

COMPACT DISC CLAMPING SLEEVE

Background of Invention

5 This invention relates to the field of packaging for compact discs, and more particularly to an inexpensive package for business-card sized, or larger, optical or compact discs which securely clamps such discs and prevents such discs from falling out of the package without significant risk of damage to the sensitive machine-readable surfaces of such discs.

10 Compact discs have been issued in a number of sizes and capacities. For example, mini-discs are available in the following sizes and capacities: 40 MB discs with dimensions of 80 mm x 58 mm; 45 MB discs with dimensions of 80 mm x 60 mm; 50 MB discs with dimensions of 80 mm x 62 mm; 60 MB discs with dimensions of 80 mm x 64 mm; 100 MB discs with dimensions of 80 mm x 68 mm; and 180 MB
15 discs with diameters of 80 mm. In addition, standard size discs hold approximately 700 MB with diameters of about 120 mm. Although packaging is available for such discs, there remains a need in the art for inexpensive packaging having the favorable characteristics of the present invention.

Summary of Invention

20 These characteristics are provided by a method for making a package for a compact disc and a package made thereby. The method makes use of a foldable sheet, most preferably formed from paper or paperboard, defining aligned first, second, third and fourth panels, the second and third panels lying between the first and fourth panels. The first panel is separated from the second panel by a first fold. The second
25 panel is separated from the third panel by second and third folds which cooperate to

define a first web portion. The third panel is separated from the fourth panel by fourth and fifth folds which cooperate to define a second web portion. In addition, the foldable sheet defines a closure tab extending from the third panel in a direction transverse to a direction along which one moves from the third to the second panel; and sixth and seventh folds cooperating to define a third web portion separating the closure tab from the third panel. The method comprises the steps of folding the foldable sheet along the first, second, third, fourth and fifth folds so that front surfaces of the first and fourth panels face each other; adhering the front surfaces of the first and fourth panels together; folding the foldable sheet along the sixth and seventh folds; and adhering the closure tab to the second panel. The order of the steps is not critical to the invention.

In accordance with an especially preferred method, the first, second and fourth panels are cut to form a detent for detachably securing the first and fourth panels in overlying relationship with respect to the second panel. Most preferably, this additional step comprises cutting one or more notches into a free edge defined by the first and fourth panels to form a locking tab and cutting a slot in the second panel for receiving the locking tab. It is within the contemplation of the invention to position the locking tab either at the center of the free edge or at any convenient position along that free edge. It likewise is within the contemplation of the invention to shape the locking tab and slot in any manner consistent with the object of detachably securing the first and fourth panels in overlying relationship with respect to the second panel. Alternatively, spots of adhesive or hook-and-loop material are affixed to one or more of the first, second and fourth panels to secure the first and fourth panels in overlying relationship with respect to the second panel.

Optionally, a notch or hole is cut into one of the second and third panels to facilitate removing the disc from the package.

Optionally, a printed insert consisting of a printable sheet of material which may have one or more folds is inserted into the package with the compact disc.

5 One advantage of the preferred package is that the arrangement of the package promotes the clamping of the disc in the package such that the disc does not readily fall out when the package is closed, that is, when the first and fourth panels are secured in overlying relationship with respect to the second panel. When the package is open, that is, when the first and fourth panels are loose, the first and second web
10 portions provide sufficient clearance such that the compact disc can be freely inserted into, and removed from, the package. Without wishing to be bound by any theory of operation, it is believed that the folding of the first and fourth panels along the first and fifth folds into overlying relationship against the second panel pulls the portion of the third panel near the fourth fold toward the disc, thereby compressing the disc
15 between the second and third panels. This compression constrains the disc from falling out of the package when the package is closed.

 Another advantage of the preferred package is that it is relatively inexpensive to manufacture, since it can be formed of paper, paperboard, or other inexpensive foldable sheet materials.

20 Another advantage of the invention is that exposed surfaces of the first, second, third and fourth panels can be printed on, providing a forum for displaying text, graphics or other information or promotional material associated with the disc and its source.

Therefore, it is one object of the invention to provide inexpensive packaging for compact discs. The invention will be further described in conjunction with the appended drawings and following detailed description.

Brief Description of Drawings

Fig. 1 is a perspective view of a closed package in accordance with the invention;

Fig. 2 is a perspective view of an open package in accordance with the invention;

Fig. 3 is a plan view of a blank for use in forming the package of Figs. 1 and 2;

Fig. 4 is a schematic view illustrating an especially preferred method of the present invention;

Figs. 5A, 5B and 5C are perspective views showing the closing of a preferred embodiment of the invention;

Fig. 6A is a perspective view of an alternative embodiment of a locking tab and slot in accordance with the invention; and

Fig. 6B is a perspective view of an embodiment of the present invention illustrating an alternative means for detachably closing the sleeve.

Description of Preferred Embodiments

Figs. 1 and 2 each show a package 10 in accordance with the present invention partially enclosing a disc 12.

Fig. 3 shows a foldable sheet 14 forming a blank for use in forming the package of Figs. 1 and 2 comprising a first panel 20, a second panel 22, a third panel

24 and a fourth panel 26. The first panel 20 is separated from the second panel 22 by a first fold 30. The second panel 22 is separated from the third panel 24 by a second fold 32 and a third fold 34. The third panel 24 is separated from the fourth panel 26 by a fourth fold 36 and a fifth fold 38. The second and third folds 32, 34 cooperate to
5 define a first web portion 40. The fourth and fifth folds 36, 38 cooperate to form a second web portion 42.

In addition, the foldable sheet 14 defines a closure tab 50 extending from the third panel 24 in a direction 54 transverse to a direction 52 along which one moves between the third panel 24 and the second panel 22. The foldable sheet 14 also
10 defines a sixth fold 56 and a seventh fold 58 cooperating to define a third web portion 60 separating the closure tab 50 from the third panel 24.

A preferred method for making the package 10 is illustrated in Fig. 4. (Note that the sheet 14 in Figure 4 is inverted from the position shown in Fig. 3.) The method comprises the following steps: folding the foldable sheet 14 along the first,
15 second, third, fourth and fifth folds 30, 32, 34, 36, 38 so that a front surface 70 of the first panel 20 and a front surface 72 of the fourth panel 26 face each other, and edge 94 of first panel 20 is aligned with edge 96 of fourth panel 26; adhering the faces 70, 72 of the first and fourth panels 20, 26 together, as by gluing; folding the foldable sheet 14 along the sixth and seventh folds 56, 58; and adhering the closure tab 50 to a
20 surface (preferably a surface facing third panel 24) of the second panel 22.

In accordance with an especially preferred method, and with reference to Figs. 2 and 4, one or more notches 80 and 82 (Fig. 2) are cut into a free edge 84 (Fig. 2) defined by the first and fourth panels 20, 26 (Fig. 4) to form a locking tab 86 (Fig. 2), and a slot 88 (Fig. 2) is cut in the second panel 22 (Fig. 4) for receiving the locking
25 tab 86 (Fig. 2).

To close the sleeve and secure a disc inserted between second panel 22 and third panel 24 from an end of the sleeve at edge 92 (Fig. 3), the adhered first and fourth panels are brought into overlying relationship with second panel 22, and locking tab 86 is inserted into slot 88. As shown in Figs. 5A, 5B and 5C, it is understood that as the adhered first and fourth panels 20 and 26 are brought into overlying relationship with second panel 22, a gap 23 between third panel 24 and second panel 22 is narrowed, applying a clamping pressure on disc 12 so that it will not be inadvertently dislodged from the sleeve. When the sleeve is opened, and the adhered first and fourth panels are lifted away from the second panel, the clamping pressure is eased and disc 12 may be removed from the end at edge 92. Tab 50, meanwhile, prevents disc 12 from falling out of or being removed from the sleeve from the end opposite edge 92.

In an especially preferred embodiment, a notch 90 (Fig. 3) is cut into the second panel 22 along edge 92 to facilitate removal of the compact disc 12 from the package 10 (Fig. 2) when the sleeve is opened. Alternatively, a hole or an elongated slot with rounded ends may be provided in second panel 22, allowing for access to the central hole of the compact disc with the user's finger or the end of a pen or pencil, in order to slide the compact disc out of the package.

Further with respect to Fig. 3, certain dimensions have been established as particularly suitable for various aspects of the package for various size compact discs. In Fig. 3, the first through fourth panels have a length "a" along direction 54. The first and second panels have a width "b" along direction 52, and the third and fourth panels have a width "c" along the same direction. The webs 40 and 42 both have a width "d." Tab 50 has a length along direction 52 of "e" and a width along direction 54 of "f", and the web 60 has a width along direction 54 of "g." The following

dimensions represent preferred embodiments only and are not intended to represent any limitation to the scope of the invention.

40 MB Disk

	<u>Dimension</u>	<u>Length (in mm)</u>
5	a	81
	b	57
	c	58
	d	4
	e	55
10	f	12
	g	4

45 MB Disk

15	a	81
	b	59
	c	60
	d	4
	e	55
20	f	12
	g	4

50 MB Disk

25	a	81
	b	61
	c	62
	d	4
	e	55
30	f	12
	g	4

60 MB Disk

35	a	81
	b	63
	c	64
	d	4
	e	60
40	f	12
	g	4

100 MB Disk

a	81
b	67
c	68
d	4
e	64
f	12
g	4

180 MB Disk

a	81
b	79
c	80
d	4
e	74
f	12
g	4

Other variations on the sleeve are possible. For example, the web widths “d” and “g” could be increased so that the sleeve would have room to accommodate a sheet of printed material or a plurality of discs between the second and third panels. Alternatively, the first and fourth panels could be affixed to each other only along three joining edges, so that a second disc could be inserted and held between those two panels.

Fig. 6 shows two alternatives to the locking tab embodiment in Fig. 2. In Fig. 6A, notches 180, 182 are cut into edges 184 and 186, respectively, of the conjoined first and fourth panels to define a corner tab 188, which is insertable into a diagonal slot 190 provided in second panel 122.

In Fig. 6B, two small tabs 280, 282 of velcro are provided in corners of the conjoined first and fourth panels, and two mating tabs 284, 286 of velcro are provided in corners of the second panel 222 so that when the first and fourth panels are folded down over the second panel, the mating velcro tabs mesh and hold the package closed. The mating velcro tabs could alternatively comprise strips running near edges

288 and 290, respectively. Alternatively, a releasable adhesive such as that found in Post-It® notes could be used in place of velcro.

While the form of apparatus and method herein described constitute preferred embodiments of this invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention.

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What is claimed is:

1. A method for making a compact disc holding sleeve comprising:

providing a sheet of foldable material defining aligned first, second, third and fourth panels, wherein said second and third panels are between said first and fourth panels, and wherein at least one fold is provided between each of said first and second panels, said second and third panels, and said third and fourth panels, and further defining a tab adjacent said third panel in a direction substantially perpendicular to a direction along which said first through fourth panels are aligned, wherein at least one fold is provided between said tab and said third panel;

folding said sheet along said folds so that a front surface of said fourth panel and a front surface of said first panel face each other and a surface of said tab and a surface of said second panel face each other;

adhering said front surfaces of said first and fourth panels to each other; and

adhering said surface of said tab to said surface of said second panel.

2. The method according to Claim 1, wherein a plurality of folds is provided between each of said second and third panels, said third and fourth panels and said tab and said third panel to define web portions between said second and third panels, said third and fourth panels, and said tab and said third panel.

3. A method for securing a compact disc in a holding sleeve made according to either of Claims 1 or 2, comprising:

inserting said disc between said second and third panels;

folding said adhered first and fourth panels such that said first panel is brought into overlying relationship with said second panel; and

detachably securing said adhered first and fourth panels to said second panel.

5 4. A method according to Claim 3, wherein said securing comprises:

 providing a locking tab along one or more edges of said adhered first and fourth panels;

 providing a slot in said second panel in a position to accept said locking tab when said adhered first and fourth panels are brought into overlying relationship with said second panel; and

 inserting said locking tab into said slot.

10 5. A method according to Claim 4, wherein said locking tab and said slot are provided in corner areas of said adhered first and fourth panels and said second panel, respectively.

 6. A method according to Claim 3, wherein said securing comprises:

 providing one or more areas of releasable adhesive on said first panel;

20 providing a corresponding number of mating areas on said second panel in a position to mate with said areas on said first panel when said adhered first and fourth panels are brought into overlying relationship with said second panel; and

 bringing said areas and said corresponding mating areas into contact with each other.

7. A method according to Claim 3, wherein said securing comprises:

providing one or more areas of velcro on said first panel;

providing a corresponding number of mating areas of velcro on said second panel in a position to mate with said areas on said first panel when said adhered first and fourth panels are brought into overlying relationship with said second panel; and

bringing said areas and said corresponding mating areas into contact with each other.

8. A compact disc holding sleeve comprising a sheet of foldable material defining aligned first, second, third and fourth panels, wherein said second and third panels are between said first and fourth panels, and wherein at least one fold is provided between each of said first and second panels, said second and third panels, and said third and fourth panels, and further defining a tab adjacent said third panel in a direction substantially perpendicular to a direction along which said first through fourth panels are aligned, wherein at least one fold is provided between said tab and said third panel;

wherein said sheet is folded along said folds so that a front surface of said first panel and a front surface of said fourth panel face each other, and a surface of said tab and a surface of said second panel face each other; and

wherein said front surfaces of said first and fourth panels are adhered to each other, and said surface of said tab is adhered to said surface of second panel.

9. A compact disc holding sleeve according to Claim 8, wherein a plurality of folds is provided between said each of said second and third panels, said third and

fourth panels, and said tab and said third panel to define web portions between each of said second and third panels, said third and fourth panels, and said tab and said third panel.

5 10. A compact disc holding sleeve according to either of Claims 8 or 9 further comprising means for securing said adhered first and fourth panels to said second panel when said adhered first and fourth panels are brought into overlying relationship with said second panel, so that a compact disc inserted between said second and third panels is held therebetween.

10 11. A compact disc holding sleeve according to Claim 10 further comprising a notch provided along a free edge of one of said second and said third panels to facilitate removing said compact disc.

15 12. A compact disc holding sleeve according to Claim 10, wherein said means for securing comprises a locking tab provided along one or more free edges of said adhered first and fourth panels and a slot in said second panel in a position to accept said locking tab when said adhered first and fourth panels are brought into overlying relationship with said second panel.

20 13. A compact disc holding sleeve according to Claim 10, wherein said means for securing comprises one or more areas of releasable adhesive on said first panel and a corresponding number of mating areas on said second panel in a position to

mate with said areas on said first panel when said adhered first and fourth panels are brought into overlying relationship with said second panel.

14. A compact disc holding sleeve according to Claim 10, wherein said means for
5 securing comprises one or more areas of velcro on said first panel and a
corresponding number of mating areas of velcro on said second panel in a position
to mate with said areas on said first panel when said adhered first and fourth
panels are brought into overlying relationship with said second panel.