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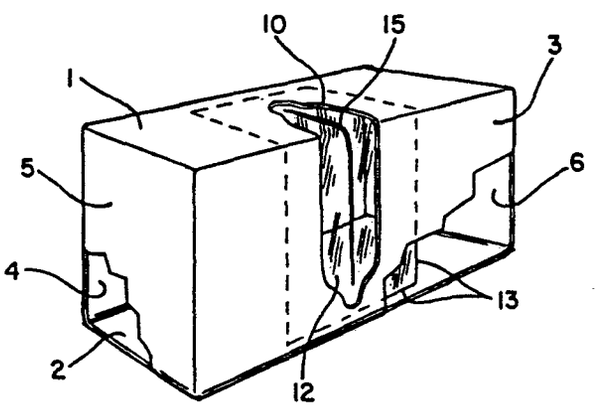
(71) Applicant: **KIMBERLY-CLARK CORPORATION, 401 North Lake Street, Neenah Wisconsin 54956 (US)**

(72) Inventor: **Anderson, Dean K., 1120 North Hawthorne Drive, Appleton Wisconsin (US)**

(74) Representative: **Patentanwälte Grünecker, Kinkeldey, Stockmair & Partner, Maximilianstrasse 58, D-8000 München 22 (DE)**

(54) **Dispensing carton for interfolded paper sheets.**

(57) A dispensing carton for interfolded paper sheets which greatly reduces fall-back contains an opening in the top and front panels of the carton covered by flexible plastic film, said film having a slit through which the paper sheets are initially dispensed through the top panel and thereafter through the front panel.



DISPENSING CARTON FOR INTERFOLDED PAPER SHEETS

BACKGROUND OF THE INVENTION

Pop-up facial tissue cartons contain an opening in the top of the dispenser which allows the user to pull out a single tissue sheet while the next sheet is only partially removed and prevented from falling back (fall-back) into the dispenser. This design is illustrated, for example, by U.S. Patent 3,239,097 to Bates et al which employs a pair of flexible plastic films to hold the partially withdrawn sheet. Although the Bates et al design does prevent fall back for certain dispensing cartons, its effectiveness is limited to cartons having a height no greater than the distance a dispensing sheet can vertically lift the next sheet to be dispensed. If the carton is too high, or if the clip height of interfolded sheets in the carton has been sufficiently diminished, the interfolded sheets will disengage before reaching the top of the carton and thereafter the pop-up feature no longer works very well or not at all.

Therefore, there is a need for a dispensing carton, such as for facial tissues and paper towels and the like, which provides a pop-up dispensing action which is independent of carton height or clip height.

SUMMARY OF THE INVENTION

In general, the invention resides in a dispensing carton for interfolded paper sheets comprising a top panel, a bottom panel, a front panel, a back panel, and two side panels, said top and front panels having an opening covered by flexible plastic film bonded to the carton, said plastic film containing a slit opening in the top and front panels through which the paper sheets are dispensed. Such a carton allows the user to withdraw the paper sheets from either the top or front of the carton, whichever is the

most convenient, in order to prevent fall-back. The slit opening also allows the user to insert thumb and forefinger into the front panel of the carton to easily grab the top sheet of the clip if fall-back does occur. When the carton is full, sheets are easily withdrawn through the slit opening in the top panel in the normal manner, the plastic slit in the top panel serving to hold the next partially withdrawn interfolded sheet in a "pop-up" position for the next use. As the clip height in the carton is reduced to a point where fall-back begins to occur or could occur, sheets can then be withdrawn through the slit opening in the front panel, where the plastic slit in the front panel serves to grasp the next available sheet as before. Hence the pop-up dispensing feature continues to function regardless of the height of the dispenser or the amount of the original clip which has been used.

As a result, this invention allows dispensing cartons to be designed for clip heights of any size, which, for large clips, can provide a significant cost savings by increasing the number of sheets per carton. The carton of this invention is particularly suitable for dispensing facial tissues, paper towels, and the like.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a perspective view of an empty dispensing carton of this invention.

FIGURE 2 is a perspective view of a full dispensing carton of this invention, illustrating withdrawal of a sheet through the top panel.

FIGURE 3 is a view similar to that of FIGURE 2, illustrating withdrawal of a sheet through the front panel after the clip height has been sufficiently reduced to a point where fall-back would occur if the sheet were withdrawn through the top panel.

FIGURE 4 is a perspective view of another embodiment of this invention, which has separate openings in the top and front panels.

FIGURE 5 is a perspective view of another embodiment of this invention having a common cut-out opening in the top and front panels, but having two separate slits - one slit in the top panel and a second slit in the front panel.

DETAILED DESCRIPTION OF THE DRAWING

Referring to FIGURE 1, an empty carton of this invention is illustrated. Shown is the top panel 1, the bottom panel 2, the front panel 3, the back panel 4, and two side panels 5 and 6. For purposes herein, the top panel is that side of the carton which is opposite the side (bottom panel) on which the carton is intended to rest during use. The interfolded sheets are preferably stacked within the dispensing carton such that the individual sheets lie in a plane parallel to the top and bottom panels. (See Fig. 2.) The front, back, and side panels are interchangeable and are so designated only for purposes of reference. In Figure 1, the top and front panels share a common cut-out opening 10 which is covered by a flexible plastic film 12. The shape of the cut-out opening can be any shape which allows removal of the sheets. A suitable alternative shape for example, would be an oval-shaped opening. The plastic film is bonded to the carton, preferably on the inside of the carton with adhesive or other suitable means. The edges 13 of the plastic film are shown in phantom lines. In this embodiment, the plastic film contains an L-shaped continuous slit 15 which lies in the planes of both the top panel and the front panel. However, the slit opening can take many forms. For example, it can be a single linear slit or it can be a plurality of slits, such as a cross-shaped opening formed by two intersecting slits. The slit can be a continuous

opening as shown or it can be perforated, in which case the user will break the perforations for use. The slit can be formed by slitting a single sheet of plastic film or it can be formed by positioning two sheets of plastic film closely together as illustrated in the previously mentioned patent to Bates et al. In any event, the slit opening allows withdrawal of paper sheets through either the top panel or the front panel, as well as through both panels simultaneously as hereinafter illustrated in Fig. 3.

The length of the slit in the front panel will vary depending upon the carton height. However, it must extend downward near the bottom of the carton sufficiently to permit removal of all of the sheets without fall-back. For facial tissue cartons, for example, the slit will preferably extend to within about 1 inch from the bottom of the carton. At the upper end, the slit must extend above the partially used clip sufficiently to allow the user to grab and remove the top sheet of the clip when the clip height has been reduced to a point where fall-back occurs when removing sheets through the top panel.

FIGURE 2 shows the carton of FIGURE 1 filled with interfolded paper sheets 20, illustrating withdrawal of a paper sheet 21 through the top panel. When the carton is full or substantially full, withdrawal of the sheets by the user will be through the portion of the slit in the top panel as shown. As the number of sheets remaining in the carton is reduced to a point where fall-back begins to occur when sheets are withdrawn through the top panel, the user may then withdraw the sheets through the front panel, or at least partially through the front panel.

FIGURE 3 illustrates the latter situation, where a sheet is being withdrawn through the corner edge 31 formed between the front and top panels of the carton of Figure 1. As the number of sheets in the carton is further reduced, the sheets can be withdrawn entirely through the slit in

the front panel. The slit in the plastic film will hold the next sheet and prevent fall-back, which could otherwise occur if the sheets were withdrawn upwardly through the top panel as in conventional cartons.

FIGURE 4 is a perspective view of another embodiment of this invention wherein the dispensing carton has separate cut-out openings 41 and 42 in the top and front panels respectively. Both openings are covered by flexible plastic films containing slits 43 and 44 as previously described. In this embodiment, the user can initially withdraw sheets through the opening in the top panel until a point is reached where fall-back begins to occur. The user can then begin to withdraw sheets through the front panel as before, until the dispenser has been emptied. This embodiment differs functionally from the embodiment illustrated in Figures 1-3 in that the sheets must be withdrawn either through the top or through the front, as opposed to being withdrawn through the corner between the top and front panels.

FIGURE 5 is a perspective view of another embodiment of this invention equivalent in function to that of Figure 4, wherein the dispensing carton has a single cut-out opening common to the top and front panels as in Figure 1, but having two separate slits, 51 and 52, in the plastic film to allow withdrawal of sheets either through the top panel or the front panel.

It will be appreciated that the foregoing examples, shown for purposes of illustration, are not to be construed as limiting the scope of this invention, which is defined by the following claims.

I CLAIM:

1. A dispensing carton for interfolded paper sheets comprising a top panel, a bottom panel, a front panel, a back panel, and two side panels, said top and front panels having a cut-out opening covered by a flexible plastic film bonded to the carton, said plastic film containing at least one slit opening in the top and front panels through which the paper sheets can be dispensed.

2. The carton of Claim 1 wherein the slit opening is a continuous slit in the top and front panels.

3. The carton of Claim 1 wherein the slit opening is a perforated slit in the top and front panels.

4. The carton of Claim 1 wherein the slit opening consists of a first slit in the top panel and a second slit in the front panel.

5. The carton of Claim 1 wherein the top and front panels have a common cut-out opening.

6. The carton of Claim 1 wherein the top and front panels have separate cut-out openings.

7. The carton of Claim 1 wherein the slit opening is linear.

8. The carton of Claim 1 wherein the slit opening is cross-shaped.

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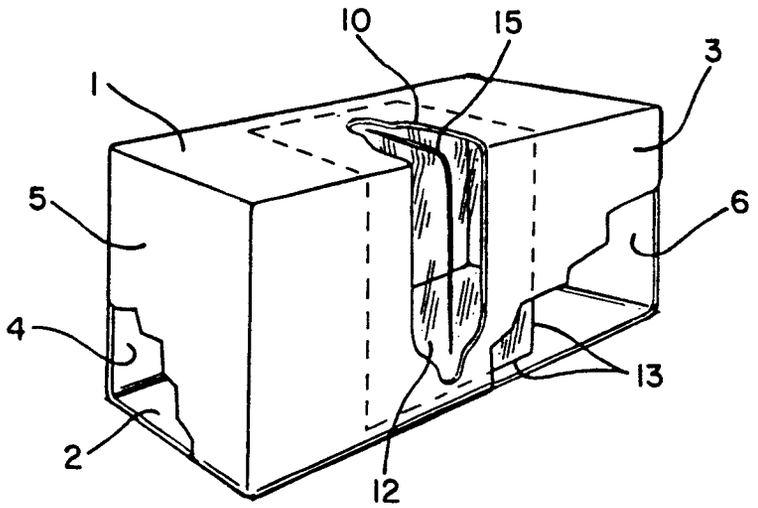

FIG. 1

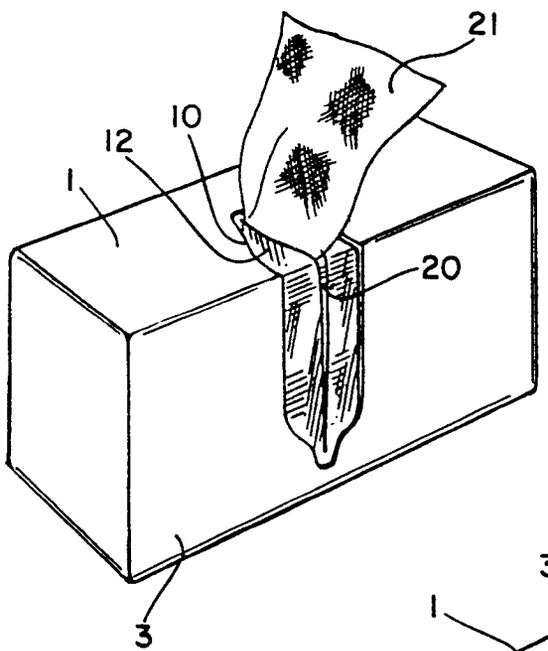

FIG. 2

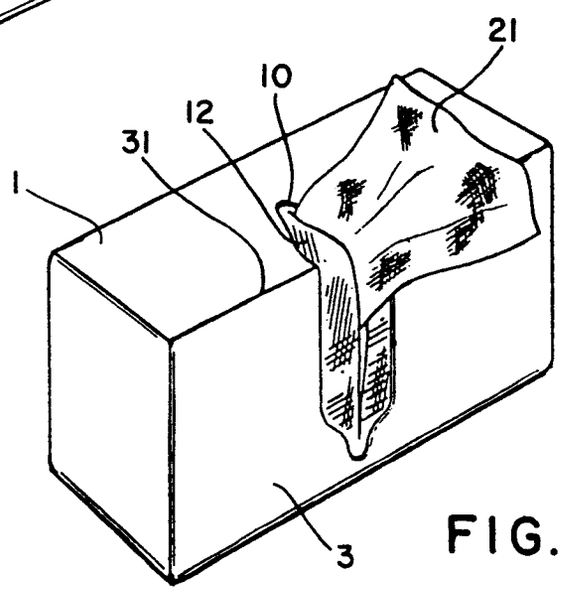

FIG. 3

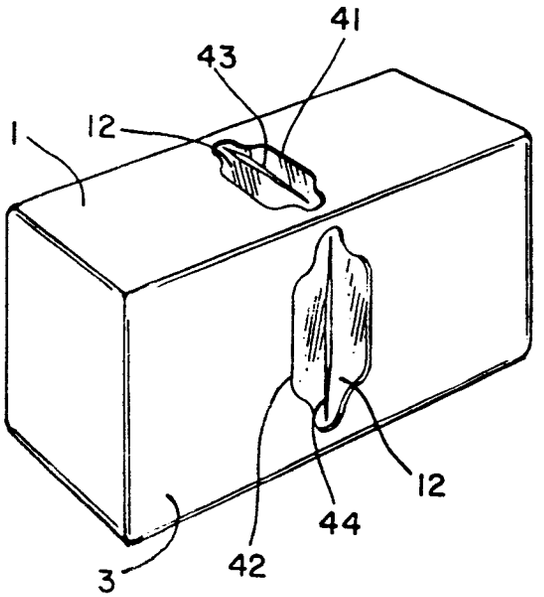

FIG. 4

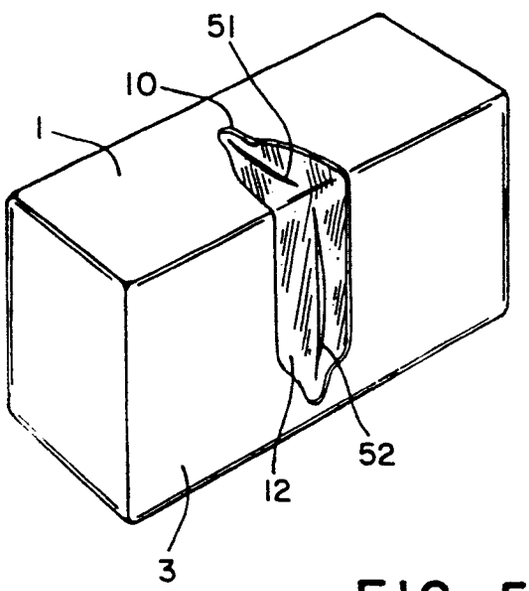

FIG. 5