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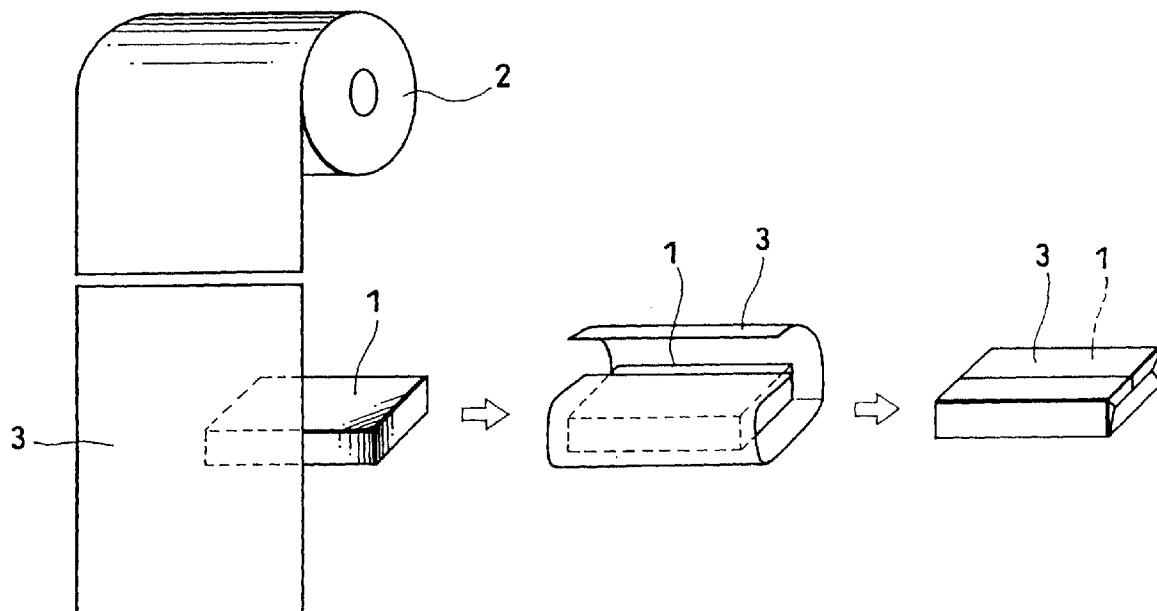
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(54) Wrapping structure by overlap film

(57) A peeling condition of an opening mouth portion (6) can be appropriately kept in an overlap film (3) which is used for wrapping an object to be wrapped, ends of which are overlapped with each other and sealed, and which comprises the opening mouth portion (6) formed by mat print at a part of the sealing portion (4), thereby

preventing the opening mouth portion (6) from being hooked unexpectedly by anything so as to be peeled out during distribution and so on. A weak bonding portion (9), for example in character form, by dot print or non-print is provided at a part of mat printed portion of the opening mouth portion (6).

FIG. 1



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Description**BACKGROUND OF THE INVENTION****Field of the Invention:**

The present invention relates to a wrapping structure for wrapping an object to be wrapped such as for example a tape cassette, a disk cassette and the like by an overlap film such that the overlap film can be opened easily, and more particularly to a structure of its opening portion.

Description of the Related Art:

A box-shaped object to be wrapped such as, for example, a tape cassette, a disk cassette and the like is wrapped by means of an automatic wrapping machine as shown in FIG. 1.

That is, referring to FIG. 1, reference numeral 1 denotes a box-shaped object to be wrapped such as a tape cassette, a disk cassette and the like, and reference numeral 2 denotes a film roll formed by winding an overlap film made of heat shrink, thermal bonding type PP (polypropylene). From this film roll 2, a predetermined length of an overlap film 3 is cut out and the object 1 to be wrapped is wrapped in a so-called caramel wrapping style by means of the overlap film 3.

In the automatic overlapping machine, the object 1 to be wrapped is wrapped by means of the overlap film 3 and then an overlap area at ends of the overlap film is sealed by heat treatment (heat seal).

Although generally the overlap film for wrapping the object to be wrapped is conventionally provided with a cutting tape for allowing smooth opening, recently an overlap film wrapping structure which does not require this cutting tape has been proposed (e.g., Japanese Patent Laid-open Application No. 8-104360).

FIG. 2 shows an example of the wrapping structure by an overlap film which does not require this cutting film.

The overlap film 3 is a film having heat shrink, thermal bonding properties, made of PP or the like ordinarily used and is employed to wrap the box shaped object 1 to be wrapped such as a tape cassette, a disk cassette and the like in the so-called caramel wrapping style.

The overlap film 3 is heat-sealed at a portion where the ends thereof are overlapped with each other at the front of the object 1 to be wrapped (sealing portion 4 indicated by hatching) and further is heat-sealed at a portion where the ends thereof are overlapped with each other at the sides of the object 1 to be wrapped (sealing portion 5 indicated by hatching), so that the object 1 to be wrapped is wrapped in a sealed condition.

The wrapping structure of this overlap film 3, as shown in FIG. 2 and FIG. 3, has an opening mouth portion 6 at a part of the sealing portion 4 on the front side thereof.

That is, the sealing portion 4 comprises bonding portions 4a by heat sealing and the opening mouth portion 6 formed in the center between the bonding portions 4a and has such a structure that when the overlap film 5 is opened, the sealing portion 4 is peeled off by hooking the opening mouth portion 6 with the nail or the like at a fingertip.

The opening mouth portion 6 is formed by performing a mat print of an arrow shape on an inner surface 10 (sealing surface) of the overlap film which overlaps on the upper side at the sealing portion 14.

That is, by performing a mat print 7 on the sealing side surface of the overlap film 3 as shown in FIG. 5, this mat print 7 portion loses heat sealing performance 15 (although those portions which are not printed have unimpaired heat sealing performance), so that printed portion serves as a non-bonding portion.

The opening mouth portion 6 formed by the mat print is structured so as to be peeled up as shown in 20 FIG. 3 and FIG. 4 by heat shrink at the time of heat treatment. When opening the overlap film, the nail or the like at a fingertip is hooked on the peeled opening mouth portion 6 as shown in FIG. 6 so as to peel off the sealing portion 4, so that the overlap film 3 can be removed easily.

However, in the conventional overlap film wrapping structure, because the opening mouth portion 6 is not sealed at all, it is peeled largely if it is subjected to heat shrink.

If the peeling of the opening mouth portion 6 is so 30 large, there is a fear that the opening mouth portion 6 may be hooked by anything so that the sealing portion 4 is peeled off unexpectedly during distribution or display on a counter and further its appearance is unaesthetic.

SUMMARY OF THE INVENTION

In view of the above considerations, it is an object 40 of the present invention to provide an overlap film wrapping structure in which an opening mouth portion is appropriately peeled to solve the above problem.

According to the present invention, in an overlap film which is used for wrapping an object to be wrapped 45 and ends of which are overlapped with each other and sealed, and in which an opening mouth portion is provided at a part of a sealing portion by a mat print, there is provided a weak bonding portion formed by dot print or non-print at a part of the opening mouth portion.

According to this structure, the opening mouth portion can be opened easily and kept to be peeled appropriately. Consequently, there is little fear that the opening mouth portion may be hooked and the sealing portion peeled out during distribution or the like, and the 50 appearance is improved.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an explanatory view for explaining wrapping processes by an overlap film;
 FIG. 2 is a perspective view showing a known wrapping structure by an overlap film;
 FIG. 3 is a plan view of a major part (sealing portion) of the overlap film according to the prior art;
 FIG. 4 is a cross-sectional view of a major part (opening mouth portion) of the overlap film according to the prior art;
 FIG. 5 is an explanatory view for print (mat print) on the overlap film;
 FIG. 6 is an explanatory view of opening the overlap film;
 FIG. 7 is a perspective view showing a preferred embodiment of a wrapping structure by an overlap film according to the present invention;
 FIG. 8 is a plan view of a major part (sealing portion) of the overlap film according to the present invention;
 FIG. 9 is a cross-sectional view of a major part (opening mouth portion) of the overlap film according to the present invention; and
 FIG. 10 is an explanatory view of print (mat print, dot print) on the overlap film according to the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Hereinafter, an embodiment of the present invention will be described in detail with reference to the accompanying drawings.

FIG. 7 shows a preferred embodiment of the overlap film wrapping structure according to the present invention. A basic wrapping structure in the embodiment is the same as the above described conventional example.

An overlap film 3 is a film having heat shrink, thermal bonding properties made of PP as used ordinarily, or the like, and is employed to wrap a box-shaped object 1 to be wrapped such as a tape cassette, a disk cassette or the like in a so-called caramel wrapping style.

The overlap film 3 is heat-sealed at a portion where ends of the overlap film 3 are overlapped with each other at the front of the object 1 to be wrapped (sealing portion 4 indicated by hatching) and further is heat-sealed at a portion where side ends of the overlap film 3 are bent and overlapped with each other at the sides of the object 1 to be wrapped (sealing portion 5 indicated by hatching). Consequently, the object 1 to be wrapped is wrapped in a sealing condition.

As evident from FIGS. 7, 8, the wrapping structure by the overlap film 3 has an opening mouth portion 6 at a part of the sealing portion 4 on the front of the object 1 to be wrapped.

That is, the sealing portion 4 has such a structure that: it comprises bonding portions 4a which are bonded

by heat sealing and the opening mouth portion 6 formed in the center between the bonding portions 4a; and when the overlap film 3 is opened, the sealing portion 4 is peeled by hooking the opening mouth portion 6 with the nail or the like at a fingertip.

This opening mouth portion 6 is formed by performing a mat print in an arrow shape on an inner surface (sealing surface) of the overlap film which overlaps on the upper side at the sealing portion 4.

That is, by performing a mat print 7 on the sealing surface of the overlap film 3 as shown in FIG. 10, this mat print 7 portion loses heat sealing performance completely (although portions which are not printed retain their heat sealing performance), so that printed portion 15 serves as a non-bonding portion.

The opening mouth portion 6 formed by mat print is structured so as to be peeled up by heat shrink at the time of heat treatment. When opening this overlap film, the nail or the like at a fingertip is hooked on the peeled 20 opening mouth portion 6 so as to peel out the sealing portion 4, so that the overlap film 3 can be removed easily.

Although conventionally, there has occurred such a problem as described above because the peeling of the 25 opening mouth portion 6 is large, according to the present invention a special formation print is made so as to keep an appropriate peeling condition of the opening mouth portion 6.

That is, in the present example as evident from FIG. 30 8, characters "OPEN" are printed substantially in the center of the mat print portion of the opening mouth portion 6 of the arrow shape, and this character portion is formed by dot printing.

This dot printing refers to a printing style in which 35 print is made in a dot pattern formation using print varnish. By performing this dot printing 8 on the sealing surface of the overlap film 3 as shown in FIG. 10, the overlap film 3 is partially heat-sealed through gaps between the dots. That is, the portion of the dot print 8 has a heat 40 sealing performance intermediate between the non printed portion and the mat printed portion (half seal).

Thus, the "OPEN" character portion formed by this dot print acts as a weak bonding portion 9 by the half seal.

Because the "OPEN" character portion of the opening mouth portion 6 is the weak bonding portion 9, the opening mouth portion 6 is kept in appropriate peeling condition without being largely peeled, as shown in FIGS. 8, 9. This is evident if it is compared with the conventional example shown in FIGS. 3, 4.

When opening this film, it can be opened easily because the weak bonding portion 9 is easily peeled by lightly hooking the opening mouth portion 6 with the nail of the finger tip end or the like.

Although, in this embodiment, the "OPEN" character portion is the weak bonding portion 9 by dot print, it is also permissible to form the weak bonding portion 9 by making the "OPEN" character portion as a non-print-

ed portion (that is, the "OPEN" character portion is formed by printing it in a so-called mortise in mat print).

In this case, by forming the "OPEN" character portion in fine lines or in dotted lines, the weak bonding portion 9 having the same heat sealing performance as the dot print can be ensured.

Further, as evident from FIGS. 7, 8, in the wrapping structure of the present invention, weak bonding portions 10 are provided by dot printing on the right and left sides of the mat print portion of the arrow shape of the opening mouth portion 6 in the sealing portion 4.

Consequently, if the opening mouth portion 6 is hooked by the nail at the finger tip end or the like upon opening the overlap film, the weak bonding portions 10 are peeled easily, and then the bonding portions 4a are peeled continuously with this weak bonding portions 10. Thus, the overlap film can be opened more easily.

As described above, the new wrapping structure by the overlap film according to the present invention consists, in an overlap film which is used for wrapping an object to be wrapped, ends thereof being overlapped with each other and sealed, and an opening mouth portion being provided at a part of a sealing portion by the mat print, in providing a weak bonding portion by dot printing or non-print at a part of the opening mouth portion. As a result, the opening mouth portion can be opened easily and kept to be appropriately peeled. Thus, there is little fear that the sealing portion may be torn out unexpectedly because the opening mouth portion thereof is hooked during distribution or display on a counter, and furthermore appearance improves.

Further according to the preferred embodiment of the present invention, because the weak bonding portion on the opening mouth portion is formed in a character form, it is possible to recognise a position of the opening mouth portion clearly according to the characters upon opening the overlap film. Thus, it is easy to open the overlap film. Needless to say, this weak bonding portion may be formed, for example, as a graphic design or pattern such as an arrow or the like instead of the character form.

Still further, according to the preferred embodiment of the present invention, because the weak bonding portions by dot print are provided on both sides of the opening mouth portion, the opening procedure for the overlap film is further facilitated.

Having described a preferred embodiment of the present invention with reference to the accompanying drawings, it is to be understood that the present invention is not limited to the above-mentioned embodiment and that various changes and modifications can be effected therein by one skilled in the art without departing from the present invention as defined in the appended claims.

Claims

1. A wrapping structure by a overlap film (3) which is used for wrapping an object to be wrapped, ends of which are overlapped with each other and sealed and which comprises an opening mouth portion (6) provided at a part of a sealing portion by mat print, characterised by comprising:
a weak bonding portion (9) formed by dot print or non-print at a part of said opening mouth portion.
2. A wrapping structure by an overlap film according to claim 1, wherein said weak bonding portion (9) on said opening mouth portion is a character form.
3. A wrapping structure by an overlap film according to claim 1 or 2, wherein a weak bonding portion (10) by dot print is provided on both sides of said opening mouth portion (6).

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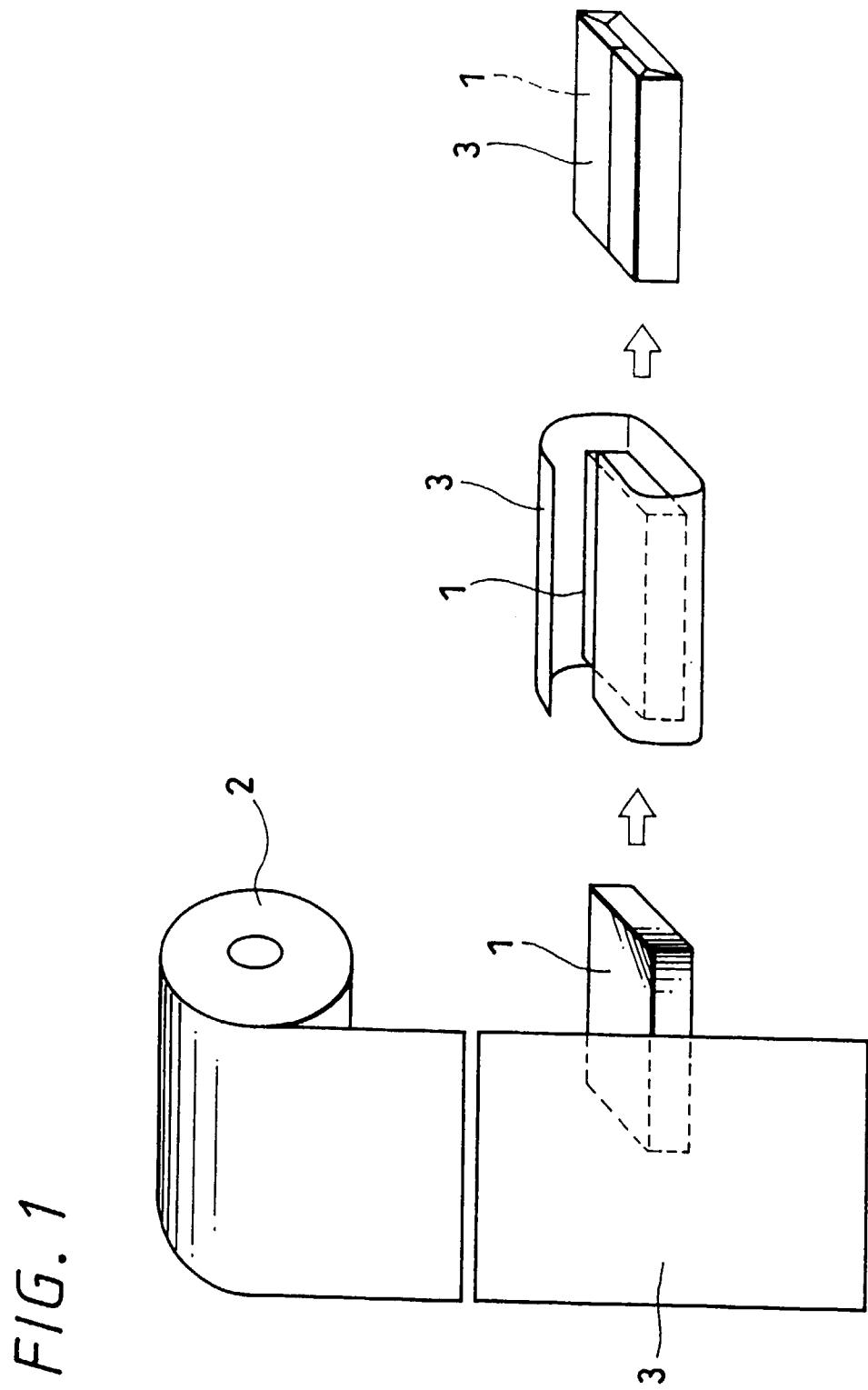


FIG. 2

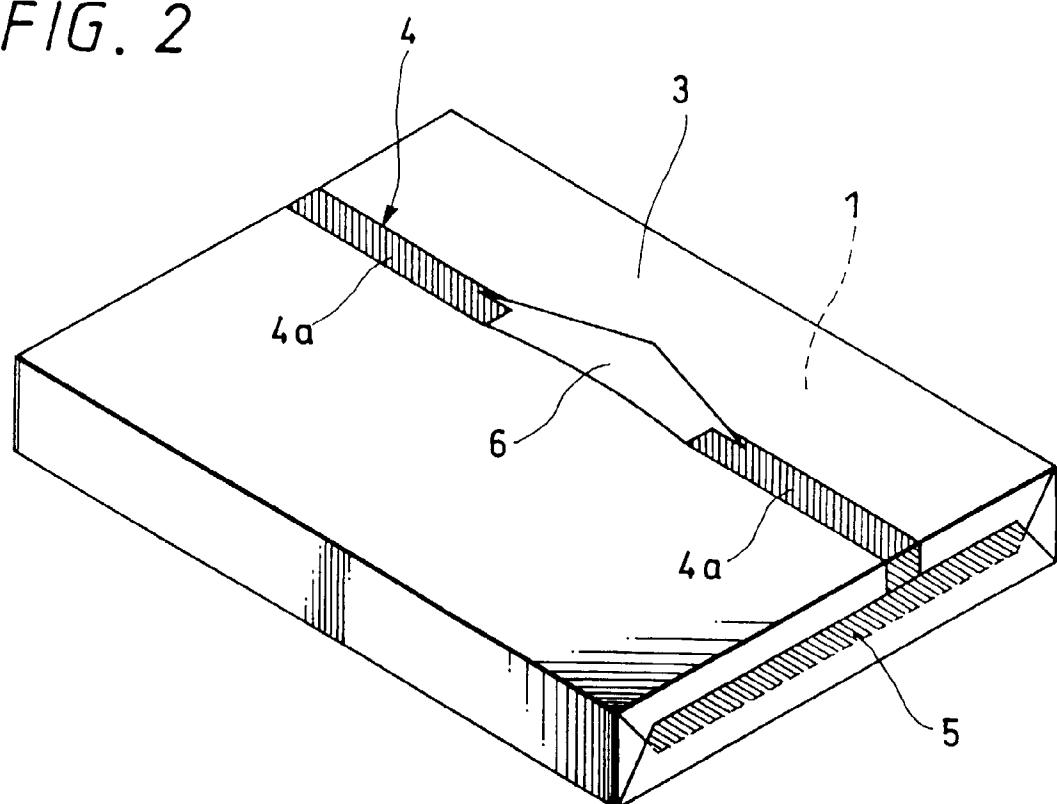


FIG. 3

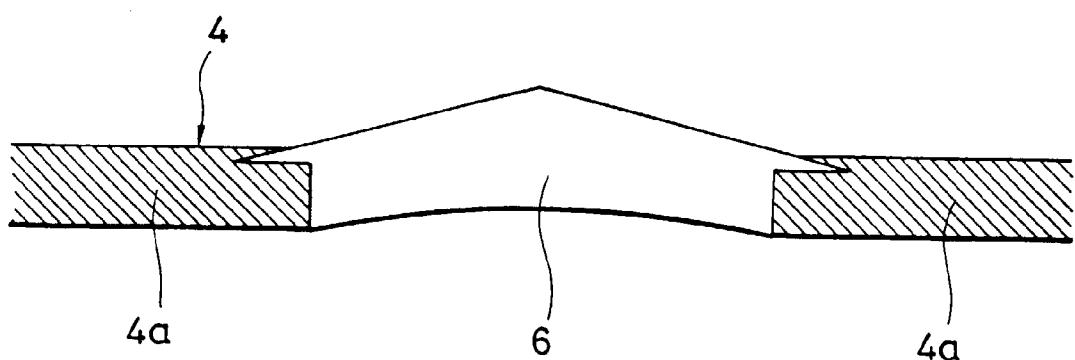


FIG. 4

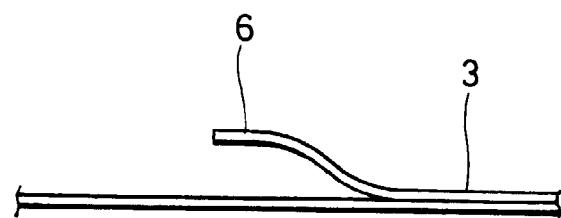


FIG. 5

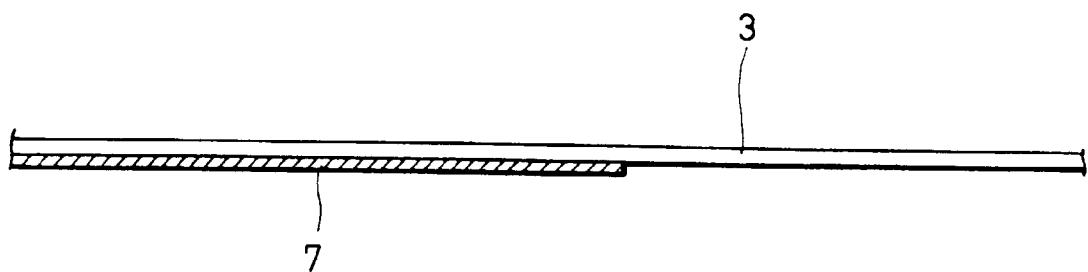


FIG. 6

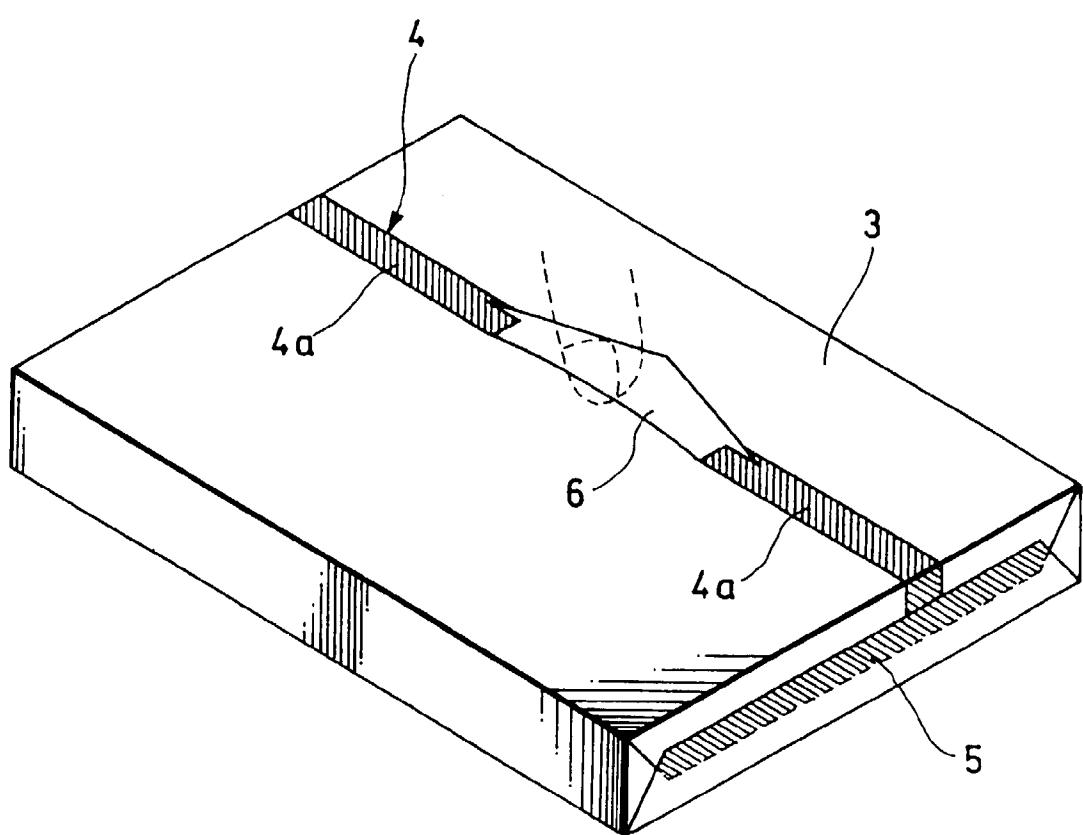


FIG. 7

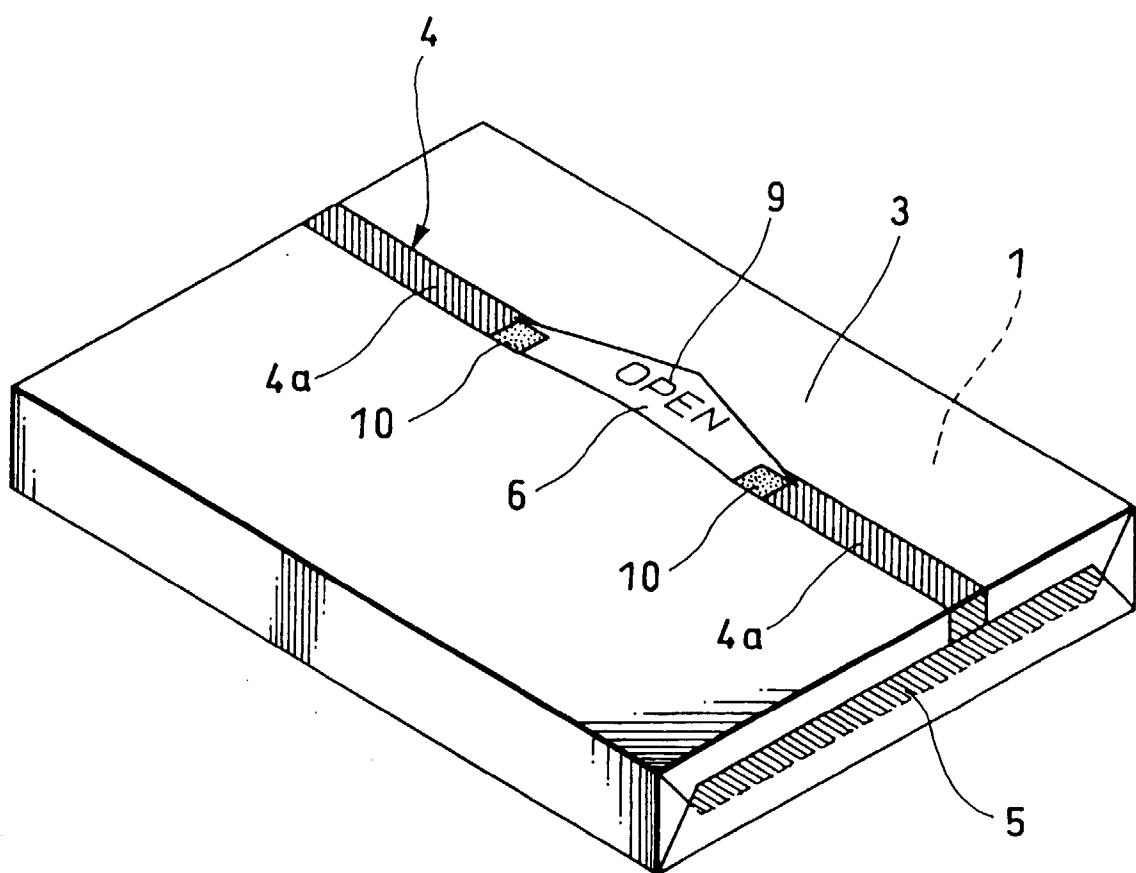


FIG. 8

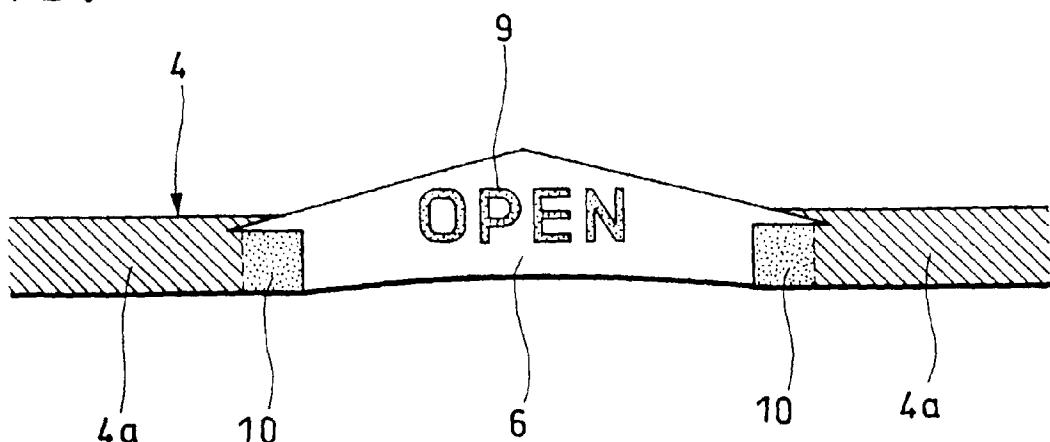


FIG. 9

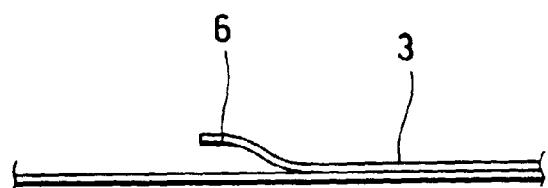
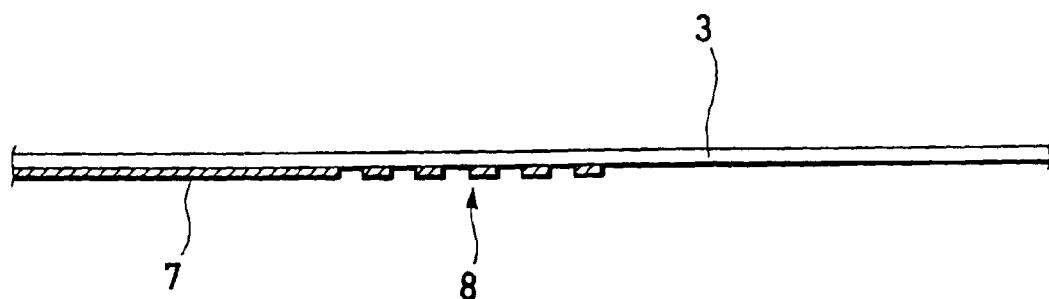


FIG. 10





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EUROPEAN SEARCH REPORT

Application Number
EP 97 40 2243

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	EP 0 577 509 A (SONY) * column 6, line 31 - column 7, line 59; figures 11-18 *	1-3	B65D75/58
P, X	GB 2 307 673 A (TDK) * page 5, line 2 - line 13 * * page 9, line 8 - page 13, line 17; figures 1-4,6 *	1-3	
D, A	FR 2 724 633 A (SONY) * page 8, line 3 - page 14, line 25; figures 1-7 * & JP 08 104 360 A (SONY)	1,3	
A	EP 0 627 362 A (FUJI) * the whole document *	1,3	
A	EP 0 614 822 A (FUJI) * column 33, line 29 - column 34, line 22; figures 37,38 *	1,3	
A	GB 2 262 078 A (TDK)		TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	GB 2 239 854 A (OKURA)		B65D
P, A	EP 0 734 966 A (VICTOR CY OF JAPAN)		
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	9 January 1998	Martens, L	
CATEGORY OF CITED DOCUMENTS		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	
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