between the sides and bottom of the spout (those made at the scoring lines) tend to fold the spout sides outwardly, there is considerable friction between these sides and the sides of the dispensing opening when the spout sides are inserted in the opening. For this reason the spout will generally stay in any position it is placed even during dispensing.

If the dispensing opening corresponds exactly in shape to the bottom of the spout, the forward ends of the side walls of the spout should be cut off slightly at their tips so that they will readily enter the opening. It is also true that in this case the spout can be pushed all the way into the opening into a position from which it is difficult to remove. But it is relatively simple to prevent the spout from being pushed entirely into the dispensing opening. This can be accomplished by leaving a central tongue at the top of the opening which engages the bottom of the spout as it is pushed into the opening. It is advantageous to provide V-shaped notches at either side of the tongue to receive the side walls of the spout. These notches may be tapered at the top so that when the side walls of the spout are forced therein a binding action occurs which holds the spout firmly in closed position. The forward end of the bottom of the spout extends over the tongue and the spout can be readily raised into pouring position by thrusting the finger nail between the tongue and the spout bottom and then lifting. It is thus seen that my dispensing spout can be closed firmly when not needed, that it can be easily raised into pouring position and that it can be held automatically in the latter position.

My invention can be explained more specifically by reference to the accompanying drawing which shows several embodiments of my dispensing box top.

In this showing,

Fig. 1 is an expanded view of the upper part of

a blank which when folded and pasted forms my box top,

Fig. 1*a* is a similar view of a slightly modified blank,

Fig. 2 is a plan view of the top of the box before being opened,

Fig. 3 is a perspective view of the box top after opening with the spout in pouring position,

Fig. 4 is a similar view with the spout in closed position,

Fig. 5 is an expanded view of the upper part of another blank which when folded and pasted forms a second modification of my box top,

Fig. 6 is a plan view of the box top after being opened but with the spout in closed position,

Fig. 7 is a perspective view of the box after being opened with the pouring spout in operating position,

Fig. 8 is a plan view of the box top before being opened,

Fig. 9 is a partial view of a modified blank,

Fig. 10 is a rear side view of a box top which embodies the modification of Fig. 9,

Fig. 11 is a partial view of a blank for constructing a further modified form of my box top, while

Fig. 12 is a perspective view of a box top made from the blank of Fig. 11 with the spout in pouring position.

Like parts are designated in the various figures by like reference numerals. Fig. 1 shows a blank consisting of the conventional front and back walls 1 and 2, respectively, and end walls 3 and 4. At one end of the blank the usual pasting strip 5 is provided. These various parts are defined by the usual scoring lines, 6, 7, 8 and 9, these lines being shown dotted. The top of the box corresponding to the blank of Fig. 1 has two end flaps shown generally at 10 and 11. The length of flap 10 is made equal to the desired length of the pouring spout. If the latter is to be half the length of the box side walls, the flaps 10 and 11 would be of equal length, as shown in Fig. 1*a*, but in Fig. 1 the flap 10 is shorter than 11 as in the case of a box having a considerable length.

The end flap 11 is a conventional flap of rectangular shape but end flap 10 when raised and folded forms the pouring spout of the box. This flap is partly cut away from the end panel 3 at each side of its base as shown at 12. The line 13 between these cuts is scored and forms the hinge of the pouring spout. It will be noted that this hinge coincides with the folding edge of the box top. The flap is also provided with two longitudinal scored lines 14 which are tapered in such fashion that the spout formed from the flap is wider at the base than at its pouring end. These lines 14 divide the flap into a central portion 15 which forms the bottom of the pouring spout and side portions or wings 16 which form the side walls of the spout when these walls are bent downwardly along their scored lines.

The box top whose blank is shown in Fig. 1 may have a single side flap as shown generally at 17. This flap is provided with two pasting strips 18 and 19 which are adapted to be pasted to the side and end walls of the box at the inside, these strips being bent along the scoring lines 20 and 21. The center of the flap 17 is sufficiently large to cover the entire top of the box but is provided with a cut out which forms the pouring outlet and cooperates with the pouring spout. It will be noted that this cut out is tapered at its edges in a manner similar to the bottom of the pouring spout and that at its top it has two notches 22 and an

intermediate depending lip or tongue 23, the notches being tapered to points at their tops. The distance from the points 24 to the base 25 of the cut out corresponds to the length of the pouring spout, i. e. the length of flap 10. The function of the notches 22 is to receive the upper or pouring ends of the side walls or wings of the pouring spout, as is evident from the showings of Figs. 3 and 4. Owing to the taper of the notches a binding action is produced which holds the spout firmly in closed position, while the lip 23 prevents the spout from being pushed all the way into the cut out. The pouring end of the spout is engaged by the lip and notches and held slightly away from the surface of the box top, thus providing a convenient place to insert the finger nail when the spout is to be opened, as shown at 26 in Fig. 4.

The top of the box before it is opened is shown in Fig. 2. The two end flaps 10 and 11 are on top and fit closely at their point of engagement. The cut-out in flap 17 is beneath flap 10 but is effectively closed by the latter which is pasted to flap 17. Opening of the box is very simple. It is only necessary to thrust an ordinary table knife beneath flap 10 and above flap 17 and to pry upwardly to lift flap 10 along hinge 13. This flap is then hinged at the edge of the box along its scored line 13. The bases of the wings are free due to the cuts 12. When the flap is raised at right angles to the box top, it is then a simple matter to bend the wings downwardly towards the box top, in the manner shown in Fig. 3. These wings then fit in the pouring opening as shown. If the hinge at 13 tends to make the pouring spout close up, this can be prevented by leaving one of the wings outside the pouring opening in which position it presses against the box top and holds the spout in correct position aligned with the end of the box. But the friction of the wings against the pouring opening is usually sufficient to overcome the closing action of the hinge. The hinge at 13 is sufficiently strong to prevent the pouring spout from opening too wide. It is therefore evident that the pouring spout can be readily held in correct pouring position, i. e. at an angle of about 90° to the box top.

Closing of the pouring spout is likewise very simple. If one of the wings is outside the pouring opening, it is only necessary to press the wings together until both enter the pouring opening and then to push in the spout. The outer ends of the wings fit into the tapered notches at the top of the pouring opening and the pouring spout is seated in closed position by pressing it against the box top. The notches bind the wings in this position and the wings tend to spread out inside the box, as shown in Fig. 4 which also serves to hold the spout tightly in closed position. But it can be readily raised by inserting the finger nail in the slit 26 (Fig. 4) and lifting the spout up. Opening and closing of the spout can be performed many times before the hinge at 13 becomes too flexible to tend to close the spout. But even when this happens the spout can be used effectively since the wings pressing against the edges of the pouring opening tend to prevent the spout from changing its position and since the weight of the material passing through the spout is small. It is thus seen that the pouring spout remains fully effective until the box is empty.

In Fig. 1 the flaps which are pasted are shown stippled to indicate the paste. In sealing the box

the sealing strip 5 is first coated and the bottom is closed in conventional manner. Then after the carton is filled the flap 17 is coated with paste, the strips 18 and 19 are bent inwardly and pasted inside the box and the two flaps 10 and 11 are then pressed against the flap 17 thereby closing the box. It is also possible to fill the box through the pouring opening. In this case the strips 18 and 19 are first coated and pasted in position, the box is filled and then the top of flap 17 is coated and the flaps 10 and 11 pressed against it. It is also possible, of course, to paste the undersides of flaps 10 and 11 instead of the top of flap 17.

The modification of Fig. 1*a* is quite similar to that of Fig. 1 except that two side flaps 17*a* and 27 are employed. Both of these are provided with cut outs 21*a* and 28 of the same shape as in Fig. 1 but owing to the absence of pasting strips these cut outs are open-ended. When the box is closed these cut-outs register, forming the pouring opening. Since there is a double layer of paper there is no need of the reinforcing action provided by the pasting strips 18 and 19 of Fig. 1. In this modification special means are provided for raising the flap 10*a*, which constitutes what might be called a pouring spout blank. This opening means takes the form of a thin flexible sheet 50 of fabric or plastic, such as cellulose acetate, pasted at the top of the blank at its under surface. The end of this sheet protrudes from the end of the box when the spout blank is sealed and serves as a finger grip to raise the blank. This strip should extend most of the distance across the top of the blank and a sufficient distance beneath to prevent it from being pulled off before the blank is lifted. After the blank is lifted the strip can be removed from the blank or left on to form a flexible end to the spout. Sometimes a flexible end is advantageous. The box is sealed by first closing flap 17*a*, then 27 and finally 11*a* and 10*a* which form the top of the box as before. The outer end of the opening strip 50 is left outside and is not pasted. The pouring spout blank in this modification is raised by pulling up on the strip 50 and then the spout is formed in the same manner as that of Fig. 1. It is evident that the modification of Fig. 1*a* requires a slightly smaller area of paper board to cut out the blank.

Figs. 5 to 8 show a modified blank and box top wherein the pouring spout is at the front of the box rather than at one end. The blank is formed of the same front and end wall panels as before and is provided with the usual side pasting strip 5, as well as the scored folding lines 6, 7, 8 and 9. The box has two end flaps shown generally at 30 and 31 and a top side flap 29 which is sufficiently large to cover the entire top of the box. The side flaps are tapered and are of such width that, when pasted in position they leave a pouring opening 21 between their ends, as is evident from Fig. 7. The side flaps are provided with tabs 32 and 33 which are bent downwardly along the scored folding lines 34 and 35 and then pasted inside the box against the side wall 2; see Fig. 7. These pasting strips reinforce the flaps 30 and 31 and prevent them from bending when the spout is being closed. Fig. 8 shows the top of the box as it looks before being opened, while Fig. 6 shows the box top as it looks after the spout has been opened and then closed.

Owing to the fact that the top flap 29 of this embodiment is larger than necessary to form the pouring spout, a somewhat modified form of spout is employed. The flap is cut along the longitudinal slanting lines 36 as well as along the lines 12*a* at its base. The scored lines 14*a* are provided as in the other embodiment. When the flap portion between the lines 36, i. e. the spout blank, is swung upwardly about 13*a* as a hinge and the wings 16 are bent downwardly, the center portion 15*a* forms the bottom of the pouring spout as indicated in Fig. 7.

The spout in this embodiment is opened readily by inserting the end of a knife just beneath the top flap 15*a* between the cuts 36 and lifting upwardly. This swings the spout blank about the hinge 13*a*, after which the wings can be readily bent inwardly to form the side walls of the pouring spout. The spout is closed by compressing the side walls so that they fit inside the pouring opening 21 and then pushing the spout in flush with the box top.

In the embodiment of Figs. 5 to 8, as described, there is some danger that the spout will be pushed entirely into the pouring opening so that it is removed only with difficulty. This is prevented in the previously described embodiments by the tongue 23 and notches 22. A similar result can be achieved by slightly modifying the tabs 32 and 33 as shown in Fig. 9. In this embodiment these tabs 32*a* and 33*a* are provided with notched extensions 37 and 38 which, when passed inside the box together form a modified tongue 23*a* between notches 22*a*, as is evident from Fig. 10, which shows a rear side view of the box top of this modification. It is evident that the ends of the wings 16*a* of the spout fit into the notches when the spout is closed and that these notches and the tongue 23*a* therefore constitute means for preventing the spout from being inserted too far into the pouring opening.

In the embodiments of Figs. 5 to 10, after the strip 5 is pasted, the tabs 32 and 33 may be coated, folded over and pasted inside the box. This leaves the pouring opening 21 exposed and the box can be filled through this, after which the flaps 30 and 31 can be coated and the top flap 29 pressed on the top.

In Figs. 11 and 12 a further modification is shown in which the blank is provided with four top flaps. End flaps 39 and 40 are conventional but are advantageously of such length that their ends coincide with the cuts 36*b* in the top flap shown generally at 41, the latter covering the entire top of the box. The lower side flap 42 is provided with a cut out 21 which forms the pouring opening. This cut out at the top is provided with notches 22 and tongue 23 as in the other modifications. The top side flap 41 is cut at 36*b* and 12*b*, the cuts 36*b* being parallel in this embodiment in order to form a rectangular spout blank. This makes it somewhat easier to lift up the spout blank with a knife.

After the strip 5 is pasted, the two flaps 39 and 40 are coated and folded. Flap 42 is then pressed down to paste it. The box is then filled through the pouring opening 21 and finally the box is closed by coating the top of flap 42 and pressing flap 41 over it. This forms a strong top construction. The pouring spout is formed and closed in the same manner as in the other embodiments.

While I have disclosed what I consider to be the most advantageous modifications of my dis-

pensing carton, it is obvious, of course, that various modifications can be made in the specific structures which have been described without departing from the purview of this invention. In order to secure the advantages of this invention it is only necessary to provide on the top of a box a pouring spout blank which has a hinge which preferably coincides with the fold of one of the top flaps, said blank having scoring lines defining the bottom and side walls of the pouring spout, and a pouring opening beneath said blank having a shape corresponding to that of the bottom of the pouring spout, means being advantageously provided to prevent the pouring spout from being pushed entirely into the said pouring opening. It is evident, of course, that directions can be given on the box for the user to cut away the hinge of the pouring spout blank at either side back to the scoring lines, thus eliminating the necessity of providing the cuts 12, 12*a* or 12*b* in the various modifications. Instead of cuts serving to outline the pouring spout blank, perforations can be employed, if desired. And the cuts 12, 12*a* and 12*b* likewise can be substituted by perforations, which would, of course, be equivalent to the cuts. It is advantageous but not absolutely necessary for the pouring spout blank to have at least one of its hinge-free margins coincide with one of the top edges of the box top, so that the blank can be raised easily by thrusting the blade of the knife under the blank at this point; otherwise an opening strip, such as 50, should be provided. When this strip is used the pouring spout blank can be placed, if desired, even in the center of the carton top. And, of course, this strip, considered as a separate element, is convenient to employ in the case of all types of pouring spouts which are formed from blanks constituting sections of carton tops. The directions for opening and folding the pouring spout can be placed on this opening strip. In the case of my dispensing box these directions can be made very simple, merely stating, for example. "To open box, pull on this tab to lift flap, then fold flap into the shape of a pouring spout. To close, insert side walls of spout into pouring opening and push the spout closed." Further modifications of this invention which fall within the scope of the following claims will be immediately evident to those skilled in this art.

What I claim is:

1. A dispensing carton comprising a top flap sealed to a lower flap, said top flap comprising a pouring spout blank of substantially rectangular shape which is defined by cuts along its sides and across its top and having a base hinge coinciding with and forming at least part of the fold of said flap, said pouring spout blank being separated by folding lines into a central section adapted to form the bottom of a pouring spout and side sections adapted to form the side walls thereof, said base being cut away at said fold on either side of said central section at the bases of said side sections leaving said base hinge on said central section, said lower flap having an opening directly beneath and having the general shape of said central section, said blank being adapted to be raised from the carton top about said hinge as a base and the side sections being adapted to be folded inwardly at right angles to said central section to form the pouring spout, the said opening being adapted to receive the side walls of the spout to permit it to be folded flush with the carton top thereby closing said opening.

2. The dispensing carton of claim 1 wherein notches are provided at the top of said dispensing opening to receive the outer ends of the side walls of said pouring spout, said notches being tapered to provide a binding action when the spout is closed.

3. A dispensing carton comprising at least two top flaps which are sealed one on top of the other to form the top of the carton, the upper of said flaps comprising a pouring spout blank defined by cuts across the top and along the sides, said blank being divided into a central section forming the bottom of a pouring spout and side sections forming the side walls thereof, said central portion being connected to the box by a hinge at its base, which hinge coincides with the fold of said flap, the bases of said side sections being defined by cuts, said lower flap being provided with a dispensing opening corresponding substantially in shape to the shape of said central section but having notches at the top adapted to receive said side walls when the pouring spout is folded flush with the carton top, said notches being tapered to provide a binding action when the outer ends of said side walls are received therein.

4. A dispensing carton comprising at least two top flaps sealed one on top of the other to form the top of the carton, the upper of said flaps comprising a pouring spout blank adapted to be raised from the top around a hinge at its base and folded into a pouring spout, said hinge constituting at least part of the fold of said upper flap, said blank being separated by scoring lines into a central section adapted to form the bottom of said spout and side sections adapted to form the side walls of said spout, said lower flap being provided with a dispensing opening directly above and corresponding substantially in shape to the shape of the bottom of said spout, a central protruding tongue at the top of said opening mounted on a lower flap and adapted to bear against the bottom of the spout when the spout is folded into the opening with its bottom flush with the carton top, to prevent said spout from being pushed all the way into said dispensing opening, notches being provided on either side of said tongue at the top of said dispensing opening adapted to receive the outer ends of the side walls of said spout and tapered to produce a binding action when said side walls are received therein.

5. A dispensing carton having a top closed by two end and at least one side flap, the end flaps being folded over and sealed on top of said side flap, one of said end flaps forming a hinged pouring spout blank which is divided by scoring lines into a central section adapted to form the bottom of a pouring spout and side sections adapted to form the side walls of said spout, the fold of said flap forming the hinge of said blank, said side flap being provided with a cut-out forming a dispensing opening directly below and having substantially the shape of said central section so that when the side walls of said pouring spout blank are bent inwardly at right angles to the bottom of the spout they can be pushed into said opening and a tongue mounted centrally in the top of said dispensing opening with tapered notches on both sides to receive the outer ends of the side walls of said spout and to produce a binding action when said side walls are received therein.

6. A dispensing carton having a top closed by end and side flaps, the top side flap comprising a

pouring spout blank extending across the top of the carton and being defined by side cuts, with a base hinge formed at the fold of said flap, said blank being separated by scoring lines into a central section adapted to form the bottom of a pouring spout and side sections adapted to form the side walls of said pouring spout, said side sections being cut away at their bases adjacent said fold so that they can be bent at right angles to said central section, a dispensing opening directly beneath and having substantially the same shape as said central section so that said side walls can be received therein when the pouring spout is closed flush with the carton top, and a tongue mounted centrally in the top of said dispensing opening with tapered notches on both sides to receive the outer ends of the side walls of said spout and to produce a binding action when said side walls are received therein.

7. In a dispensing carton, a pouring spout hinged at its base above a dispensing opening, said pouring spout having a bottom section and side walls and having been formed from a substantially rectangular blank constituting part of the top of the carton, said dispensing opening having substantially the shape of the bottom section of the pouring spout, a tongue mounted at the top of the dispensing opening adapted to prevent the pouring spout from being pushed entirely into the opening, said tongue being defined by tapered notches on either side for receiving the side walls of said pouring spout blank, said notches being tapered to provide a binding action when the outer ends of said side walls are received therein.

HENRY C. PARKER.

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