

PACKAGING FOR RECEIVING A DISC-SHAPED INFORMATION CARRIER

5 The invention relates to a packaging for receiving a disc-shaped
information carrier, especially a compact disc, comprising a disc
holder manufactured as a injection molded plastic part which has a
depression into which the information carrier can be placed from
above and furthermore comprising securing elements, formed at the
disc holder, for the information carrier placed into the depression, as
well as furthermore comprising a substantially rectangular cover for
10 the disc holder which is connected along one of its edges to the disc
holder while the opposite free edge of the cover is detachably
connectable by a closure to the disc holder.

Such packagings are known in various embodiments and are widely
used in the audio sector for storing compact discs.

15 A packaging of the aforementioned kind is, for example, the world
wide leading so-called jewel box which is comprised of a bottom part
and a cover part manufactured of transparent plastic material as
well as a disc holder positioned there between. The bottom and
cover parts are designed constructively such that paper information
20 brochures, booklets etc. can be inserted therein manually or by a
machine. By folding these information brochures twice at opposite
edges of the end face of the packaging, there is the advantage that
the folded areas can be labeled similar to the spine of a book. The
bottom and cover parts are connected pivotably to one another at
25 a common edge by a hinge device and can thus be folded open like

5 a book. Into the disc holder, also called tray, a CD is automatically inserted with a corresponding machine, and the disc holder is subsequently inserted into the bottom part with clamping fit. The disc holder is embodied with clamping elements which engage the center hole of a CD and thus arrest it.

10 Since compact discs gain great importance as data carriers in data processing, as so-called CD-ROMs, and are increasingly used as an insert in computer journals, a packaging is needed that fulfills the requirements of a design that is flat and light-weight, but bending-resistant and sufficiently protective with respect to environmental influences.

15 With respect to these properties, the aforementioned known CD packaging has, however, manufacturing-technological as well as application-related disadvantages. For example, the disc holder can not be inserted during the manufacture into the bottom part because of the information brochure to be interposed so that a cost-intensive, separate handling of top and bottom parts, disc holder, and text insert is required. Furthermore, such packagings, due to their thickness of at least 8mm that cannot be reduced for constructive reasons, are relatively large and heavy.

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Furthermore, a packaging is known which is comprised of cardboard that is divided into three fields to which is adhesively connected a formed, rectangular plastic disc holder of a known kind. The two

outer thirds of the cardboard can be folded wing like inwardly and form then by overlapping and resting on one another the cover for the upper side of the disc holder. The front and back sides of this packaging are provided with printed text information with the exception of the area where the disc holder is attached. In addition, at the inner surfaces of the wings outwardly foldable text inserts or booklets can be attached. A disadvantage of this known packaging is the lack of a lockable closure of the cover so that it can open by itself. In order to provide for a sufficient bending resistance, the two wings in the closed state form a double cover with the result that the known packaging in its outer size substantially corresponds to that of the jewel box and is thus also relatively large and heavy.

In a further known packaging a rectangular disc holder that is made by injection molding of plastic is adhesively connected to a cardboard that is foldable and encloses in the folded state the disc holder. The free edge of the cover can be secured at the disc holder by a closure that is connected to the disc holder by a hinge and engages the cover. This packaging, in principle, can be manufactured in a simple manner and inexpensively, and, because of the securing action of the cover by a closure, also provides for excellent protection against environmental influences, but, because of its outer dimensions and the use of solid cardboard material required for reasons of stability, it is relatively large and heavy.

It is therefore an object of the invention to improve a packaging for

receiving a disc-shaped information carrier, especially a compact disc, such that it can be manufactured in a simple, fast, and inexpensive manner and exhibits at the same time an especially flat and light-weight design in comparison to known packagings.

5 As a solution for a packaging of the aforementioned kind it is suggested that the closure is fixedly connected to the free edge of the cover.

10 With such a packaging in the closed state, a form-locking attachment of the cover at the disc holder is achieved in a simple manner which provides for an especially flat and light-weight design.

15 In a further advantageous embodiment of the invention, the closure is a plastic strip that is connected to the free edge over its entire length. With this design the cover is provided with increased stiffness and stability, and it is uniformly tightened upon closing the packaging.

20 In order to achieve a permanent and easy opening and closing action of the packaging for repeated use, it is furthermore suggested that the closure is provided with fastening sections which cooperate with correspondingly shaped catch or snap elements at the disc holder in order to secure the closure at the disc holder.

Advantageously, the closure is glued to the cover because this is a

simple and inexpensive manufacturing method.

5 In principle, the cover can be comprised of any suitable material, for example, a flexible plastic foil. A cover of paper or cardboard is suggested as an especially suitable cover because this provides for an inexpensive and light-weight design of the packaging. Furthermore, paper has the advantage that the cover can be printed with information and thus there are no further manufacturing costs for placing text inserts.

10 In a preferred embodiment the cover is glued to the under side of the disc holder and, in addition, is glued to an upwardly facing strip-shaped surface of the disc holder that extends along the edge. In this manner a secure, sliding-resistant seat of the cover is ensured. Also, the upwardly facing, strip-shaped adhesive surface ensures that a uniform folding edge at the upper side of the disc holder results which allows for reliable opening and closing of the cover.

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In order to achieve that the packaging is very flat and thus especially suitable as an insert for magazines, the thickness measured between the upper and underside of the disc holder is 2 mm to 4 mm.

20 The invention further suggests that the disc holder and the closure are materially connected by at least one rated break point since they are the component of one and the same injection-molded plastic

part. In this manner, the packaging can be produced of a single plastic part so that a simple and inexpensive manufacture is possible. According to a further preferred embodiment of the invention, it is suggested that the rated break point extends only
5 over a central portion of the elongate closure and that at both ends of this central portion of the closure fastening sections are provided which cooperate with correspondingly shaped catch or snap elements at the disc holder in order to secure the closure at the disc holder. This achieves that the closure when closed functions doubly
10 as a snap closure and a clamping closure.

For the purpose of sealing the packaging, it is suggested that a plurality of point material connections arranged in a row are provided as break points. In this manner, in addition to a simple breaking action of the closure, a subsequent clamping action by the
15 broken-off stays results. When the disc holder and the closure are materially connected by the break point up to the point when the desired breaking of the break point takes place, and are further in form-locking connection by the catch or snap elements, it is not possible to return the packaging into its original state after the first
20 opening. This provides an inherent sealing protection of the information carrier resulting from the manufacture which thus makes theft from the closed packaging more difficult.

Expediently, the breakage of the break points takes place by bending the closure relative to the disc holder so that at the same

time an improved protection against the disc slipping out during opening of the packaging is ensured.

5 In order to provide a space-saving and simple stacking action of multiple packagings, it is suggested to provide the underside of the disc holder with a planar, flat surface.

Finally, it is suggested that at the underside of the disc holder lateral guide grooves are provided in order to allow for a directed and slip-resistant stacking.

10 Further details and advantages of the object of the invention are subsequently explained with the aid of the embodiments represented in the drawings.

It is shown in:

Fig. 1 a complete side view of the open packaging;

15 Fig. 2 a plan view onto the disc holder with the closure folded upwardly;

Fig. 3 a side view of the disc holder according to Fig. 2;

Fig. 4 a front view of the disc holder according to Fig. 2;

- Fig. 5** a plan view onto the securing elements for securing the information disc;
- Fig.5 a** a section of the securing elements in the plane Va-Va of Fig. 5;
- 5** **Fig. 6** a plan view of a further embodiment of the disc holder;
- Fig. 7** a sectional view of the disc holder according to Fig. 2;
- Fig. 7 a** an enlarged detail of the area indicated with VIIa in Fig. 7;
- 10** **Fig. 8** a view of a detail of the snap and clamping enclosure indicated with VIII in Fig. 3;
- Fig. 9** a view corresponding to the sectional view of Fig. 3;
- Fig. 10** a side view of the disc holder according to Fig. 2 with the closure folded over;
- 15** **Fig. 10a** a detail of the area indicated with reference numeral Xa in Fig. 10;
- Fig. 11** in a view from below the lower adhesive surface of the

disc holder;

Fig. 12 an alternative embodiment of the lower adhesive surface; and

5 Fig. 13 in a plan view the upper adhesive surfaces of the disc holder and the closure.

10 The inventive packaging according to Fig. 1 is comprised of a flat disc holder 1 having a thickness of 2-4mm, a cover 2 enclosing it, and a closure 3, whereby the cover 2 is preferably comprised of paper or cardboard. The disc holder 1 as well as the closure 3 are produced as a unitary part of conventionally employed transparent or tinted plastic by injection molding, i.e., until the time of first opening of the packaging by the user they are components of one and the same injection-molded plastic part.

15 As can be seen in Fig. 2, the disc holder 1 has a substantially rectangular shape in plan view and has at its upper side a substantially square depression 4 which may receive, for example, a compact disc (CD) or any other information carrier.

20 According to Figures 5 and 5a in the central area spring-elastic securing elements 5 are formed which are slightly oversized so that the CD conventionally provided with a central hole can be pushed with light pressure onto the securing elements in order to be

centered by clamping in this position. The securing elements 5 are comprised of two oppositely positioned part-circular clamping rings which are respectively surrounded at their inwardly oriented sides by a slot 6 penetrating the disc holder and thus producing the spring action. The slot 6 has at its two ends a short radially extending portion 6a from where undercuts 6b, which also penetrate the disc holder, extend and surround the securing elements 5 at their outer side in a part-circular shape. This improves the securing action of the securing elements 5. A stay 6c indicated in dashed lines in Fig. 5 interrupts the slot 6 and may further improve the securing force applied to the CD. The securing elements 5 have a minimal height so that their upper edge does not project past the height of the other portions of the disc holder 1 having a thickness of 2mm-4mm.

Fig. 2 furthermore shows that ribs 7 concentrically arranged to the center hole of the CD support the inserted CD from below at its outer uncoated edge portion and thus provide protection against scratching.

Within the depression 4 a reinforcement rib 8 surrounding the information carrier in a protective manner is provided which is widened at the corner portions of the depression 4 with substantially semi-circular projections 9 so that by engaging with a finger nail under the CD a simple and directed removal of the compact disc from the disc holder 1 is possible. An alternative embodiment, in which the projections 9 are elliptical grip holes 10 that are partly

covered by the inserted CD, is shown in Fig. 6.

5 The disc holder 1 is provided with upwardly projecting terminating rims 11 (see Figs. 7 and 7a) at two opposed lateral edges whereby these rims 11 project upwardly past the other design elements. The rims 11 open into a strip-shaped surface 12 that is slanted outwardly and forms the rear edge of the disc holder 1. Along the same length and width the underside of the disc holder 1 is provided with complementary guide grooves (not represented) which are to be engaged by the rim 11 upon stacking multiple disc holders so that
10 a directed and sliding-resistant stacking is ensured. For providing a simple and automated manipulation of the stacked packages the underside of the stripe-shaped surface 12 is slightly inwardly displaced (not represented) with respect to the remaining planar underside of the disc holder 1 so that between stacked packagings
15 recesses are formed which allow gripping from the front with respective gripping tools.

The edge of the disc holder 1 opposite the strip-shaped surface 12 is formed by upwardly open hook-shaped catch or snap elements 13 which cooperate with corresponding fastening sections of the
20 closure 3 in order to allow for closing the packaging.

Details of the closure 3 are to be explained in the following with the aid of Figures 4 and 13. The closure 3 is comprised of a substantially rectangular plastic strip extending over the entire width

of the disc holder 1 and having an upper side with a planar adhesive surface 15 (see Fig. 13). Its underside 14a is provided with a central portion with finger-wide grip elements 14 that are slightly projecting and have adjacent thereto at their ends fastening sections 16 (see Fig. 4) corresponding on the catch or snap elements of the disc holder 1. The grip elements, in addition to providing ergonomic manipulation of the closure, also serve to brace the flat plastic strip so that an exact and bending-resistant opening of the packaging is possible.

After injection molding in a common injection molding tool, the disc holder 1 and the closure 3 are connected to one another by a plurality of point material connections 17 arranged in a row between the snap and catch elements 13, respectively, the fastening sections 16. This is shown in Figures 3 and 8. The closure 3 is in a perpendicular position relative to the disc holder 1. In the thus produced injection-molded part the closure 3 is then folded over about the material connections 17 acting as hinges until the two fastening sections 16 engage the catch or snap elements. At this moment, the material connections 17, which serve as break points are still intact so that the disc holder 1 and the closure 3 are materially connected by the material connections 17 as well as a form-lockingly connected by the snap or catch elements 13 and the clamped fastening section 16. Only then the CD is inserted into the packaging and subsequently the cover 2 is connected by glueing at the provided adhesive locations to the single-piece injection-molded

part. From this point in time on, the CD can only be removed from the packaging by releasing the closure 3 from the disc holder 1. When doing this the first time, this is only possible upon destruction of the material connections 17 so that a simple and effective sealing of the CD before first use is provided.

The material connections 17 are designed such that a single pivoting action in the manner of a hinge is possible, but however upon a subsequent return, material fatigue and breakage will occur.

The disc holder 1 is connected by glueing to the cover 2 that encloses it in the closed packaging state and is comprised of a single sheet of paper, card board or foil. As adhesive surfaces the double-hatched areas shown in Figures 11-13 are suitable. As the lower adhesive surface 18 either the complete planar underside of the disc holder 1 (see Fig. 11) can be used or, alternatively, only two small sections 18a which extend along the outer edge of the disc holder 1 (see Fig. 12) can be used. The latter alternative has the advantage that, when using a disc holder comprised of a clear plastic material, an additional advertising or information surface 20 at the underside of the packaging (Fig. 1) is provided which is visible when the CD is removed.

The adhesive surfaces 19 and 15 at the upperside of the disc holder 1 are formed by the strip-shaped surfaces 12 and the aforementioned planar upper side of the folded over closure 3 (see

Fig. 13). The adhesive connection is provided after the information carrier has been inserted and the closure is folded over, but still in material connection to the disc holder 1 so that only after breaking of the break points 17 upon bending carried out by the user the closure 3 is thus opened for the first time relative to the disc holder 1 in order to remove the CD. Accordingly, an inherent, inexpensive sealing protection for the information carrier is provided as a result of the manufacture. In order to protect the CD in addition against falling out of the disc holder 1, the cover 2 can be glued to the front side of the disc holder 1 up to the outer diameter of the CD.

Before gluing the cover 2 to the disc holder 1, a flat printed brochure can be inserted between the CD and the underside of the cover 2. This printed brochure can also be fixedly connected to the underside of the cover 2 especially since it is also made of paper.

List of Reference Numerals

	1.	Disc holder
	2.	Cover
	3.	Closure
5	4.	Depression
	5.	Securing elements
	6.	Slot
	6a.	Radially extending portion
	6b.	Undercut
10	6c.	Stay
	7.	Support ribs
	8.	Reinforcement ribs
	9.	Projections
	10.	Grip holes
15	11.	Upwardly projecting terminating rim
	12.	Strip-shaped surface
	13.	Catch or snap elements
	14.	Grip elements
	14a.	Underside of the closure
20	15.	Adhesive surface of the closure
	16.	Fastening sections
	17.	Point material connection, break point
	18.	Lower adhesive surface of the disc holder
	18a.	Alternative lower adhesive surface
25	19.	Upper adhesive surface of the disc holder
	20.	Advertising surface

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CLAIMS:

1. Packaging for receiving a disc-shaped information carrier, especially a compact disc, having

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a) a disc holder (1) comprised of an injection-molded plastic part and provided with a depression (4) into which the information carrier can be inserted from above;

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b) securing elements (5), formed at the disc holder (1), for the information carrier inserted into the depression (4);

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c) a substantially rectangular cover (2) for the disc holder, connected along one of its edges to the disc holder (1) while the opposite free edge of the cover (2) is detachably secured by a closure (3) to the disc holder (1);

characterized in that

the closure (3) is fixedly connected to the free edge of the cover (2).

2. Packaging according to claim 1, characterized in that the closure (3) is a plastic strip that is connected over the entire length to the free edge of the cover (2).

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3. Packaging according to claim 1 or claim 2, characterized in that the closure (3) is provided with fastening sections (16) which cooperate with correspondingly formed catch or snap elements (13) at the disc holder (1) in order to secure the



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closure (3) at the disc holder (1).

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4. Packaging according to one of the previous claims, characterized in that the closure (3) is glued to the cover (2).
5. Packaging according to one of the preceeding claims, characterized in that the cover (2) is comprised of paper or cardboard.
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6. Packaging according to one of the preceeding claims, characterized in that the cover (2) is glued to the underside of the disc holder (1) and additionally to an upperwardly facing strip-shaped surface (12) extending along the edge of the disc holder (1).
7. Packaging according to one of the preceeding claims, characterized in that the thickness between upper side and underside of the disc holder (1) is 2 mm to 4 mm.
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8. Packaging according to one of the preceeding claims, characterized in that the disc holder (1) and the closure (3) are components of one and the same injection-molded plastic part and are materially connected by at least one break point (17).
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9. Packaging according to claim 8, characterized in that the



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5 break point (17) extends only over a central portion of the elongate closure (3) and that of both ends this central portion of the closure (3) fastening sections (16) are connected which cooperate with correspondingly shaped catch or snap elements (13) at the disc holder (1) in order to secure the closure (3) at the disc holder (1).

10. Packaging according to claim 8 or 9, characterized by a plurality of point material connections (17) as break points arranged in a row.

10 11. Packaging according to one the claims 8 through 10, characterized in that the disc holder (1) and the closure (3) are in material connection by the break points (17) until the point in time of desired breakage of the break points (17) and are simultaneously in a form-locking connection by the catch or snap elements (13).
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12. Packaging according to claim 11, characterized in that the breakage of the break point (17) is carried out by bending the closure (3) relative to the disc holder (1).

20 13. Packaging according to one of the preceeding claims, characterized in that the underside of the disc holder (1) has a planar, flat surface.



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14. Packaging according to claim 13, characterized in that at the underside of the disc holder (1) lateral guide grooves are provided.

