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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in and relating to Tissue Dispensing Cartons

We, KIMBERLY-CLARK Corporation, a corporation organised under the laws of the State of Delaware, United States of America, of Neenah, Wisconsin, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to tissue dispensing cartons particularly those to be employed for dispensing of inter-leaved face tissues or the like.

15 A tissue dispensing carton in accordance with the invention has an opening formed through one wall and a flexible film bonded to the inner surface of the wall around and extending across an opening, the film also having a line opening, or provision therefore, to permit the extraction of tissues from the carton.

20 The flexible film may be in the form of a pair of sheets which overlap over the central portion of the opening through the carton wall, the opening through the film into the carton occurring between the overlapped portions. Alternatively if the flexible film comprises a single sheet, provision for the line opening may comprise a line of perforations or a line of weakness.

25 A carton in accordance with the invention has the area open to the interior of the carton restricted to a minimum during and after tissue dispensing so that the contents of the carton are protected against the entry of dust and the like. As the line opening through the flexible film maintains a force on a partially withdrawn tissue, the tissue is prevented from "fall-back" which is commonly experienced on the conventional dispensing cartons especially after a substantial portion of the tissue stack within the carton has been dispensed. It will be realised that a user can of course tuck back a partially extracted tissue into the carton if desired so that a substantially sealed carton can thus be achieved.

[Price 1s. 6d.]

If the flexible film is transparent then the contents of the carton can be seen prior to use provided the opening through the carton wall is unsealed. In some instances however the carton wall opening will be closed prior to use by means of a panel which is connected to the surrounding wall by a line of perforations or the like to permit easy removal.

Embodiments of the invention will now be described by way of example, with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a tissue carton in accordance with the invention;

Figure 2 shows in plan, the underside of the top wall of the carton of Figure 1;

Figure 3 is a perspective view of a further carton in accordance with the invention;

Figure 4 shows in plan, the under surface of the top wall of the carton of Figure 3;

Figure 5 shows in perspective, partially broken away, the carton of Figure 1 with a tissue being extracted;

Figure 6 is a fragmentary view, in plan, of the bottom surface of the top wall of the carton shown in Figures 1 and 2.

The tissue dispensing carton 10 shown in Figure 1 is of cardboard sheet stock or the like and has its top wall provided with a dispensing opening generally shown at 12. The opening 12 has the shape of a narrow and truncated ellipse, but it can have various other shapes. The opening 12 may be formed during manufacture either by cleanly cutting the carton stock along marginal line 14 and removing the severed panel, or alternately the opening may be marginally defined in a known manner by a suitable line of perforation for later removal of the panel by a user.

As best seen in Figure 2, the under side of top wall 16 has a sheet of flexible material 18 such as light weight polyethylene film or the like bonded to it. The bonding adhesive or the like shown at 19, (Figure 2) is applied marginally to encircle the opening 12 but is preferably spaced outwardly of the opening margin in cartons provided with a panel-

defining line of perforation to prevent bond breakage during removal of the panel. The film 18 is perforated along a line 20 extending along the major axis of the opening 12. Preferably, but not necessarily, a strip of ink or the like, is printed over or alongside the line of perforation 20 as an aid to a user in severing the film by for example running a finger along the perforations.

The film 18 is preferably adhesively bonded at 19 to the under side of the carton top wall 16 while under a slight degree of tension to insure tautness of the film throughout the area of the opening 12. While perforations 20 preferably extend completely through film 18, they are sufficiently narrow to close up after being formed and thus prevent dust or other foreign material from passing therethrough into the carton interior. That portion of film 18 which bridges the opening 12 as shown in Figure 1 thus serves as a protective window in cartons in which the opening panel has been removed. While opaque film may be used, a clear film permits a potential purchaser to examine the tissue contents of the carton. Since facial tissues and the like are currently sold in a plurality of colours, and in various shades of the same colours, a buyer may thus match colours at the time of purchase.

The panel covering the opening 12 may easily be removed by pressing down on the margins of the perforations surrounding the panel. Removal of the panel in this manner normally results in simultaneous severance of the film 18 along the perforation line 20, but if not the film 18 may thereafter be severed by running a finger along the perforation line 20 from one end to the other. Since that portion of the film which bridges the opening 12 is maintained taut by the adhesive bond to the carton top wall, breakage along the line of perforation may be effected in a surprisingly easy manner. As is well-known, films of polyethylene or the like, when not held taut, are quite difficult to separate along perforation lines provided for that purpose.

An alternative embodiment of the invention is illustrated in Figures 3 and 4 wherein a carton 30 is provided with an opening generally shown at 32 which may be formed for example either by a clean cut along the margin line 34 or by a line of perforation outlining a panel to be removed prior to use. As shown in Figure 4 two sheets of film-like material 38 and 40 are bonded to the under side of top wall 36, the inner margins overlapping along the longitudinal axis as shown at 42. As in the carton shown in Figures 1 and 2, the overlapped sheets of film stock 38, 40 are bonded marginally around the opening, with the sheet 38 being bonded at 44 along the outer side and ends thereof, and the sheet 40 being bonded in a like manner as shown at 46, the bonding being effected while the two overlapped sheets are maintained taut. The

adhesive bond may run contiguously of the margins of clean cut openings but the areas of bonds 44, 46 are preferably set back somewhat from the margin of the opening in instances in which the carton top wall 36 is provided with an opening-defining line of perforation requiring panel removal to form the opening. It will be noted that the film of panels 38, 40, since overlapped in the area 42, does not require to be broken open but instead tissues can be drawn from the carton contents between the overlapped portions of the film. The film is sufficiently flexible to permit a user to insert a thumb and fore-finger between the overlapped margins for removal of either an individual sheet or a plurality of sheets, and thereafter a trailing tissue is partially drawn through the lips formed in the overlapped area 42 which remain in pressure engagement therewith to minimize the opening area and to provide smooth and substantially noiseless tissue extraction.

While the invention is not limited to the employment of a particular type of flexible sheet, polyethylene film of a thickness of, for example, one to five mils has been found to function effectively. A suitable adhesive, such as that which serves well to bond plastic sheet stock to paperboard, may be lightly applied to the polyethylene film in the marginal areas of the opening by a printing roller or otherwise during high speed carton production. The film may then be roller applied to the inner face surface of the top wall portion in register with the clean cut or perforation defined opening.

After severance along perforation line 20 of the carton shown in Figure 1, the two adjacent half portions of film 18 continue to bridge opening 12 from one end thereof to the other while remaining reasonably taut and in substantial abutment along the broken line 20. The film half portions may, however, be easily spread by a user's thumb and forefinger while grasping the uppermost sheet of the tissue stack within the carton or if desired, for extraction of a portion of the tissue stack housed therein. The cartons shown are primarily intended for use with stacks of interleaved tissues rather than with C-folded or other non-interleaved stacks of tissues.

Tissue interleaving to form the stack may be accomplished, for example, either by inter-folding of tissue panel portions which are lightly interbonded, one to the other, or by interleaving the tissues in Z-configuration or otherwise but without interbonding therebetween. As shown in Figure 5, after severance of the flexible film 18 of the Figure 1 carton along the perforation line 20 individual tissues 48 can be extracted from the stack 50 between the half portions of the film 18. During extraction, the half portions of film 18 tend to be pulled upwardly into a transversely arched configuration to form a pair of lip-like constricting members, one of which is visible in

Figure 5. After a trailing tissue sheet 52 is partially drawn through the opening during each dispensing operation, the marginal portions of the film maintained under tension in contact therewith, contract under tension to minimize the opening area, gripping the trailing interleaved sheet which partly projects above the carton top wall while protecting the carton contents against entry of dust and the like.

WHAT WE CLAIM IS:—

1. A tissue dispensing carton having an opening formed through one wall and a flexible film bonded to the surface of the wall and extending across the opening, the film having a line opening, or provision therefore, to permit the extraction of tissues from the carton.

2. A tissue dispensing carton as claimed in claim 1 in which the flexible film is in the form of a pair of sheets which overlap along a line extending across the opening through the carton wall, the line opening through the film into the carton occurring between the overlapped portions of the two sheet.

3. A carton as claimed in claim 1 in which the provision for the opening through the film comprises a line of perforations or a line of weakness.

4. A carton as claimed in claim 2 or 3 in which the flexible film is polyethylene of a thickness of about one to five mils.

5. A carton as claimed in any one of the preceding claims in which the opening through the carton wall is normally closed by a panel which is secured to the surrounding wall by a line of perforations or the like to permit of its removal prior to use.

6. A carton as claimed in any of the preceding claims in which the opening through the carton wall is elongate and the opening, or the provision therefore, through the film extends along the major axis of the wall opening.

7. A carton as claimed in any one of the preceding claims in which the film is transparent or translucent.

8. A tissue dispensing carton substantially as hereinbefore described with reference to either Figures 1 and 2 or Figures 3 and 4 of the accompanying drawings.

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Figure 5. After a trailing tissue sheet 52 is partially drawn through the opening during each dispensing operation, the marginal portions of the film maintained under tension in contact therewith, contract under tension to minimize the opening area, gripping the trailing interleaved sheet which partly projects above the carton top wall while protecting the carton contents against entry of dust and the like.

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