SYSTEM FOR DISPENSING CUT LENGTHS OF A STRIP OF PAPER CONTAINED IN A BOX THAT DISPENSES INDIVIDUAL CUT LENGTHS

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ABSTRACT
A dispensing system for dispensing cut lengths of a strip of paper includes a box configured to contain the cut lengths of a strip of paper. The box is made of semi-rigid material that dispenses individual cut lengths through a dispensing slot, the cut lengths of a strip of paper being made up of cut lengths held together by joints, and the dispensing slot being narrower in width than a width of the strip of paper. The box includes a guide means for guiding the strip of paper, the guide means being formed of two wall elements forming a narrow space through which the strip of paper is guided and held in contact with as far as the dispensing slot, the narrow space being formed by folding a panel of the box about a fold line in which the dispensing slot is formed.
SYSTEM FOR DISPENSING CUT LENGTHS OF A STRIP OF PAPER CONTAINED IN A BOX THAT DISPENSES INDIVIDUAL CUT LENGTHS

BACKGROUND OF THE INVENTION

[0001] The present invention relates to the field of sanitary and domestic papers.

[0002] Paper intended for these uses comes in a number of forms: a continuous strip precut to form a succession of individual cut lengths held together by joins which yield easily when pulled, or a continuous strip without any precuts, that is torn to the desired length, it being possible for the strip to be wound on itself or onto a core to form a roll, or it being possible for the strip to be concertina-folded, each panel forming one cut length, as individual cut lengths stacked one on top of the next to form a pile.

[0003] In order to make products in the form of a continuous strip precut into cut lengths attached to one another by joins practical to use, and also with a view to preserving hygiene, they are packaged in a wrapper which may be rigid, with an opening for dispensing the paper one sheet at a time.

[0004] The problem is that of actually fulfilling these two functions. It is desirable that pulling the first sheet available through the opening should release just one sheet at a time and not cause the entire strip of paper to be pulled out. In order to achieve that, it is necessary for the joins connecting the first sheet to the next to yield as a matter of priority. It must not be necessary to use both hands in order to separate the sheets because, firstly, to do so is impractical and, secondly, the paper not extracted from the wrapper has not to be touched as touching it would not be hygienic. The possibility of forming a cutting means at the edge of the opening, but it can then not be certain that the strip will be cut at the joins and that cutting will not be a clean cut.

[0005] There are numerous embodiments already in existence in an attempt to improve the dispensing of products.

[0006] For example, there is the solution described in patent application WO 0141613. The system for dispensing the products of a perforated strip of material comprises a dispensing slot the edges of which are separated by the thickness of the sheet so as not to slow it down. The sheets are held together by joins extending over one third of the width of the strip, the other two thirds being cut. Thus, flaps are formed that are capable of flapping on either side of the plane of the strip. When the strip of paper is pulled through the slot, the flaps are folded against the plane of the strip. The strip is slotted as this double-thickness part enters the slot. The slot is narrow enough in the thickness direction to impede the passage of two thicknesses of sheet. The pulling forces therefore cause the strip to tear at the line of joins. According to one of the embodiments depicted in FIG. 2C of WO 0141613, the dispensing opening is circular, the resistance to movement being produced by the folds formed in the direction of pulling as the strip passes through the opening. This solution, which is effective in terms of the separation of the sheets as they pass through the dispensing opening, is incapable of holding the free end of the strip in the opening. The free end therefore has a tendency to fall back down into the box. Another solution which consists in forming a wider opening in the middle so that fingers can pass through this opening is not considered satisfactory.

[0007] The applicant has set itself the objective of producing a dispensing system which is both effective in separating the sheets as they pass through the dispensing opening and which allows the free edge of the strip remaining in the box to be held available for extracting the next cut length.

BRIEF DESCRIPTION OF THE INVENTION

[0008] An embodiment of the invention includes a system for dispensing cut lengths of a strip of paper, such as sanitary and domestic papers, contained in a box made of a semi-rigid material such as cardboard and that dispenses individual cut lengths through a dispensing slot, the strip of paper being made up of cut lengths held together by joins, wherein the dispensing slot is narrower in width than the width of the strip, the box includes a guide means for guiding the strip, this guide means being formed of two wall elements forming a narrow space through which the strip is guided and held with contact as far as the dispensing slot, and being formed by folding a panel about a fold line in which the dispensing slot is formed.

[0009] According to a number of alternative forms of embodiments of the invention: the joins between two cut lengths are arranged on a first part and on a second part of the width of the strip in such a way that the resistance to pulling is lower on the second part than on the first part thus forming, on the second part, a separation initiator at which the cut lengths are encouraged to separate; the joins have, on the first part, a first spacing between two adjacent joins and, on the second part, a second spacing between two adjacent joins, the two spacings being different from one another, the joins are preferably all of the same width; the second spacing is equal to the width of the second part; the first part extends from one edge of the strip, the first part extends between one quarter and three quarters of the width of the strip; and/or the first part extends over a central part of the strip, leaving, on each side, two second parts that form separation initiators.

[0010] In an embodiment, the invention applies to a strip in the form of a roll or alternatively one that is concertina-folded.

[0011] In an embodiment, the two wall elements are arranged in such a way as to guide the strip which is to be dispensed in the form of cut lengths over at least 10% of the length of a cut length.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Further features and advantages will become apparent from the description which follows with reference to the drawings in which:

[0013] FIG. 1 depicts a roll made up of cut lengths,

[0014] FIG. 2 shows a strip folded in a zigzag configuration,

[0015] FIG. 3 shows an example of a connection between two consecutive cut lengths of the strip,

[0016] FIG. 4 shows another example of a connection between two consecutive cut lengths of the strip,

[0017] FIGS. 5 to 8 show a box which, together with the strip, forms the dispensing system in accordance with embodiments of the invention,

[0018] FIG. 9 shows an alternative form of the dispensing system in accordance with an embodiment of the invention, and
FIG. 10 shows a cardboard box of the system according to an embodiment of the invention, folded out flat.

DETAILED DESCRIPTION OF THE INVENTION

An embodiment of the invention relates to paper products which are in the form either of rolls 1, FIG. 1, or in the form of a strip 3 folded into a zigzag or concertina configuration, FIG. 2, which is aimed particularly though not exclusively at sanitary and domestic papers: bathroom tissue, kitchen towels, facial tissues, towels, etc. For these uses the paper is made of tissue, which is an absorbent low-grammage paper with one or more superposed plies. The plies may or may not be joined together. Likewise, they may or may not be embossed in order as appropriate to confer softness and bulk upon them. In an embodiment, the strip is precut in the direction of its length at regular intervals into successive cut lengths, generally all of the same size. The precut, by means of a blade forming a knife that is toothed, extends transversely to the longitudinal direction of the strip, from one edge to the other. The precut line is generally straight and comprises an alternation of joins and cuts, generally rectangular. The width of the joins and of the cuts can vary. The joins are strong enough that a modest pull on a cut length does not tear them.

FIG. 3 shows a first form of cut according to an embodiment of the invention.

The two cut lengths 2a and 2b are held together by joins T on a first part P1 of the dividing line separating the two cut lengths 2a and 2b. This first part extends to the middle of the line over a distance here substantially equal to half the width of the strip. On each side of this first part, the dividing line is cut to form the two second parts P2 and P2. Each second part extends from one edge of the strip of paper.

More generally, a distinction is made between a part P1 and a part P2 and/or P2 the joins of which are arranged in such a way that the resistance to pulling is lower in the second part than in the first part, thus forming on the said second part a separation initiator along which the cut lengths are encouraged to separate.

For example, the difference in resistance to pulling may be obtained by the spacing between the joins, the joins all for example being of the same width. Thus, with the joins spaced apart, a distinction is made between a first spacing E1 between two adjacent joins and a second spacing E2 between two other adjacent joins. The two spacings differ between the first part P1 and the second part P2 and/or P2.

These spacings E1 and E2 are arranged according to the resistance to pulling that is to be achieved.

In the case of the example of FIG. 3, the spacing E2 corresponds to the cut of the parts P2 and P2.

FIG. 4 shows an alternative form with a cut P20 on just one side of the first part P10 formed of joins T.

FIG. 5 shows an alternative form with a cut P20 on just one side of the first part P10 formed of joins T.

More generally, the difference in resistance to pulling can be obtained via the spacing between the joins and/or via the width of the joins.

The box 10 of the dispensing system according to an embodiment of the invention, which box is depicted in FIG. 5, is cubic in shape with a dispensing system on one face which may be the top face. This comprises two panels 11 and 12 positioned against one another and standing up from a face, in this instance the top face 10s of the box. The space between the two panels is open on one side 111 to the inside of the box. The opposite edge 112 is open in just a central part 112a. On each side of this opening 112a, the panels meet in a closed edge 112b, 112c. The width of the panels 11 and 12 is the same as that of the strip 1.

In FIG. 5, a cut length 2a (see circle-A) of a strip 1 has entered the opening 112a. In FIG. 6, the cut length 2a (circle-A) has started to be pulled upwards; the cut length deforms and passes through the opening 112a.

When the cut length 2a has been pulled, the dividing line separating it from the next cut length 2b (see circle-B) in its turn enters the opening 112a. FIG. 7 shows that the line P1 formed of the joins T is level with the edge (top ridge line between panels 11 and 12) of the opening 112a. The second parts of the dividing line P2 and P2 are slowed by the closed edges 112b and 112c. The stoppage of the second parts against the closed edges can be seen in detail depicted in FIG. 7a. If the cut length 2a continues to be pulled, the line of joins T tears, releasing this length, as can be seen in FIG. 8.

By virtue of the guide lines from the two panels and the friction, the cut length 2b is held by these panels. It does not drop back into the box. It is ready and in place to be extracted in its own turn. In other words, the cutting of a cut length 2a occurs at the dispensing slot 112a when the next cut length 2b is positioned in the guide means 11, 12.

FIG. 9 shows an alternative form with an opening 210a on one side and just one closed edge 212a; it works in the same way as discussed above in relation to FIGS. 5-8.

FIG. 10 shows a box of the dispensing system in accordance with an embodiment of the invention, folded out flat. We find the two panels 11 and 12 cut to form an opening 112a, the two panels being connected on each side of the opening 112a via a line 112b and 112c. The width of the panels is that of the box. In an embodiment, the fold height of the two panels is substantially equal to half the length of a cut length of a strip of paper which is guided and held between the two panels. In another embodiment, and more generally, the height is at least equal to 10% of the length of the cut length of a strip of paper.

The box is for example made of cardboard, but any other material would suit; the box material may be flexible. The panels are rigid or semi-rigid so as to be able to guide and hold the sheets of paper.

1. A dispensing system for dispensing cut lengths of a strip of paper, the system comprising:

   a box configured to contain the cut lengths of a strip of paper, the box being made of semi-rigid material that dispenses individual cut lengths through a dispensing slot, the cut lengths of a strip of paper being made up of cut lengths held together by joins;

   wherein the dispensing slot is narrower in width than a width of the strip of paper;

   wherein the box comprises a guide means for guiding the strip of paper, the guide means being formed of two wall elements forming a narrow space through which the strip of paper is guided and held in contact with as far as the dispensing slot, the narrow space being formed by folding a panel of the box about a fold line in which the dispensing slot is formed.

2. The dispensing system according to claim 1, wherein the joins between two adjacent cut lengths are arranged on a first part and on a second part across the width of the strip of paper in such a way that resistance to pulling apart the two adjacent cut lengths is lower on the second part than on the first part, thus forming on the second part a separation initiator at which the cut lengths are encouraged to separate.
3. The dispensing system according to claim 2 in which the joins have, on the first part, a first spacing between two adjacent joins and, on the second part, a second spacing between two adjacent joins, the first and second spacings being different from one another.

4. The dispensing system according to claim 3 in which the second spacing is equal to the width of the second part.

5. The dispensing system according to claim 2 in which the first part extends between one quarter and three quarters of the width of the strip of paper.

6. The dispensing system according to claim 2 in which the first part extends over a central part of the strip of paper, leaving a second part on one side of the first part, and a third part on the other side of the first part.

7. The dispensing system according to claim 1, wherein the strip of paper is in the form of a roll.

8. The dispensing system according to claim 1, wherein the strip of paper is concertina-folded.

9. The dispensing system according to claim 1, wherein the two wall elements are arranged in such a way as to guide the strip of paper, which is to be dispensed in the form of cut lengths, over at least 10% of the length of a cut length.

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