Description

The invention relates to a cassette comprising a rotatable information disc, whose information is readable by means of a pick-up which moves parallel to the disc surface, and a housing comprising main walls disposed parallel to the information disc surface and transverse walls interconnecting said main walls, which walls define an internal receiving space in which the information disc is rotatable, at least one of the walls having an aperture for access of the pick-up to the disc surface inside the housing.

Such a cassette is known, for example, from the Applicant's prior European Patent Application 0,255,185 A1 (PHQ 86.015, herewith incorporated by reference). The relevant cassette comprises a single shutter which is slidable over the outside of the housing to close apertures formed in the two main walls of the housing for the access of a pick-up. For the remainder the housing is imperforate and comprises two shells which are interconnected permanently or semi-permanently, for example by gluing, ultrasonic welding etc. or by fixing means such as screws, which can be removed with the aid of a tool. The cassette is intended for a so-called DOR disc (Digital Optical Recording), which is permanently accommodated in the internal receiving space of the cassette.

It is not always desirable that information discs are permanently accommodated in cassettes. Some information discs, for example CD-ROM discs (Compact Disc Read Only Memory) are provided with a permanent program by means of a replica method. Such discs, just like normal Compact Discs, need not necessarily be accommodated in a housing because the information recorded on the disc is in principle protected against touching and soiling. However, in the case of professional discs, such as said CD-ROM discs, a protection is frequently desirable because the recorded information may be far more susceptible to read errors and, in addition, the disc may be far more valuable.

Therefore, such professional Compact Discs are sometimes also accommodated in a cassette. In accordance with a non-prepubished proposal, this may be achieved, for example, in a manner as is known per se for a specific type of video disc, see for example the two United States Patent Specifications 4,361,884 and 4,463,850 (herewith incorporated by reference). These known cassettes comprise a housing basically consisting of a sleeve which is closed by a shutter at a front side. Limbs which engage around the video disc inside the sleeve are connected to the shutter. The cassette with the shutter facing forwards is bodily inserted into a slot in a player, the shutter being released inside the player. When the sleeve is withdrawn the shutter with the disc remains inside the player. When the sleeve is re-inserted into the player the disc is re-introduced into the sleeve and the shutter is latched to the sleeve, after which the cassette can be removed from the player as a closed unit. In cassettes of this type it is not easy, and moreover it is generally not intended to remove the disc from the cassette and to replace it by another disc. The latching means with which the shutter is latched to the sleeve are so constructed that they cannot readily be opened by hand from the exterior, not even with the aid of tools.

The invention provides a cassette of the type defined in the opening paragraph, which is suitable for use with information discs which should not be accomodated permanently in the housing in that a part of the housing is constituted by a lid which is movable relative to the remainder of the housing between an open and a closed position, the lid comprising at least a portion of one or more of the transverse walls of the housing, and in that in the open position of the lid the disc receiving space is accessible to allow the information disc to be readily exchanged, wherein the lid is pivotably connected to the housing at only one of its ends, the pivot axis being normal to the main walls of the housing.

The invention provides a cassette in which, due to the above steps, the receiving space of the cassette is conveniently and simply accessible in order to replace the information disc, without the correct operation of the cassette being adversely affected or without the dimensions of the cassette being increased. Moreover, the inventive step hardly leads to an increase in cost price of the cassette. Since the receiving space is readily accessible by moving the lid this allows the other parts of the housing to be interconnected permanently, for example by intergrated snap elements or by ultrasonic welding. Thus, the receiving space of a cassette of the type defined in the opening paragraph, is now readily accessible although the housing sections are secured to each other permanently as stated above. Securing the housing sections permanently to each other generally leads to a cost reduction, because no detachable fixing elements such as screws are needed. Another advantage is that a cassette of tugged and robust construction is obtained. This is because the two main walls are firmly interconnected by a plurality of transverse walls, which improves the rigidity of the cassette and its resistance to deformation.

A cassette having a pivoting lid has been disclosed in EP-A-0 332 214, which document falls under Art. 54, paragraph 3 EPC. The pivoting lid according to this document has been provided with separate pivots at both ends which necessitates

that the pivots should be lined out accurately over the entire width of the cassette. The pivot axis is parallel to the main walls of the cassette and intersects two opposing transverse walls.

In an embodiment of the invention the lid and the remainder of the housing are provided with corresponding labels, as a visual indication that the shutter and the remainder of the housing belong to one another. This effectively precludes mistakes and misplacement of shutters. If the lid comprises a portion of at least one of the main walls of the cassette, the lid can be identified effectively by the use of a further embodiment of the invention wherein the lid is provided with a label which extends over a transverse wall and at least one adjoining main wall portion. An advantage of this embodiment is that without any problems and without additional labels being applied the characteristic features on the labels of the cassette can be readily observed both viewed from the back of the cassette and viewed at a main wall of the cassette.

The invention will now be described in more detail, by way of example, with reference to the accompanying drawings, in which

Fig. 1 is a plan view of an embodiment of the invention with the lid in an opened position,

Fig. 2 illustrates the cooperation of a cassette as shown in Fig. 1 with means for opening to the two slides of a player and with the lid in a closed position.

The cassette shown in Fig. 1 comprises a rotatable information disc in the form of a CD-ROM disc 1. The information on the CD-ROM disc can be read by means of a pick-up, not shown, which moves parallel to the disc surface. Neither the CD-ROM disc nor the pick-up are of further relevance to the present invention.

The cassette comprises a housing 52 comprising two shells (not shown) which are permanently interconnected. The shells comprise main walls 53A parallel to the information disc, and transverse or side walls 54A, 54B interconnecting said main walls. Said walls define an internal receiving space in which the CD-ROM disc 1 is rotatable. The main walls have apertures to provide access for a pick-up to the interior of the housing and to give centring and clamping means access to the centre hole 7 of the CD-ROM disc. Two slides 8, each mainly comprising a U-shaped strip of metal, are slidable over the exterior of the cassette to open and close the apertures. Normally, the shutters 8 will be urged into the closed position by resilient means. For the sake of simplicity the resilient means are not shown, but in principle they may be of a type as used for closing the shutter of the cassette known from the aforementioned European Patent Application 0,255,185 A1.

A part of the housing is constituted by a lid 516 which is movable relative to the remainder of the housing between an open and a closed position. In the embodiment shown the shutter comprises the entire transverse or rear wall 517 of the housing. In the open position of the shutter as shown in Fig. 1 the disc-receiving space between the main walls is freely accessible to insert or remove a CD-ROM disc.

The shutter 16 comprises portions 53C of the main walls which adjoin the rear wall 517. The cassette is substantially rectangular and the lid 516 comprises the entire rear wall 517 and the portions 53C.

The lid 516 is provided with a label 518, for example an adhesive label. The housing is provided with corresponding labels 519 on the main walls. The label 518 and the label 519 correspond to one another, so that it can be ascertained visually that the lid 516 and the remainder of the housing belong to one another. This ensures that a lid cannot be mounted inadvertently onto another cassette, as a result of which the characteristic information on the label would no longer correspond to the information on the CD-ROM disc in the cassette. The label 518 extends not only over the rear wall 517 but also over the two adjoining main wall portions 53C and can therefore be read conveniently from several sides.

In the plan view shown in Fig. 1 the lid 516 is pivotally connected to the housing at the left hand end 516L by means of a pivot 30. The central portion 516M has such a thickness that it engages between the main walls 53A and 53B. Only the right hand portion 516R comprises a portion 53C which forms part of the main walls 53A and 53B. This portion 53C engages in a recess 31 in the housing when the lid is in the closed position. It is provided with the label 518 which extends over the transverse wall 517 and the main wall 53C. At the right hand side 516R the lid carries a single latching tongue 526 which cooperates with the latch 520 at the relevant side 54A of the cassette.

As is shown in Fig. 2 a playback apparatus may comprise two pivotal arms 33 which are pivotable about pivots 32. The arms are urged towards one another by a tension spring 34 and comprise stops 35 which abut against each other when the arms are urged completely against one another. At their free end 36 the pivotal arms can engage the recesses 12 of the sliding blocks 9 of the cassette, so that when the cassette is moved forwards in the direction indicated by the arrow 37 the shutters 8 are slid into the open position shown in Fig. 6. In this position the cassette is latched in the playback apparatus by suitable means, not shown, and the CD-ROM disc can be played. During removal of the cassette from the playback

apparatus the shutters 8 are closed and the levers 33 are moved towars one another.

Claims

1. A cassette comprising:
   - a rotatable information disc (1), whose information is readable by means of a pick-up which moves parallel to the disc surface, and
   - a housing (52) comprising main walls (53A) disposed parallel to the information disc surface and transverse walls (54A,B; 55A,B) interconnecting said main walls, which walls define an internal receiving space in which the information disc is rotatable, at least one of the walls (53A) having an aperture for access of the pick-up to the disc surface inside the housing, a part of the housing being constituted by a lid (516) which is movable relative to the remainder of the housing between an open and a closed position, the lid (516) comprising at least a portion of one or more of the transverse walls (54B; 55B) of the housing and in the open position of the lid the disc-receiving space being accessible to allow the information disc to be readily exchanged, wherein the lid (516) is pivotably connected to the housing (52) at only one of its ends, the pivot axis being normal to the main walls of the housing.

2. A cassette as claimed in Claim 1, wherein the lid (516) and the remainder of the housing are provided with corresponding labels (518; 519) as a visual indication that the lid (516) and the remainder of the housing belong to one another.

3. A cassette as claimed in Claim 2, wherein the lid (516) is provided with a label (518) which extends over a transverse wall (517) and at least one adjoining main wall portion (53A).

Patentansprüche

1. Kassette mit:
   - einer rotierbaren Informationsplatte (1), wobei die Information mit Hilfe eines parallel zu der Plattenoberfläche beweglichen Abnehmers ausgelesen werden kann, und
   - einem Gehäuse (52) mit Hauptwänden (53A) parallel zu der Oberfläche der Informationsplatte und mit diese Hauptwände verbindenden Querwänden (54A,B; 55A,B), wobei diese Wände einen Innenraum definieren, in dem die Informationsplatte rotierbar ist, wobei wenigstens eine der Wände (53A) eine Öffnung aufweist, durch die hindurch der Abnehmer die Plattenoberfläche innerhalb des Gehäuses erreichen kann, wobei ein Teil des Gehäuses durch einen Deckel (516) gebildet wird, der gegenüber dem übrigen Teil des Gehäuses zwischen einer geöffneten und einer geschlossenen Lage beweglich ist, wobei dieser Deckel (516) wenigstens einen Teil einer oder mehrerer der Querwände (54B; 55B) des Gehäuses umfaßt und wobei in der geöffneten Lage des Deckels der Plattenaufnahmeraum zum einfachen Wechseln der Informationsplatte zugänglich ist, wobei der Deckel (516) an nur einem der Enden sehwenkbar mit dem Gehäuse (52) verbunden ist, wobei die Schwenkachse senkrecht zu den Hauptwänden des Gehäuses steht.

2. Kassette nach Anspruch 1, wobei der Deckel (516) und der restliche Teil des Gehäuses mit entsprechenden Etiketten (518; 519) versehen sind als sichtbare Anzeige dafür, daß der Deckel (516) und der restliche Teil des Gehäuses zusammengehören.

3. Kassette nach Anspruch 2, wobei der Deckel (516) mit einem Etikett (518) versehen ist, das sich über die Querwand (517) und wenigstens einen angrenzenden Hauptwandteil (53A) erstreckt.

Revendications

1. Cassette comportant:
   - un disque d'information rotatif (1) dont l'information peut être lue au moyen d'une tête de lecture se déplaçant parallèlement à la surface du disque, et
   - un boîtier (52) présentant des parois principales (53A) disposées parallèlement à la surface du disque d'information et des parois transversales (54A, B; 55A, B) reliant lesdites parois principales, parois qui définissent un espace interne de réception dans lequel peut tourner le disque d'information, au moins l'une des parois (53A) présentant une ouverture permettant à la tête de lecture d'accéder à la surface du disque à l'intérieur du boîtier, une partie du boîtier étant constituée par un couvercle (516) pouvant être déplacé par rapport au reste du boîtier,

* C L M S *

apparatus the shutters 8 are closed and the levers 33 are moved towars one another.

Claims

1. A cassette comprising:
   - a rotatable information disc (1), whose information is readable by means of a pick-up which moves parallel to the disc surface, and
   - a housing (52) comprising main walls (53A) disposed parallel to the information disc surface and transverse walls (54A,B; 55A,B) interconnecting said main walls, which walls define an internal receiving space in which the information disc is rotatable, at least one of the walls (53A) having an aperture for access of the pick-up to the disc surface inside the housing, a part of the housing being constituted by a lid (516) which is movable relative to the remainder of the housing between an open and a closed position, the lid (516) comprising at least a portion of one or more of the transverse walls (54B; 55B) of the housing and in the open position of the lid the disc-receiving space being accessible to allow the information disc to be readily exchanged, wherein the lid (516) is pivotably connected to the housing (52) at only one of its ends, the pivot axis being normal to the main walls of the housing.

2. A cassette as claimed in Claim 1, wherein the lid (516) and the remainder of the housing are provided with corresponding labels (518; 519) as a visual indication that the lid (516) and the remainder of the housing belong to one another.

3. A cassette as claimed in Claim 2, wherein the lid (516) is provided with a label (518) which extends over a transverse wall (517) and at least one adjoining main wall portion (53A).

Patentansprüche

1. Kassette mit:
   - einer rotierbaren Informationsplatte (1), wobei die Information mit Hilfe eines parallel zu der Plattenoberfläche beweglichen Abnehmers ausgelesen werden kann, und
   - einem Gehäuse (52) mit Hauptwänden (53A) parallel zu der Oberfläche der Informationsplatte und mit diese Hauptwände verbindenden Querwänden (54A,B; 55A,B), wobei diese Wände einen Innenraum definieren, in dem die Informationsplatte rotierbar ist, wobei wenigstens eine der Wände (53A) eine Öffnung aufweist, durch die hindurch der Abnehmer die Plattenoberfläche innerhalb des Gehäuses erreichen kann, wobei ein Teil des Gehäuses durch einen Deckel (516) gebildet wird, der gegenüber dem übrigen Teil des Gehäuses zwischen einer geöffneten und einer geschlossenen Lage beweglich ist, wobei dieser Deckel (516) wenigstens einen Teil einer oder mehrerer der Querwände (54B; 55B) des Gehäuses umfaßt und wobei in der geöffneten Lage des Deckels der Plattenaufnahmeraum zum einfachen Wechseln der Informationsplatte zugänglich ist, wobei der Deckel (516) an nur einem der Enden sehwenkbar mit dem Gehäuse (52) verbunden ist, wobei die Schwenkachse senkrecht zu den Hauptwänden des Gehäuses steht.

2. Kassette nach Anspruch 1, wobei der Deckel (516) und der restliche Teil des Gehäuses mit entsprechenden Etiketten (518; 519) versehen sind als sichtbare Anzeige dafür, daß der Deckel (516) und der restliche Teil des Gehäuses zusammengehören.

3. Kassette nach Anspruch 2, wobei der Deckel (516) mit einem Etikett (518) versehen ist, das sich über die Querwand (517) und wenigstens einen angrenzenden Hauptwandteil (53A) erstreckt.

Revendications

1. Cassette comportant:
   - un disque d'information rotatif (1) dont l'information peut être lue au moyen d'une tête de lecture se déplaçant parallèlement à la surface du disque, et
   - un boîtier (52) présentant des parois principales (53A) disposées parallèlement à la surface du disque d'information et des parois transversales (54A, B; 55A, B) reliant lesdites parois principales, parois qui définissent un espace interne de réception dans lequel peut tourner le disque d'information, au moins l'une des parois (53A) présentant une ouverture permettant à la tête de lecture d'accéder à la surface du disque à l'intérieur du boîtier, une partie du boîtier étant constituée par un couvercle (516) pouvant être déplacé par rapport au reste du boîtier,

* C L M S *

entre une position ouverte et une position fermée, le couvercle (516) comportant au moins une partie d'une ou plusieurs des parois transversales (54B, 55B) du boîtier et, dans la position ouverte du couvercle, l'espace de réception du disque étant accessible de façon à permettre d'échanger rapidement le disque d'information, cassette dans laquelle le couvercle (516), à une seule de ses extrémités, est relié libre en pivotement au boîtier (52), l'axe de pivotement étant normal aux parois principales du boîtier.

2. Cassette selon la revendication 1, dans laquelle le couvercle (516) et le reste du boîtier sont pourvus d'étiquettes correspondantes (518; 519) comme indication visuelle que le couvercle 516 et le reste du boîtier font partie la paire.

3. Cassette selon la revendication 2, dans laquelle le couvercle (516) est pourvu d'une étiquette (518) s'étendant sur une paroi transversale (517) et au moins une partie de paroi principale voisine (53A).