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Translation of German text

Title: Device For Storing Flat Objects, In Particular Compact Disks, In Jackets

5 Capable Of Being Flipped Through

Description

The development of mobile playback devices has made the easy transport and
10 storage of compact disks a desirable goal, so that envelope-type jackets of a flexible
plastic have been created, which require much less space than the standard solid cases.
While it is possible to stack solid cases without additional holding devices or receiving
devices or to deposit these in the manner of a book on a shelf, this type of storage is
practically impossible with envelope-type jackets of a flexible plastic. Thus, it is
15 necessary to have storage devices, in which the jackets can be stored in an orderly
manner. It is the object of the invention to create such a device.

The proposed invention is a device for storing flat objects, in particular compact
disks, comprising several envelope-type jackets for holding these objects, which jackets
are capable of being flipped through. The jackets can be hooked into at least one
20 retaining element that is attached to a support element, is aligned in the direction of a
pivoting axis for flipping through the jackets and is provided with respectively one,
approximately tube-shaped recess at least on both ends. The edge of this recess extends
in a plane perpendicular to the pivoting axis and serves as a guide for the hooked-in

jackets. A device of this type has the advantage that the jackets can be stored inside the device, but can also be removed from the device. The device further offers the option of being able to select and remove the desired compact disk from the jacket by flipping through the jackets, without having to remove the jacket itself from the device. A further
5 advantage is that no involved actuation mechanism must be provided for inserting as well as removing the jackets. Consequently, it follows that the retaining element is easy to produce, for example as a molded part made of plastic, which can then be combined optionally with the support element, e.g. through gluing, riveting, fitting together, welding or the like, depending on the material used for the support element. Depending
10 on the design, the support element and the retaining element can be produced from the same material and, if necessary, as one piece, as is explained in further detail in the following for one embodiment of the invention. However, they can also be produced from two types of material, for example a solid cardboard for the support element and plastic for the retaining element, which can be separated without problems during a
15 reprocessing. This type of material selection, for example, offers itself for a book-type embodiment of the device.

The invention is realized with a curved contour for the edge of the recess. This ensures an easy flipping through, wherein the jacket itself and a compact disk that may be stored therein is not subjected to deformation forces, owing to the fact that the jacket is
20 guided via the edge of the recess. In place of a curved contour, a polygonal or approximately rectangular contour is also advantageous, which permits a certain relative

displacement of the jacket on the retaining element in addition to flipping through the jackets.

It is furthermore useful if the retaining element is provided with a back element for attaching it to the support element. The support element in this case can be a piece of
5 furniture or even a rack. For example, when used in connection with a piece of furniture, several units consisting of retaining element and back element can be mounted for example in a drawer. If they are arranged on a rack, e.g. a display rack, several units can be arranged side-by-side and/or one above the other with a vertical orientation of the pivoting axes. However, this type of arrangement can also be provided accordingly for
10 or in connection with a piece of furniture. Depending on the material selected for the support element, the support element can be additionally reinforced with this back element for the retaining element.

One embodiment of the invention provides that the support element has the shape of a book, comprising a front cover that is connected via a back element to a rear cover.
15 The retaining element is attached to the back element or the rear cover. Thus, it is possible to combine a plurality of jackets to form a "book," which can subsequently be stored in a cabinet.

Another embodiment of the invention provides that the support element is designed as a panel and that several retaining elements are connected parallel, side-by-
20 side, with the support element. As a result, it is possible to create a rack-type device, which can be placed on a table or inside a drawer. Thus, far more than ten jackets can be stored in a support element, wherein it is easy to flip through these jackets. Owing to the

fact that several retaining elements are arranged on the support element, a defined pivoting of the jackets is ensured, even if many jackets are arranged side-by-side and excessive stress on the flexible tabs of the jackets is avoided.

A further embodiment of the device according to the invention provides for a jacket, having a support strip of a stiff, but elastically yielding material along one edge. This strip is provided with a punched-out section that is open toward the free longitudinal edge and is provided on the opposite ends respectively with one flexible tab that extends in the direction of the longitudinal edge. The jacket support strip, which can be produced from a flexible and thus soft plastic, for example a polypropylene foil, provides a reinforcement that ensures a reliable connection to the retaining element of the device. As a result of the flexible tabs, which are punched out of the support strip material, it is simultaneously ensured that the jacket can be connected to and also released from the retaining element in the manner of a snap connection. The free ends of the flexible tabs are pointed toward each other if the retaining element with its two ends is respectively open in the opposite direction. However, it is also possible to design the retaining element in such a way that the openings formed by the tube-shaped recesses point toward each other. In that case, the flexible tabs must point accordingly in the opposite direction.

One advantageous embodiment of the invention provides that the punched-out section has a circular hole, respectively in the transition region behind a flexible tab, which hole has a side opening toward the punched-out section. The spacing between the two holes present in this embodiment is then selected such that a jacket formed in this

way can be stored in a device according to the invention as well as a ring binder with corresponding closing mechanism and standard spacing between the rings.

Another embodiment of the invention furthermore provides that the spacing between the flexible tab and the edge limiting the punched-out section corresponds to the thickness of the edge of the recess on the support element. This ensures a reliable guidance of the jacket on the support element when flipping through the jackets.

The invention is explained in further detail with the aid of schematic drawings of exemplary embodiments. Shown are in:

- 10 Figure 1 A device for storing compact disks in jackets in the form of a book;
- Figure 2 A section along the line II-II in Figure 1;
- Figure 3 A modified embodiment;
- Figure 4 A device in the form of a rack;
- Figures 5 and 6
- 15 Modifications of the embodiment according to Figure 5, also in sectional views;
- Figure 7 A one-piece embodiment in the form of a support.

The perspective view of the storage device shown in Figure 1 is designed in the shape of a book, comprising a front cover 3 as support element 1 for a retaining element 2, which front cover is connected via a back 4 to a rear cover 5. The front cover 3 and

the rear cover 5 are connected via respective "joints" 6 and 7 to the back 4, so that the two covers 3 and 5 can be folded up and toward each other.

The retaining element 2, which is a hollow profile for the embodiment shown herein, is accordingly provided with a separate tube-shaped recess on each end 8 and 9, 5 the edge 10 of which extends perpendicular to the plane for the back 4.

Several envelope-type jackets 11, of which only one is shown here, can be hooked into the retaining element 2. The envelope-type jacket 11, which serves to hold a compact disk 12 in the exemplary embodiment shown herein, is produced from a plastic foil, e.g. a polypropylene foil, and is provided along a longitudinal edge 13 with a support 10 strip 14 of a stiff, but elastically yielding material. Flexible tabs 15 are formed from this strip in a corresponding punching operation that is described further in the following. The jacket 11 comprises an insertion opening 11.1, which is arranged crosswise to the swivel pin 18 (Figure 2), so that an inserted compact disk cannot fall out in case of a vertical alignment. A wide slot 11.2 on the front of the jacket permits the insertion of a 15 finger for handling the compact disk.

As can be seen in Figure 1, the flexible tabs 15 grip behind the edge 10 of retaining element 2, so that the jackets on the one hand are held form-fittingly against the retaining element 2, but can also be flipped through in the manner of a book. The jackets 11 can be "snapped into" the retaining element 2 with a respective deformation of the 20 flexible tabs 15 and can also be removed in the same way.

The retaining element 2 for the exemplary embodiment shown herein is produced as one-piece plastic part and is provided with a back element 16, which can be used for

attaching the retaining element 2 to the support element 1. The back element 16 simultaneously can function to stiffen, for example, the back 4 of the book-shaped support element 1.

The sectional view according to Figure 2 provides details of the embodiment of support strip 14 on the jacket 11 and, simultaneously, also shows the design of the retaining element 2. Identical components are given the same reference numbers, so that we can point to Figure 1 for these.

The sectional view in Figure 2 shows that the retaining element 2 essentially has a tubular shape, wherein the two open ends that form a recess are limited by an edge 10. This edge extends in a plane perpendicular to the pivoting axis 18, around which the jacket 11 can be pivoted when flipping through the jackets. The back element 16 of retaining element 2 is fixedly connected to the back 4 of the book-shaped, foldable support element 1, e.g. by gluing or riveting it on.

The support strip 14 of the envelope-type jacket 11 is provided with a punched-out section 19 that is open toward the free longitudinal edge 20 and is provided at the opposite ends respectively with a flexible tab 15, which extends in the direction of longitudinal edge 20. The space between the flexible tab 15 and the edge 22 that limits the punched-out section 19 is dimensioned such that the support strip 14 can support itself on the outside surface of the retaining element 2 when flipping through the jackets.

The punched-out section 19 is respectively provided with a circular hole 23 in the transition region behind the flexible tabs 15, which hole has a side opening 24 toward the punched-out section 19. The diameter for both holes 23, as well as the distance between

the two holes 23, is dimensioned such that the jacket 11 can also be deposited in a ring binder with standard ring mechanism. For ring mechanisms with larger spacing, the support strip 14 can be provided with additional holes 25 in the end region.

Figure 3 shows an embodiment that is modified relative to Figure 1 and also has a
5 support element in the form of a book. Identical components in this case are also provided with the same reference numbers as in Figure 1, so that we can point to the above description.

The embodiment according to Figure 3 differs from that according to Figure 1 in that two retaining elements 2.1 and 2.2, having either a cup-shaped or also a continuously
10 tube-shaped design, are arranged at a distance to each other on a back element 16. With a continuously open embodiment, the edges 10.1 that point toward the outside as well as the edges 10.2 that point toward the inside of the two retaining elements can serve as guides for a jacket 11 to be inserted. A jacket can be hooked in via the edges 10.1, as previously described with the aid of Figures 1 and 2.

15 However, it is also possible to punch out the support strip 14 for a jacket 11 in such a way that outward pointing flexible tabs 15.1 are created each time, as shown in Figure 3. As a modification, it is possible to punch out respectively two shorter flexible tabs that are facing each other, so that respectively two flexible tabs can snap in at the retaining element 2.1 as well as the retaining element 2.2, which can also have a shorter
20 design. Hole-shaped punched out sections 23 can also be provided with this embodiment, as described with the aid of Figure 2.

Figure 4 shows an embodiment in the shape of a rack. In this case, several retaining elements 2.3 are arranged directly adjacent and parallel on a panel-type support element 26, or they are arranged side-by-side at a distance to each other, as shown, so that the jackets to be stored can be stored in several "packets" in the device. The support
5 element 26 can be provided on at least one side with a bearing element 27, against which the jacket stack can rest in the "unused state."

The sectional views according to Figures 5 and 6 demonstrate that it is not necessary for the retaining elements 2.3 to have a semicircular or even a curved contour of the cross sectional outline. The sectional view according to Figure 6 in this case
10 shows retaining elements 2.3 with a rectangular outline.

Whereas the retaining elements 2.3 in Figures 4 and 6 are arranged respectively parallel and at a distance to each other on the support element 26, it is also possible for the rectangular outlines to follow each other directly, as shown in the left sectional view in Figure 6, or to select an elongated rectangular outline, which is either not divided at all
15 over its total length, or only once, as indicated herein.

Figure 7 shows a schematic view of a device produced as one piece from plastic, wherein the support element 26 has a curved outline and wherein the retaining elements 2.3 are connected as one piece to the support element.

The elongated version of the retaining element 2, described with the aid of Figure
20 1, as well as the divided version that is described with the aid of Figure 3 can be used even for devices embodied as racks, as described with the aid of Figures 4 to 7.



Claims

1. A device for depositing flat objects capable of being flipped through, in particular compact disks, comprising several envelope-type jackets (11) for holding the objects, which jackets are provided with flexible tabs (15) and can be hooked into at least one retaining element (2) that is attached to a support element (1; 26) and is aligned in the direction of the pivoting axis (18) for flipping through the jackets (11), which retaining element has respectively one approximately tube-shaped recess on its two ends (8, 9), the edge (10) of which extends in a plane perpendicular to the pivoting axis (18) and serves as guide for the hooked-in jackets (11).
2. A device according to claim 1, characterized in that the edge (10) of the recess has a curved contour.
3. A device according to claim 1, characterized in that the edge (10) of the recess has an approximately rectangular contour.
4. A device according to one of the claims 1 to 3, characterized in that the retaining element (2) is provided with a back element (16) for fastening it to the support element (1).



5. A device according to one of the claims 1 to 4, characterized in that the support element (1) is designed in the shape of a book, comprising a front cover (3) that is connected via a back (4) with a rear cover (5) and that the retaining element (2) is attached to the back (4) or the rear cover (5).
6. A device according to one of the claims 1 to 4, characterized in that the support element (26) is designed as a panel and that several retaining elements (2.3) are connected parallel and side-by-side with the support element (26).
7. A device according to one of the claims 1 to 6, characterized in that the jacket (11) is provided along one edge (13) with a support strip (14) of a stiff, but elastically yielding material, which strip has a punched-out section (19) that is open toward the free longitudinal edge of the strip and is provided at its opposite ends with a separate flexible tab (15) that extends in the direction of the longitudinal edge.
8. A device according to one of the claims 1 to 7, characterized in that respectively in the transition region behind a flexible tab (15), the punched-out section (19) has a hole (23) with circular contour, which is provided with a side opening (24) toward the punched-out section (19).



9. A device according to one of the claims 1 to 8, characterized in that the respective distance between the flexible tab (15) and the edge (22) that limits the punched-out section corresponds approximately to the thickness of the edge (10) of the recess on the support element (2) [sic].