(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 743 264 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
20.11.1996 Bulletin 1996/47

(51) Int. Cl.[6]: **B65D 83/08**, B65D 5/66

(21) Application number: **95107382.4**

(22) Date of filing: **16.05.1995**

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

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(54) Wrapping blank of paper or plastic film for a cuboid soft pack for cellulose tissues

(57) A wrapping blank of paper or plastic film for a cuboid soft pack for cellulose tissues or the like has a rectangular zone (1) for the production of the narrow sides (7, 8), the face and the back (6) as well as of the bottom (9) of the soft pack. Further, a closing flap (13) is provided, which is integrally formed on the rectangular zone (1) and which covers a removal opening formed by a cutout (15) of the soft pack in the latter's closed condition. The free lateral edge of the closing flap (13) and the cutout (15) are formed by a common, substantially sinusoidal edge of cut (16) of continuous run free from corners and misalignments, the convex section (17) of which defines the closing flap (13) and the concave section (19) of which defines the cutout (15).

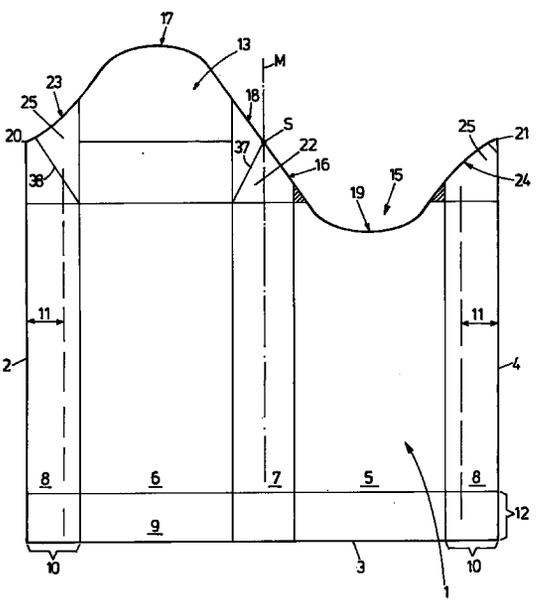

FIG. 1

EP 0 743 264 A1

Description

The invention relates to a wrapping blank of paper or plastic film for a cuboid soft pack for cellulose tissues or the like comprising the features specified in the preamble of patent claim 1 as well as a method for the production of such a wrapping blank.

Cellulose tissues, for instance handkerchieves, but also other kinds of tissues, such as facial tissues, cleansing tissues and the like, mostly come in certain quantities, for instance in the number of ten, to form packs. The corresponding soft pack consists of a wrapping blank of paper or plastic film, serving various purposes. At the manufacturer or the retailer, it is the object of the wrapping to protect the contents from soil. When the pack is used, the wrapping must be easy to open so that the contents can be removed in as simple a manner as possible. This is accompanied by the demand for the wrapping to be reclosable after the removal of a tissue so that the remaining tissues continue to be protected from soil.

Of course, the manufacture of reclosable wrappings also poses an economic problem. Reclosability demands for a more complicated wrapping blank than this was the case with non-reclosable packs. With prior art wrapping blanks, as for instance specified by German utility model 75 39 076, it is in particular the closing flap, but also the cutout for the removal opening that require cuts causing waste in the production of the wrapping blank for the soft pack. Consequently, the manufacture of such packs gives rise to some material requirements. Further, the waste produced during the manufacture of the wrapping blank must be removed permanently to avoid breakdown of the wrapping machine.

DE 33 24 490 C1 discloses a wrapping blank of the species that can be produced without waste from an endless web of film. The wrapping blank disclosed thereby is however accompanied by several disadvantages, resulting in the fact that this wrapping blank was not put into practice. For instance, the course taken by the cut to form the free edge of the closing flap and the cutout is extremely complicated, having sections of perpendicular design. As a result, there are problems in cutting the wrapping blank from a continuously conveyed endless web with the aid of conventional rotating cutting tools. Furthermore, the design of the wrapping blank results in that lateral flaps remain in the vicinity of the removal opening, which partially cover the removal opening located at the front of the pack. This is uncomfortable when you want to take out the contents of the pack.

Proceeding from the problems explained, it is the object of the invention to improve a wrapping blank of the generic type such that while keeping its characteristic of production free from waste, the blank can be cut without any difficulties in particular from an endless web with the aid of conventional cutting tools, while simultaneously being convertible into an optically pleasant soft pack offering the possibility of unimpeded removal. This object is attained by the features specified in the characterizing part of claim 1. Accordingly, the free edge of the closing flap and of the cutout constituting the removal opening of the pack in the folded condition is formed by a common, substantially sinusoidal edge of cut of continuous run free from corners and misalignments, the convex section of which substantially defines the closing flap and the concave section of which substantially defines the aforesaid cutout for forming the removal opening. As a result of the sinusoidal course of the edges of cut and their being free from corners and misalignments, the shape of the blank is of the most simple design in spite of the closing flap and the cutout realized thereby. In particular, it has no sectional cuts of perpendicular arrangement, which strongly complies with the mechanical cutting of the wrapping blank. Owing to the smooth and harmonious sinusoidal shape of the free edge, which lies open over its entire length in the opened condition of the soft pack produced with the aid of the wrapping blank, the soft pack is of an esthetically especially attractive design. Furthermore, due to the aforesaid sinusoidal shape, manufacture free from waste is still possible, since - as specified in the characterizing part of method claim 7 - two wrapping blanks assigned to each other in pairs can be produced at a time by a common, substantially sinusoidal wavecut for the simultaneous production of the edge of cut from an endless web of paper or plastic film.

When embodied according to claim 2, the wrapping blank helps create an esthetically especially attractive soft pack. Moreover, two identical wrapping blanks can be produced by the point symmetric design of the edge of cut during the cutting free from waste of two blanks assigned to each other in pairs according to claim 7.

The measures given in claims 3 and 4 again serve to improve the esthetic overall appearance of the soft pack produced from the wrapping blank according to the invention. This will be illustrated in conjunction with the description of several exemplary embodiments.

Claims 5 and 6 characterize further alternative configurations of the wrapping blank according to the invention, which are suitable in particular for a broadside pack or a so-called "flat case". The measure specified in claim 5 serves to make the bottom of the soft pack more attractive optically.

Claim 6 refers to a wrapping blank which is created by geometrically congruent refashioning the wrapping blank according to claim 1. Further details of this can be taken from the description of the corresponding example of embodiment.

As mentioned, claim 7 refers to a method for the production of wrapping blanks, the design of which results from claims 1 to 6. Claims 8 and 9, which refer to claim 7, relate to two alternatives of effecting the sinusoidal wavecut.

Further features, details and advantages of the invention will become apparent from the ensuing description of examplary embodiments of the subject

matter of the invention and the method for its production, taken in conjunction with the drawings, in which:

Fig. 1 is a plan view of a first embodiment of a wrapping blank placed flat,

Fig. 2 is a partial plan view of an endless web of plastic film with cutting lines for the production of the wrapping blank according to Fig. 1 being drawn,

Fig. 3 and 4 are partial plan views of endless webs by analogy to Fig. 2 showing alternative shapes of cutting lines,

Fig. 5 is a perspective illustration of a soft pack for tissue handkerchieves produced with the aid of the wrapping blank according to Fig. 1, and

Fig. 6 is a partial plan view of an endless web of plastic film with cutting lines drawn for the production of a wrapping blank, showing further alternative configurations of the wrapping blank.

In the wrapping blank of Fig. 1, which is designed for an upright pack, the actual contour is shown by thicker solid lines. The thinner solid lines mark the folding edges along which the wrapping blank can be folded around a pile of cellulose tissues to form the soft pack of Fig. 5.

As a matter of principle, the wrapping blank comprises a rectangular zone 1, which is defined by three lateral edges 2, 3, 4 disposed at right angles. In the folded condition, this rectangular zone 1 constitutes the face 5, the back 6, the two intermediate narrow sides 7, 8 and the bottom 9 of the soft pack, which is in the form of a conventional block bottom. The lateral strips 10 extending along the two lateral edges 2, 4 in common form the one narrow side 8, the strips 10 being glued (for a paper wrapping blank) or welded (for a plastic film wrapping blank) in the vicinity of the overlap 11. The strip 12 extending in parallel to the lateral edge 3 forms the bottom 9.

A closing flap 13 is integrally formed on the rectangular zone 1, covering the removal opening 14 of the soft pack in the latter's closed condition. The removal opening 14 is formed by a cutout 15 of the wrapping blank located beside the closing flap 13.

As seen in Fig. 1, the free edge of the closing flap 13 and the cutout 15 is formed by a common, substantially sinusoidal edge of cut 16 of continuous run free from corners and misalignments. The term "sinusoidal" is not to be understood in the strictly mathematical sense, but means that the edge of cut 16 comprises a convex section 17 followed by a concave section 19 - via a straight section 18 if required. From the starting point 20 to the final point 21 the edge of cut 16 must not have any corners or misalignments, i.e. it must be of continuous and substantially smooth run. As seen in Fig. 1, the convex section 17 of the edge of cut 16 defines the closing flap 13 and the concave section 19 defines the cutout 15 for the production of the removal opening 14. The straight section 18 defines a substantially triangular side tab 22 prolonging the narrow side 7 upwards (cf. Fig. 5).

Between the starting point 20 of the edge of cut 16 and the convex section 17 on the one hand and between the concave section 19 and the final point 21 of the edge of cut 16 on the other hand, starting and final sections 23, 24 of the edge of cut 16 are provided, which are of reverse curvature. As seen in Fig. 5, these starting and final sections 23, 24 overlap in the folded condition constituting the soft pack, the misalignment of level of the starting point 20 relative to the final point 21 caused by the overlap 11 being reduced by the reverse curvature of the starting and final sections 23, 24. This improves the optical appearance of the soft pack in particular in the opened condition shown in Fig. 5.

Further, the starting and final sections 23, 24 of the edge of cut 16 define a second side tab 25 of the soft pack lying opposite the side tab 22.

The overall course of the edge of cut 16 is designed such that the latter is point symmetric referred to its point of intersection S intersecting a wrapping blank central line M placed between the two parallel lateral edges 2, 4 of the rectangular zone 1.

As seen from Fig. 2, the production of these wrapping blanks from an endless web 26 is possible free from waste. The endless web 26 is fed in the conveying direction T to a cutting device (not shown), where two wrapping blanks 27, 27' at a time assigned to each other in pairs are cut by a common, substantially sinusoidal wavecut 29 for the simultaneous production of the corresponding sinusoidal edge of cut 16 of the wrapping blanks 27, 27' as well as by straight cuts 30 in the broadwise direction B for the production of the corresponding lateral edges 2, 4. The width of the endless web 26 is such that two copies can be produced side by side. If the width of the endless web 26 is correspondingly increased, the number of side-by-side copies produced may of course rise to four, six etc. In the example of embodiment according to Fig. 2, the lateral edge 3 of the wrapping blank 27, 27' is formed by the lateral edges 31, 32 of the endless web 26.

In the case of the examplary embodiment of Fig. 3 illustrating the cutting of the wrapping blanks 27, 27' from the endless web 26, the sinusoidal wavecut is produced substantially parallel to the conveying direction T as is the case with the embodiment of Fig. 2. In the embodiment of Fig. 3, the wavecut 29 is such that there are no starting and final sections 23, 24 of reverse curvature. Rather, a misalignment V of the respective starting and final points 20, 21 of the wavecut 29 is provided for compensation of the difference in level between the starting point 20 and the final point 21 of the edge of cut.

In the embodiment of Fig. 4, the endless web 26 is provided with sinusoidal wavecuts 29, which are placed

substantially transversely to the conveying direction T for the production of wrapping blanks 27, 27' consecutive by twos and between which cuts 30 are provided. In this regard, each wavecut 29 forms the edge of cut 16 of the wrapping blanks 27, 27' assigned to each other by twos. The two lateral edges 31, 32 of the endless web 26 constitute the lateral edges 2, 4. Each straight cut 30 serves to produce the two lateral edges 3 of two subsequent wrapping blanks 27', 27. Again, there is a misalignment V between the starting 20 and final point 21 of the edge of cut 16.

In connection with Fig. 5 it must be added that in the vicinity of the convex section 17 of the edge of cut 16, the closing flap 13 may be provided for instance with a sticker 34 with which to fix the closing flap 13 to the face 5 below the concave section 19 of the removal opening 14. This position is roughly outlined by the dotted line in Fig. 5. When the soft pack is closed, the two side tabs 22, 25, which project from the pile 35 of tissue handkerchieves 36 in prolongation of the narrow side 7, 8, are folded inwards in the way of a gusset along the oblique folding lines 37, 38 shown by dashes in Fig. 5.

As an alternative of the sticker 34, an adhesive zone 39 roughly outlined by hatching in Fig. 5 may be used on the face 5 of the soft pack. This adhesive zone 39 is disposed preferably centrally in front of the concave section 19 of the edge of cut 16. It may for instance consist of a reversibly adhesive, pressure sensitive glue applied by dot screen printing. A continuous layer of pressure sensitive glue may also be used. The external geometry of the adhesive zone 39 is advantageously suited to the contour of the substantially sickle-shaped overlap portion between the closing flap 13 and the face 5 of the soft pack, as apparent from the arcuate course of the adhesive zone 39 according to Fig. 5.

Fig. 6 illustrates further configurations of wrapping blanks designed for broadside packs or so-called "flat cases". As outlined by thick solid lines, a basic type of a wrapping blank again comprises a rectangular zone 1 defined by lateral edges 2, 3, 4 and a sinusoidal edge of cut 16 with a convex section 19 for the production of the removal opening 14. The folding lines necessary for the production of the face 5, the back 6, the two lateral narrow sides 7, 8 and the bottom 9 are shown by short dashes.

As seen in Fig. 6, again two wrapping blanks at a time can be produced head by head and free from waste by a transverse wavecut 29 from an endless web 26 - as explained above.

As roughly outlined by lines of long dashes in Fig. 6, an alternative configuration of the wrapping blank may be realized, in which the lateral edge 3 of the wrapping blank opposite to the edge of cut 16 takes a course that is stepped in the way of two trapezoids 40, 41 disposed in opposite directions. In this case, the course of the lateral edge 3' thus produced is point symmetric relative to the point of intersection S' formed by the lateral edge 3' intersecting the central line M of the wrapping blank.

Fig. 6 illustrates another alternative of the shaping of the wrapping blank. This is the area roughly outlined by wide hatching. This shape is produced in that the area defined by solid lines and lines of long dashes is cut up along the central line M and in that the right part - referred to Fig. 6 - of the wrapping blank is attached, rotated by 180°. Figuratively speaking, the two parts amalgamate in the vicinity of the abutting sections of the lateral edge 3. As a result, the convex section 17 of the edge of cut 16 defining the closing flap 13 on the one hand and the concave section 19 of the edge of cut 16 defining the removal opening on the other hand are disposed on two opposite sides of the wrapping blank, which are connected with each other by the straight lateral edges 2, 4. In this embodiment, too, there is the possibility to produce wrapping blanks lined up in series from an endless web free from waste.

Claims

1. Wrapping blank of paper or plastic film for a cuboid soft pack for cellulose tissues or the like, in a plain condition comprising a rectangular zone (1), which is defined by three lateral edges (2, 3, 4) disposed at right angles and which in a condition folded to form the soft pack, constitutes the two narrow sides (7, 8), the face (5), the back (6) and the bottom (9) of the soft pack, and a closing flap (13), which is integrally formed on the rectangular zone (1) and which, in the closed condition of the soft pack, covers a removal opening (14) formed by a cutout (15) beside the closing flap (13), characterized in that the free edge of the closing flap (13) and of the cutout (15) is formed by a common, substantially sinusoidal edge of cut (16) of continuous run free from corners and misalignments, the convex section (17) of which defines the closing flap (13) and the concave section (19) of which defines the cutout (15) for the production of the removal opening (14).

2. Wrapping blank according to claim 1, characterized in that the edge of cut (16) is point symmetric referred to a point of intersection (S) formed by the edge of cut (16) intersecting a wrapping blank central line (M) placed between the two parallel lateral edges (2, 4) of the rectangular zone (1).

3. Wrapping blank according to claim 1 or 2, characterized in that at the start of the convex section (17) on the one hand and at the end of its concave section (19) on the other, the edge of cut (16) is provided with starting (23) and final sections (24) of reverse curvature, which overlap each other in the condition of the wrapping blank folded to form the soft pack.

4. Wrapping blank according to claim 1, characterized in that the final point (21) of the substantially sinu-

soidal edge of cut (16) has a misalignment (V) in relation to its starting point (20).

5. Wrapping blank according to one of claims 1 to 4, characterized in that the lateral edge (3') of the wrapping blank opposite to the edge of cut (16) has a course stepped in the way of two trapezoids of opposite directions and in particular point symmetric referred to a point of intersection (S) formed by the lateral edge (3') intersecting the central line (M).

6. Wrapping blank according to claim 1, characterized in that the convex section (17) of the edge of cut (16) defining the closing flap (13) and the concave section (19) of the edge of cut (16) defining the removal opening (14) are disposed on two opposed sides of the wrapping blank.

7. Method for the production of wrapping blanks (27, 27') according to one of claims 1 to 6 from an endless web (26) of paper or plastic film, characterized in that two wrapping blanks (27, 27') at a time assigned to each other in pairs are cut free from waste from an endless web (26) by a common, substantially sinusoidal wavecut (29) for the simultaneous production of the corresponding sinusoidal edge of cut (16) and of the latter's convex and concave section (17, 19) on both wrapping blanks (27, 27') as well as by straight cuts (30) for the production of corresponding lateral edges (2, 3, 4).

8. Method according to claim 7, characterized in that the sinusoidal wavecut (29) is effected substantially parallel to the conveying direction (T) of the endless web (26).

9. Method according to claim 7, characterized in that the sinusoidal wavecut (29) is effected substantially transversely to the conveying direction (T) of the endless web.

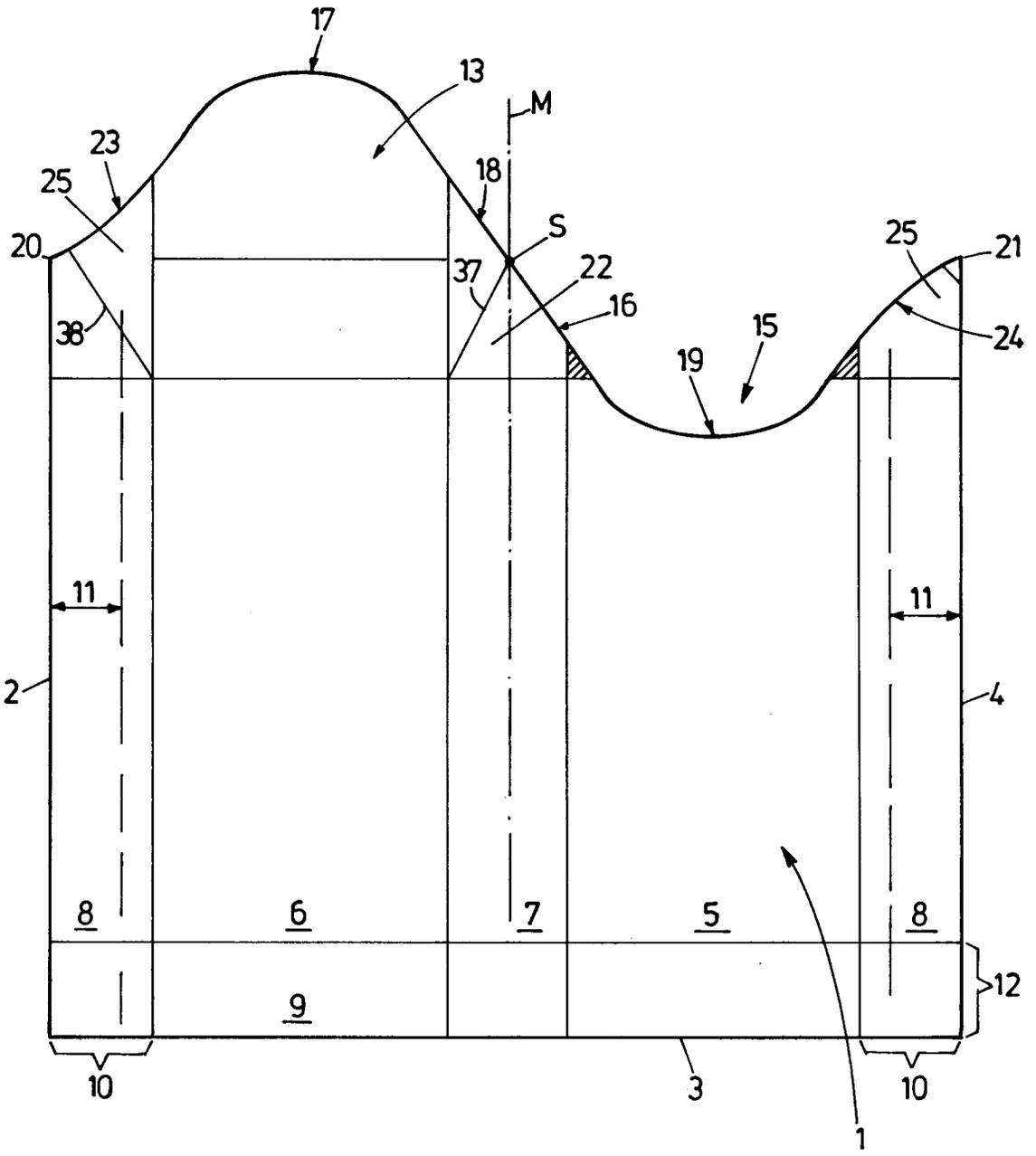
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FIG. 1

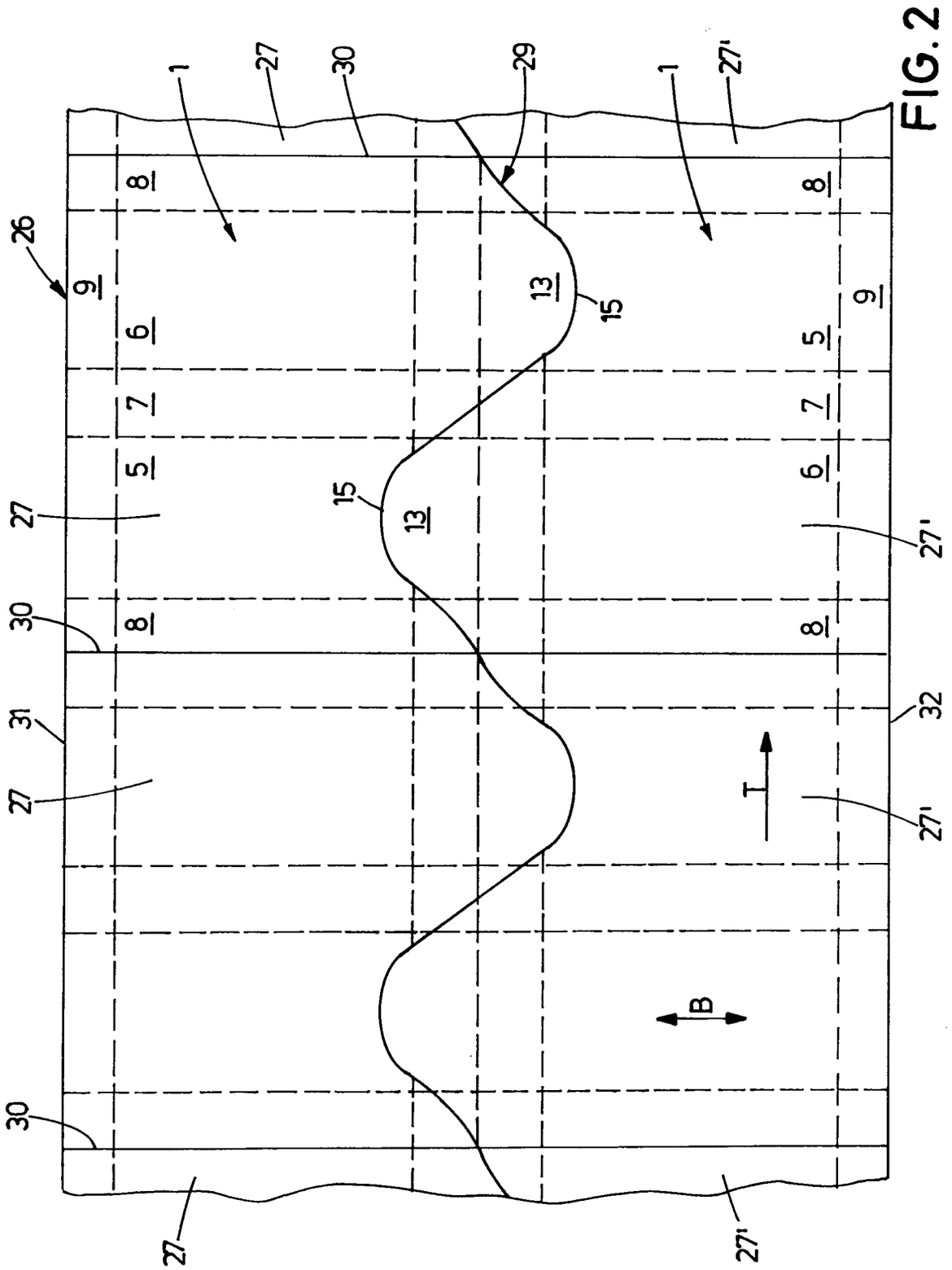
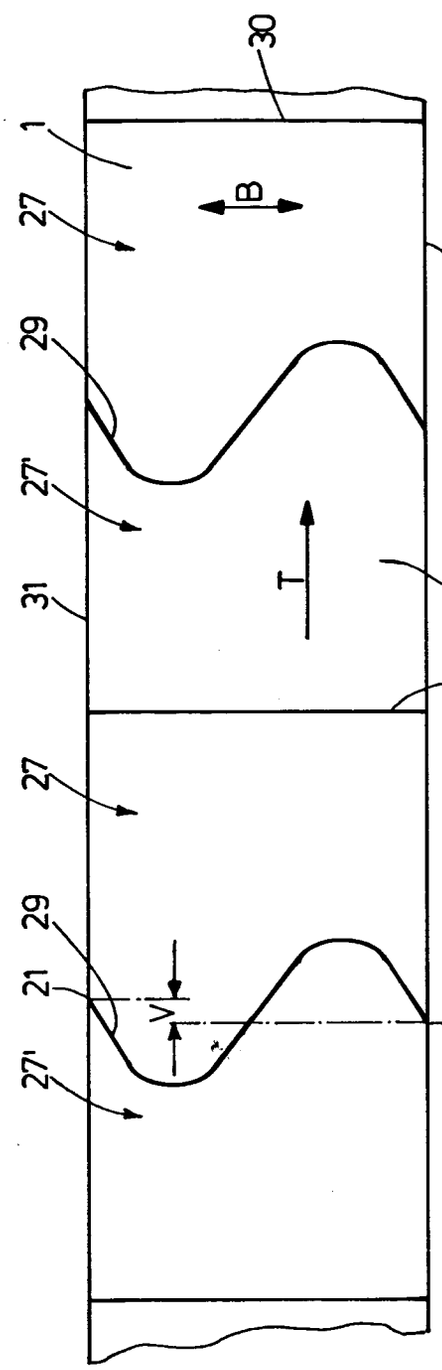


FIG. 2


30
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27
B
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T
31
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21
V
20
27'

FIG. 4

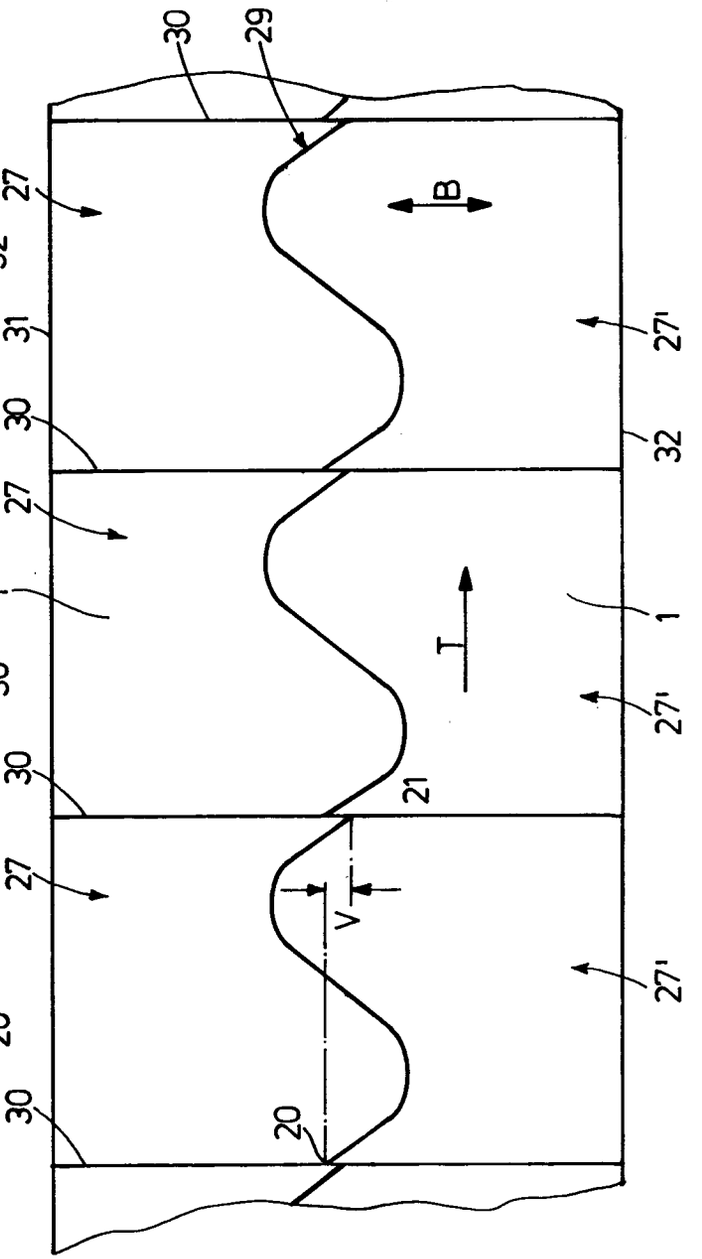
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FIG. 3

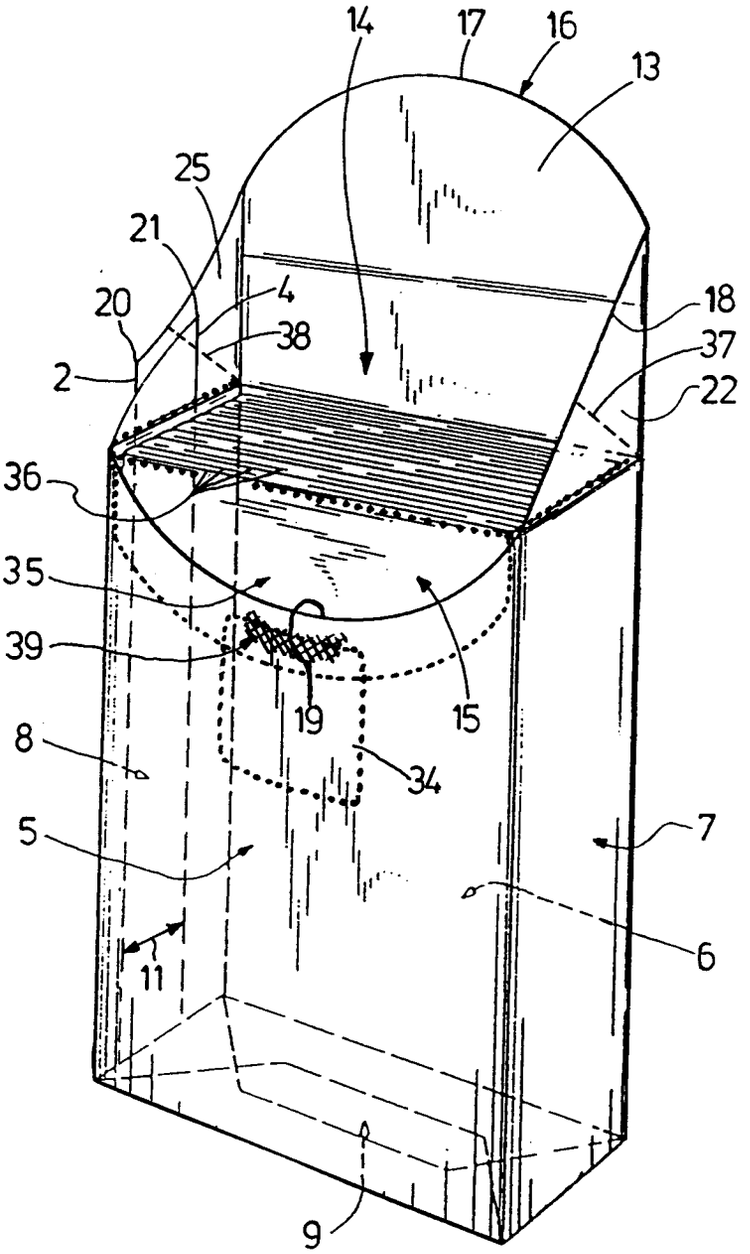
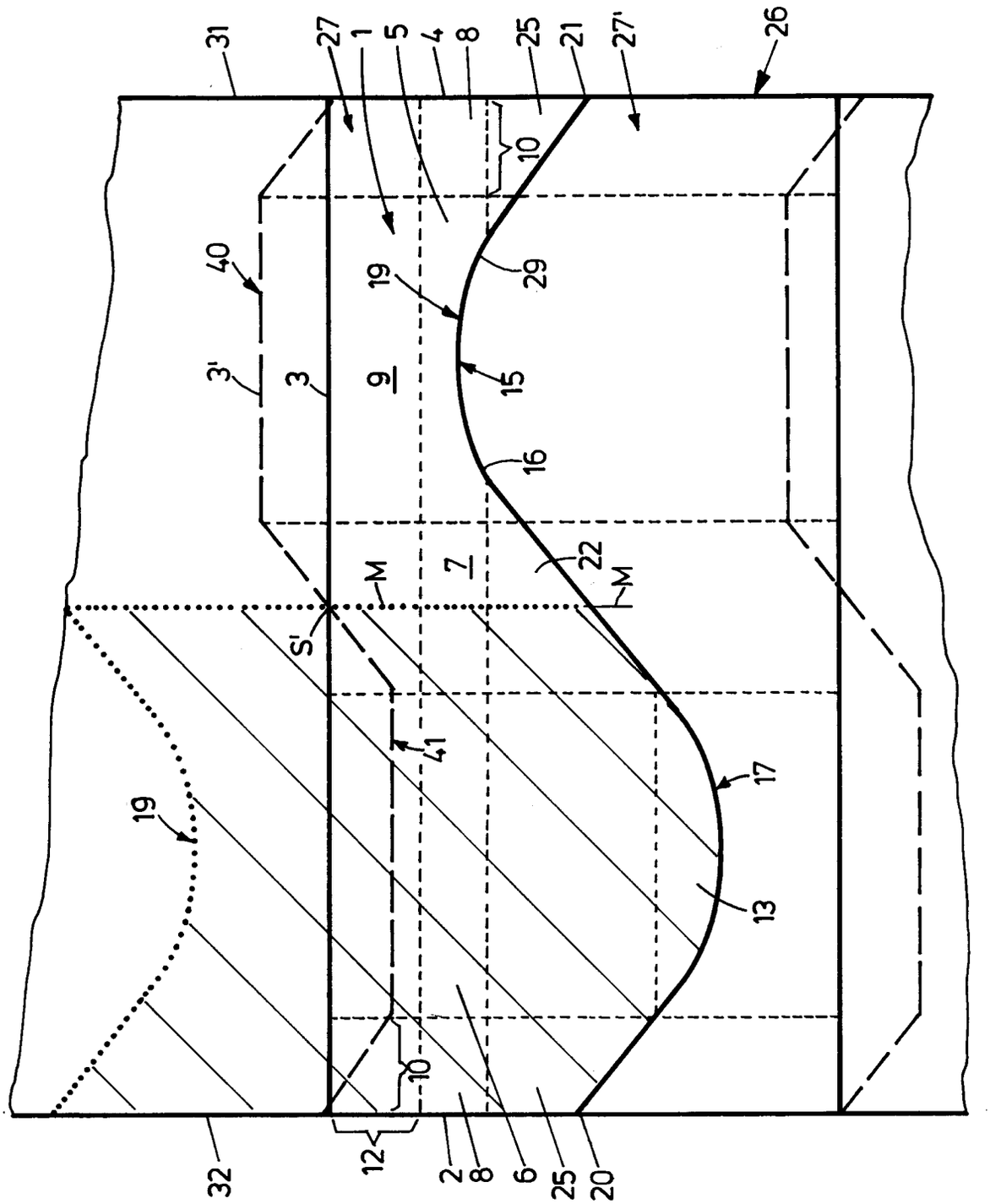


FIG.5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15
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22
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17
13
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12
32
2
8
6
25
20

FIG.6

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 10 7382

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	DE-U-91 09 814 (VP-SCHICKEDANZ) * the whole document, especially page 5, lines 15-17 *	1,2,4,5	B65D83/08 B65D5/66
Y		6-9	

Y	EP-A-0 507 112 (FOCKE & CO.) * figure 3 *	6	
A		1	

D,Y	DE-C-33 24 490 (VEREINIGTE PAPIERWERKE SCHIKEDANZ & CO.) * column 4, line 34 - line 62; figures 1,5 *	7-9	
A		1	

A	EP-A-0 615 919 (FOCKE & CO.)		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	2 November 1995	Spettel, J

CATEGORY OF CITED DOCUMENTS

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