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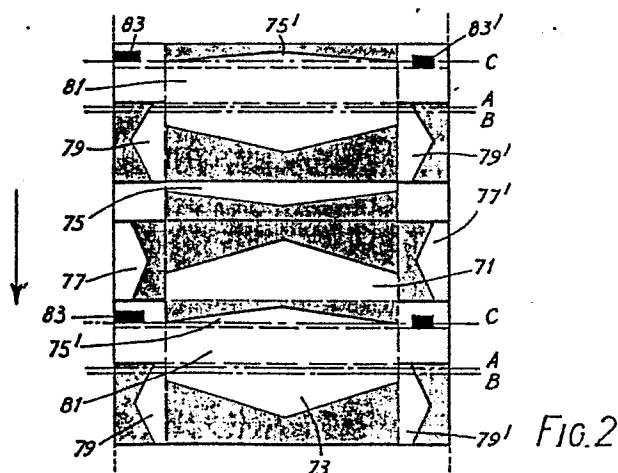
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(54) Bundle wrap blank.

(57) A blank for a bundle wrap is provided which may be used to wrap bundles of packs of cigarettes in any of several automatic bundle wrapping machines. The blank comprises areas of design corresponding to the top (71) bottom (73) and side (75,75') walls of the wrap bundle, they further comprise two pairs of areas (77,77') and (79,79') corresponding to the two end walls of the wrapped bundle. The design on ones of the pairs of areas corresponding to the end walls of the wrapped bundle is reversed relative to the orientation of design on the other such area.



BUNDLE WRAP BLANK

The present invention relates to a bundle wrap blank, that is a sheet of paper or other wrapping material for wrapping, for example, a bundle of packs of cigarettes.

Cigarettes are usually distributed in bundles containing 200 cigarettes, in ten packs each of 20 cigarettes. These bundles are wrapped in paper or other wrapping material usually carrying the cigarette manufacturer's name along with the cigarette brand name and other information. The bundles of cigarette packs are wrapped in automatic wrapping machines fed with wrapping material from a continuous supply of blanks.

Several different automatic bundle wrapping machines are available. These different machines employ blanks of various sizes and layout which are cut and folded by the machine to provide the finished bundle wrapper around the bundle.

Examples of the different designs of blank employed at present in different bundle wrapping machines are shown in Figures 1a, 1b and 1c. It will be seen that each blank comprises discrete areas corresponding to, in the wrapped bundle, the top wall (11;31;51), the bottom wall (13;33;53), the two opposed side walls (15,15';35,35';55,55'), and end walls (17,17';37,37';57,57'). In addition to the visible wall portions, the blanks also comprise underlaps (19;39;59) which in the finished bundle wrapper underlie one of the walls and are secured thereto by adhesive. Further areas of the blank, are numbered in Figures 1a, 1b and 1c, serve to close the end walls of the wrapped bundle, and are secured in place by the end wall portions of the blank (17,17';37,37';57,57'), which are secured in place with adhesive.

The blanks are introduced into the automatic bundle wrapping machines in the direction of the arrows, where they are cut along the lines shown solid in Figures 1a, 1b and 1c and folded along the lines shown dashed around the bundle of packs of cigarettes to form

a wrapped bundle. Adhesive is applied to the underlap and the end wall areas during folding.

It will be apparent that, if a cigarette manufacture employs several different automatic bundle wrapping machines, he must obtain and keep a stock of several different designs of blanks for each brand of cigarette. It is at present impossible to use a blank designed for one machine in another, with consequent inflexibility in the event of a shut down of one type of automatic bundle wrapping machine.

In consequence, the present inventor desired to provide a blank for wrapping bundles which could be used in any one of several types of automatic bundle wrapping machine.

According to the invention there is provided a blank which may be used in any of several automatic bundle wrapping machines for wrapping bundles of individual packs, such as cigarette packs, the wrapped bundles having a top wall, a bottom wall, a pair of opposed side walls and a pair of opposed end walls, the blank comprising discrete areas of design corresponding to each of the walls of the wrapped bundle characterised in that the blank comprises two discrete end wall areas of design corresponding to each end wall of the wrapped bundle whereby the blank can be cut and folded so that either one or the other of said end wall areas appears on the end wall of the wrapped bundle.

It is preferred that the orientation of the design of one of the said discrete end wall areas is reversed relative to the orientation of the design on the other end wall area.

In a second aspect of the invention there is provided a blank which may be used in any of several automatic bundle wrapping machines for wrapping bundles of individual packs, such as cigarette packs, the wrapped bundles having a top wall, a bottom wall, a pair of opposed side walls and a pair of opposed end walls, characterised in that the blank comprises two end wall areas corresponding to each end

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wall of the wrapped bundle, each of said end wall areas carrying a design, the orientation of the design on one end wall area being reversed relative to the orientation of the design on the other whereby the blank can be cut and folded so that either one of said areas or the other appears on the end wall of the wrapped bundle.

It is particularly preferred that the orientation of the design on each member of the pairs of end wall areas relative to the orientation of the design on the other member of the pair and to the designs on the side wall areas is such that, in the wrapped bundle, the design appears on both the end walls and the side walls in the same orientation.

Advantageously, the design elements comprised the designs on the wall areas are dimensioned and spaced apart from each other such that, when the blank is folded by any of the said automatic bundle wrapping machines, the folds do not impinge upon the design elements.

Also advantageously, the blank carries optical sensor activating marks in positions corresponding to the optical sensors on each of several automatic bundle machines.

The invention will be further described, by way of example, with reference to the drawings in which:

Figures 1a, 1b and 1c show a single repeat of prior art blanks, each for use in a single type of automatic bundle wrapping machine;

Figure 2 shows a single repeat of a blank according to a first preferred embodiment of the present invention, and the beginning of the next repeat;

Figure 3 shows a single repeat of a blank according to a second preferred embodiment of the present invention, and the beginning of the next repeat; and

Figure 4 shows a single repeat of a blank according to a third embodiment of the invention, and the beginning of the next repeat.

The prior art blanks of Figures 1a, 1b and 1c have already been

discussed. The blank according to the embodiments of the invention shown in the drawing all comprise areas corresponding to the top wall (71;91;111), the bottom wall (73;93;113) and the side walls (75,75';95,95';115,115') of the wrapped bundle. These areas are defined by the printed designs, such as that shown in the drawings associated with the brand of cigarette contained in the bundle, which will appear on each wall of the wrapped bundle.

Blanks of the invention also comprise two pairs of areas (77,77' and 79,79';97,97' and 99,99';117,117' and 119,119') corresponding to the pair of end walls of the wrapped bundle. The first pair of end wall areas (77,77';97,97';117,117') are each adjacent a respective end of the top wall area (71;91;111) and the second pair (79,79';99,99';119,119') are each adjacent a respective end of the bottom wall area (73;93;113).

An underlap (81;101;121) is also provided on the blank, which is, in the wrapped bundle, affixed under a side wall (75';95';115') by adhesive in some machines and under the bottom wall (73;93;113) in others. The remainder of the blank is composed of areas (unnumbered) which, in the wrapped bundle, are folded to close off the ends of the bundle, in a conventional manner, and are held in place by whichever pair of end wall areas (77,77' or 79,79';97,97' or 99,99';117,117' or 119,119') is employed to form the end walls of the bundle.

In automatic bundle wrapping machines, cutting and folding is activated by the response of an optical sensor mounted on the machine to marks on the blanks. These are indicated in Figures 1a, 1b and 1c by the reference numerals 21,41 and 61 respectively. Blanks according to the invention may be provided with several such marks (83,83';103,103';123,123') in positions corresponding to the positions of the optical sensors on the machines with which the blank is to be used. Alternatively, a single mark may be provided on each blank, and the position of the optical sensors on the automatic bundling wrapping machines adjusted accordingly.

In use, a reel composed of successive blanks supplies blanks to the automatic bundle wrapping machine in the direction of the arrow in Figures 2,3 and 4. The chain lines A, B and C in Figures 2,3 and 4 show where the blank is cut by the machine from the preceding and the following blanks when it is used with the machine normally supplied with the blank of Figure 1a, 1b and 1c respectively.

Again dependent upon which machine the blank of Figures 2,3 or 4 is used with, either the first pair of end wall areas (77,77';97,97';117,117') or the second pair (79,79';99,99';119,119') are cut along the appropriate solid lines in Figures 2,3 or 4. The blank is then folded in a conventional manner by the automatic bundle wrapping machine to wrap a bundle of cigarettes supplied to the machine in a conventional manner.

In order that the orientation of the design appearing on the end walls of the wrapped bundle is the same whether the first pair (77,77';97,97') or the second pair (79,79';99,99') of end wall areas are used to form the visible end walls, the orientation of the design on the first pair (77,77';97,97') is reversed in the respect to that in the second pair (79,79';99,99'). It is particularly preferred that, in the wrapped bundle, the designs appearing on the side walls and the end walls all have the same orientation. To achieve this, a blank of the type shown in Figures 2 and 3 is used. In this type of blank, the orientation of the design on each member of the pairs (77 and 77', 79 and 79'; 97 and 97', 99 and 99') of end wall areas is reversed with respect to the orientation of the design on the other member of the pair. The orientation of the design on the side wall areas (75,75';95,95') is chosen to conform to the orientation of the end wall designs, as is often done in conventional blanks. It will be seen that the orientation of the design on the end wall (77,77' and 79,79'; 97,97' and 99,99') and side wall (75,75';95,95') areas relative to the orientation of the design on the top wall (71,91) and bottom wall (73,93) areas is reversed between the blank of Figure 2 and that of Figure 3. The layout of the blank of Figure 2 is particularly suited to designs in which the cut line should lie toward the bottom of the design in

order that the matching of the overlap portion is made simpler. The blank of Figure 3 is best suited to a design in which the cut line C should fall toward the top of the design. The design employed in the drawings would normally be used with the layout of Figure 2.

The blank of Figure 4 is conveniently used in cases in which the orientation of the design is of less importance. It will be noted whichever pair of end wall areas (117,117' or 119,119') are used to form the end walls, the orientation of the design of the end walls is the same relative to the orientation of the design on the side and top and bottom walls. However, one side wall and one end wall carry the design orientation whilst the other side wall and end wall carry it in the reverse orientation. Similarly, the design on the top wall is in the reverse orientation to that on the bottom wall.

Normally, only one of the three blanks shown in Figures 2,3 and 4 will be used for each design, according to the requirements imposed by the appearance of the design. Whichever blank is employed, however, the appearance of the wrapped bundle will be the same whichever machine the blank is used in.

Since, depending upon which type of automatic blank wrapping machine the blank is to be used with, folds will be made in slightly different places on the blank, the design element, that is the parts of the design which are not background, such as a cigarette brand name, should be suitably small and suitably spaced from neighbouring design elements that it remains wholly on the wall upon which it is intended to appear, whichever type of machine the blank is used with. This may involve a slight reduction in the size of the design element compared with that on conventional blanks.

By using a single design of blank in several types of automatic bundle wrapping machines, as is possible with the blank of the present invention, significant savings in the cost of providing bundle wrapping blanks, may be made.

CLAIMS

1. A blank which may be used in any of several automatic bundle wrapping machines for wrapping bundles of individual packs, the wrapped bundles having a top wall, a bottom wall, a pair of opposed side walls and a pair of opposed end walls, the blank comprising discrete areas of design corresponding to each of the walls of the wrapped bundle characterised in that the blank comprises two discrete end wall areas of design corresponding to each end wall of the wrapped bundle whereby the blank can be cut and folded so that either one or the other of said end wall areas appears on the end wall of the wrapped bundle.
2. A blank according to claim 1 in which the orientation of the design on one of the said two discrete end wall areas of design corresponding to each end wall of the wrapped bundle is reversed relative to the orientation of the design on the other discrete end wall area of design.
3. A blank which may be used in any of several automatic bundle wrapping machines for wrapping bundles of individual packs, the wrapped bundles having a top wall, a bottom wall, a pair of opposed side walls and a pair of opposed end walls, characterised in that the blank comprises two end wall areas corresponding to each end wall of the wrapped bundle, each of said end wall areas carrying a design, the orientation of the design on one end wall area being reversed relative to the orientation of the design on the other whereby the blank can be cut and folded so that either one or the other of said areas appears on the end wall of the wrapped bundle.
4. A blank according to claim 2 or 3 in which the orientation of the design on each member of the pairs of end wall areas relative to the orientation of the design on the other member of the pair and to the designs on the side wall areas is such that, in the wrapped bundle, the design appears on both the end walls and the side walls in the same orientation.

5. A blank according to any preceding claim in which the design elements comprised in the designs on the wall areas are dimensioned and spaced apart from each other such that, when folded by any of the said bundle wrapping machines, the fold lines do not impinge upon the design elements.
6. A blank according to any preceding claim in which the blank carries optical sensor activating marks in positions corresponding to the optical sensors on each of several automatic bundling machines.
7. A blank substantially as described with reference to any one of Figures 2,3 and 4 of the drawings.

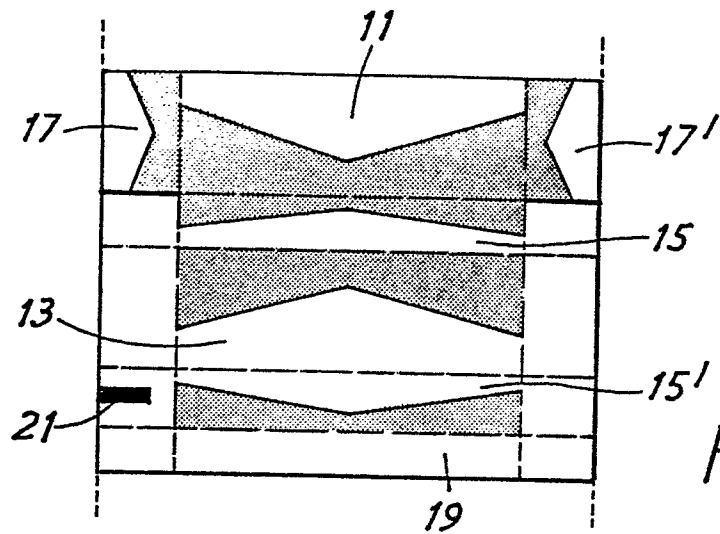


FIG. 1a

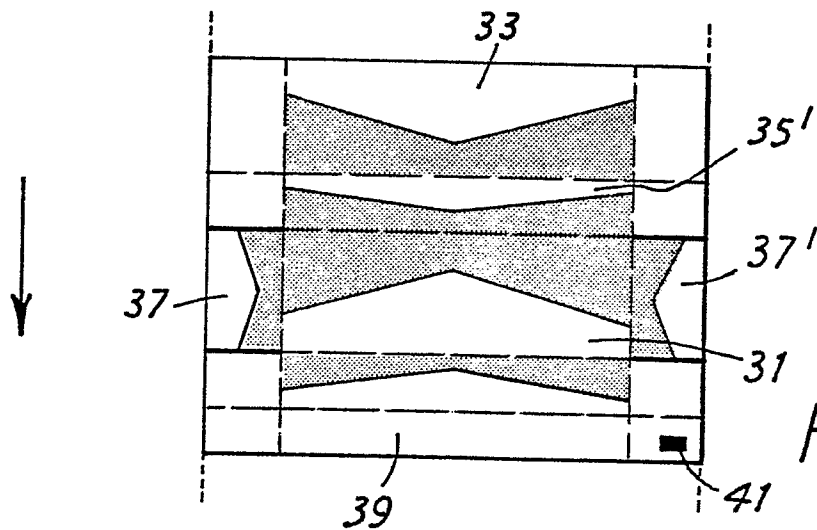


FIG. 1b

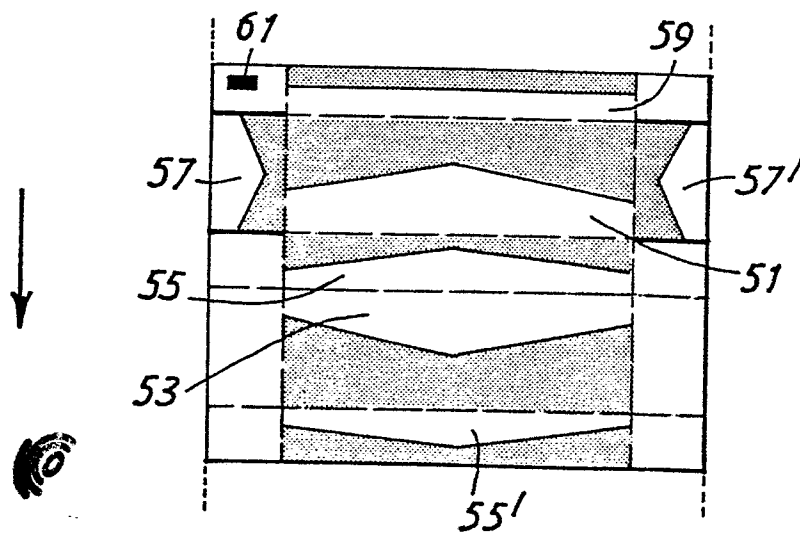
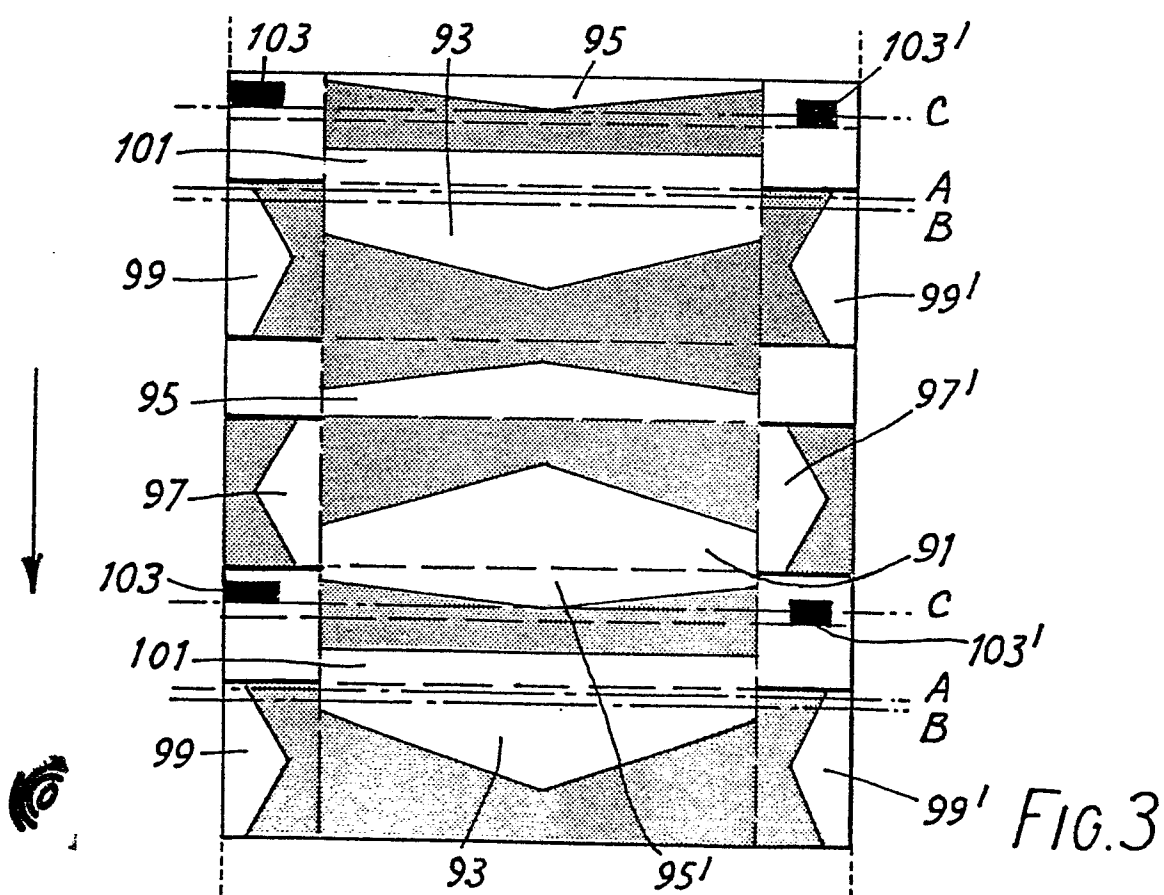
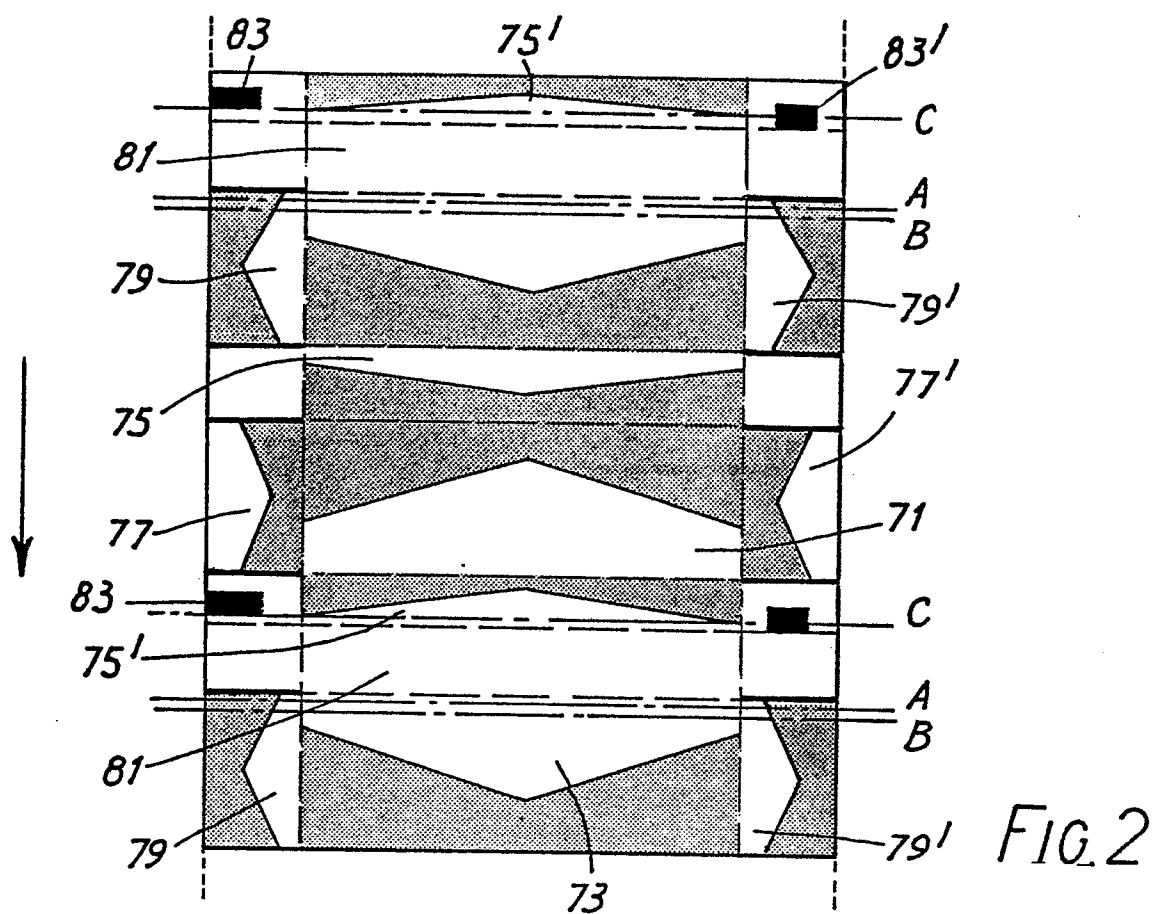


FIG. 1c

2/3



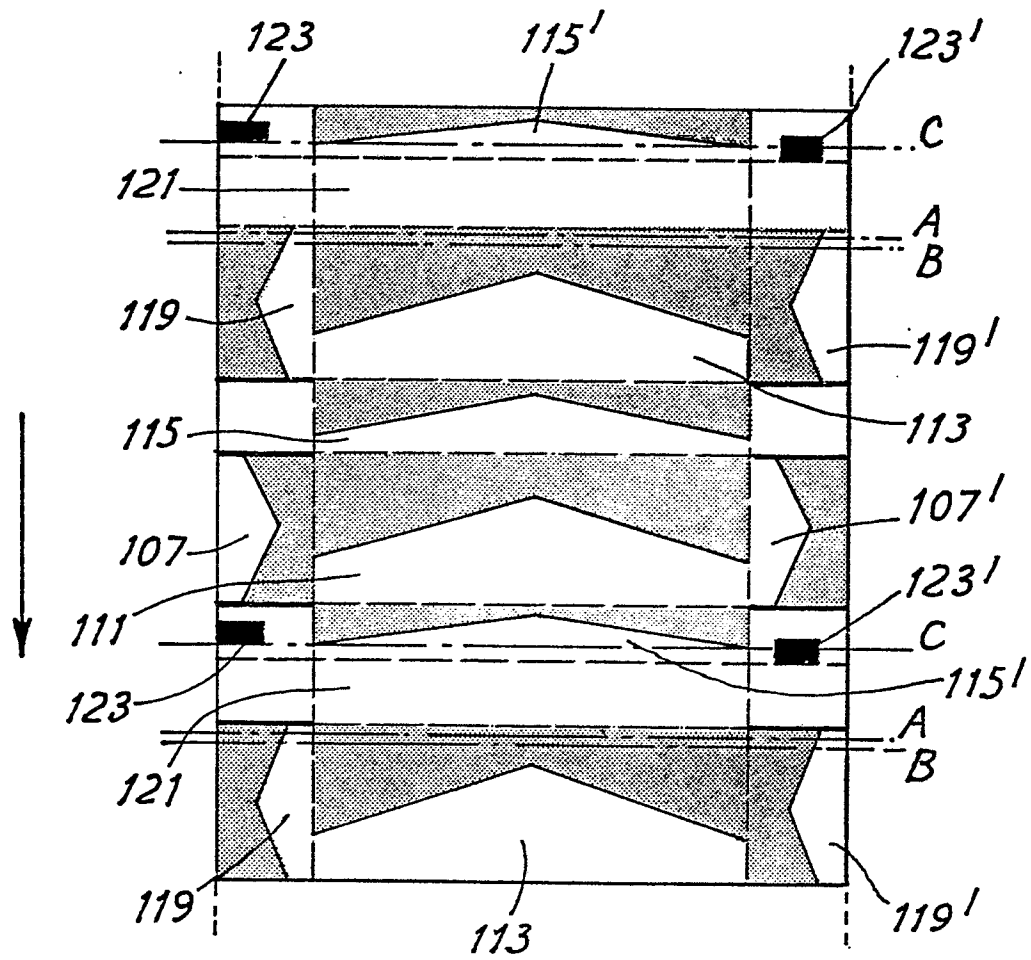


FIG. 4



EP 86 30 9521

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. 4)
A	FR-A-2 239 386 (GEISER) * Page 1, line 37 - page 4, line 25; figures 1-7 *	1-3	B 65 D 5/42 B 65 D 65/22
A	US-A-1 556 056 (WEEKS)		
A	BE-A- 453 191 (SAELS)		
A	US-A-3 027 263 (WANAMAKER)		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 65 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17-03-1987	Examiner MARTENS L.G.R.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			