



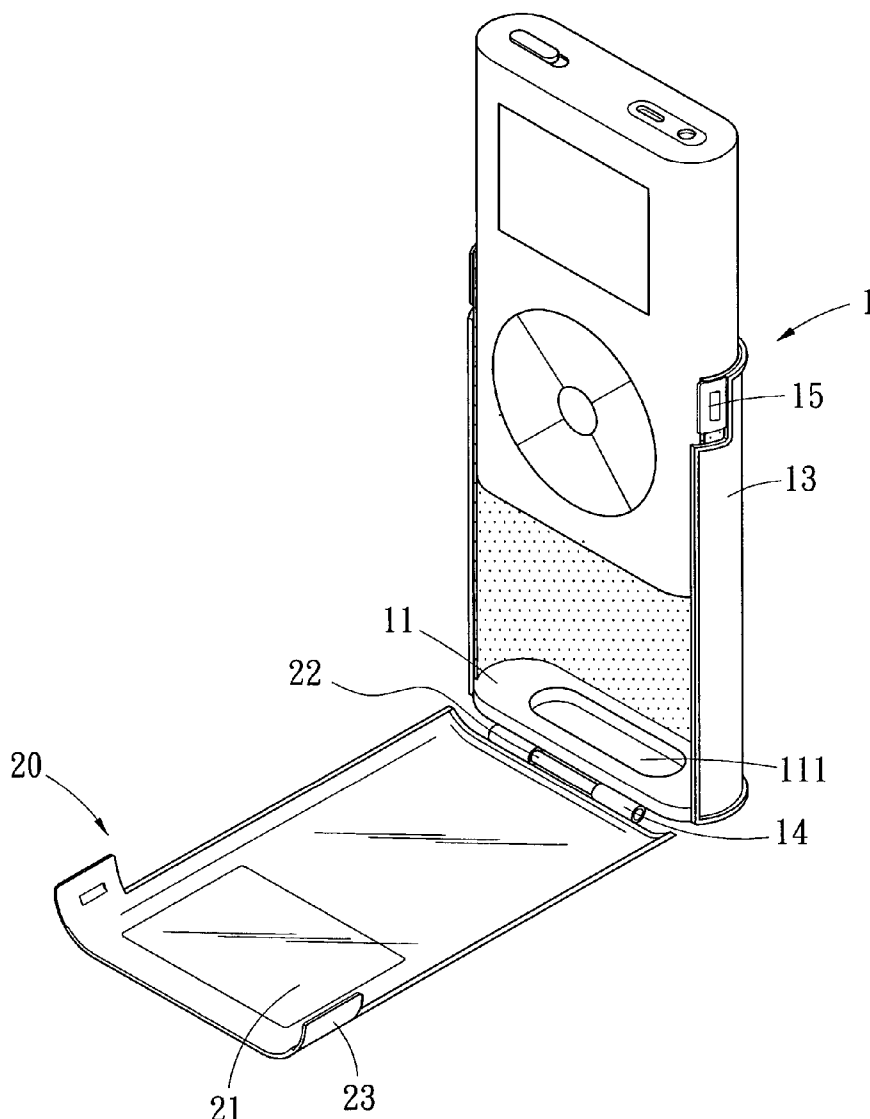
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(19) **United States**(12) **Patent Application Publication****Lu**(10) **Pub. No.: US 2005/0247584 A1**(43) **Pub. Date: Nov. 10, 2005**(54) **PROTECTION SHELL FOR PORTABLE VIDEO-AUDIO DEVICE**(52) **U.S. Cl. 206/320**(75) **Inventor: Kent Lu, Taipei (TW)**

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(73) **Assignee: DSI International Taiwan, Inc.**(21) **Appl. No.: 10/838,190**(22) **Filed: May 5, 2004****Publication Classification**(51) **Int. Cl.⁷ B65D 85/00**(57) **ABSTRACT**

A protection shell for portable audio device comprises a carry and a cover. The topside of the carry is open, and the bottom has a slot for passing wires of the visual/audio device. The carry is pivotally moveably connected with the bottom of the cover. When the cover and the carry closing, they can be locked by their locking elements, and the cover and the carry can form a protecting shell for a portable audio device. The protection shell is no need to open while using the visual/audio devices or transferring data with others. Thereby, the protection shell is suitable for protecting portable visual/audio device.



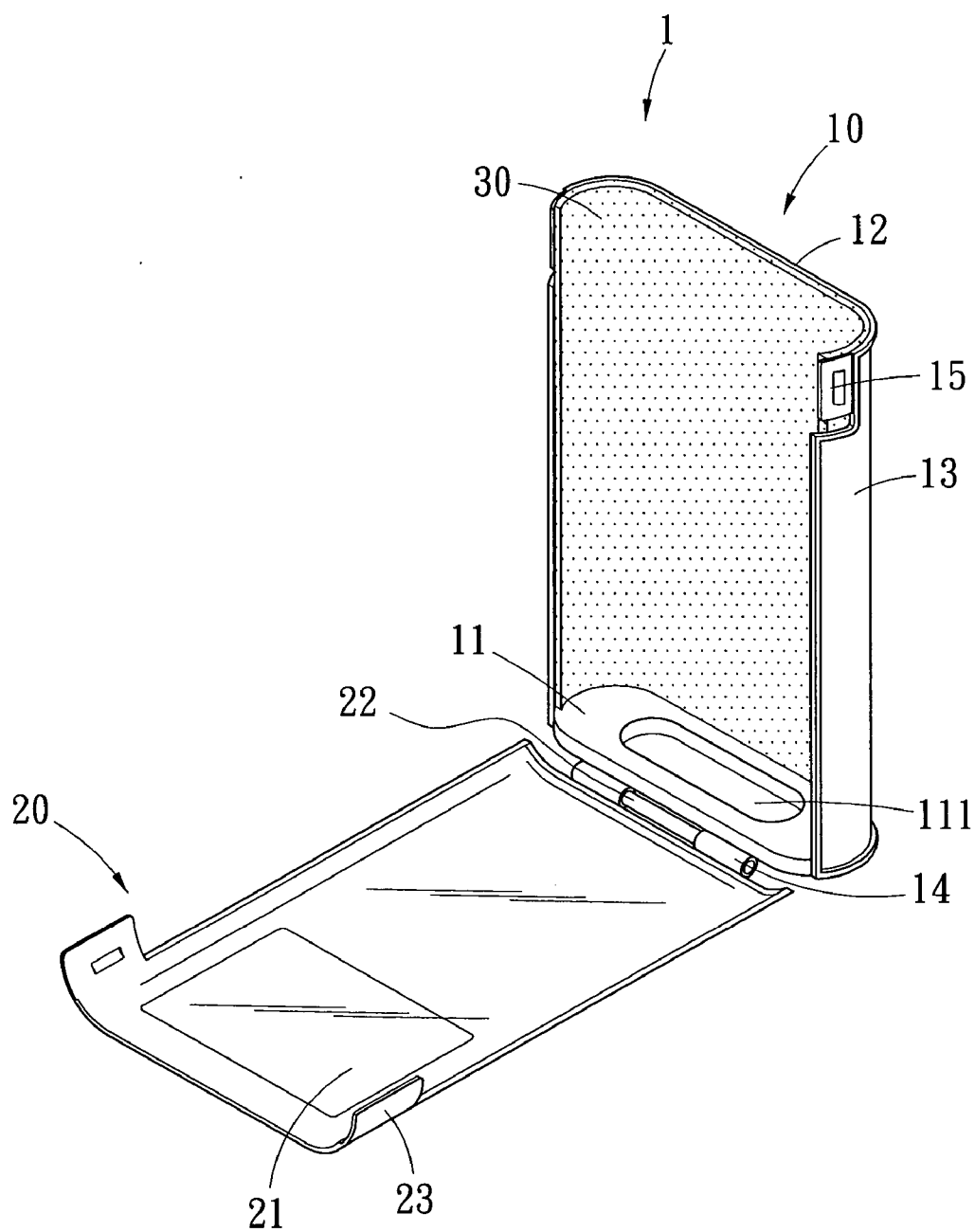


Fig. 1

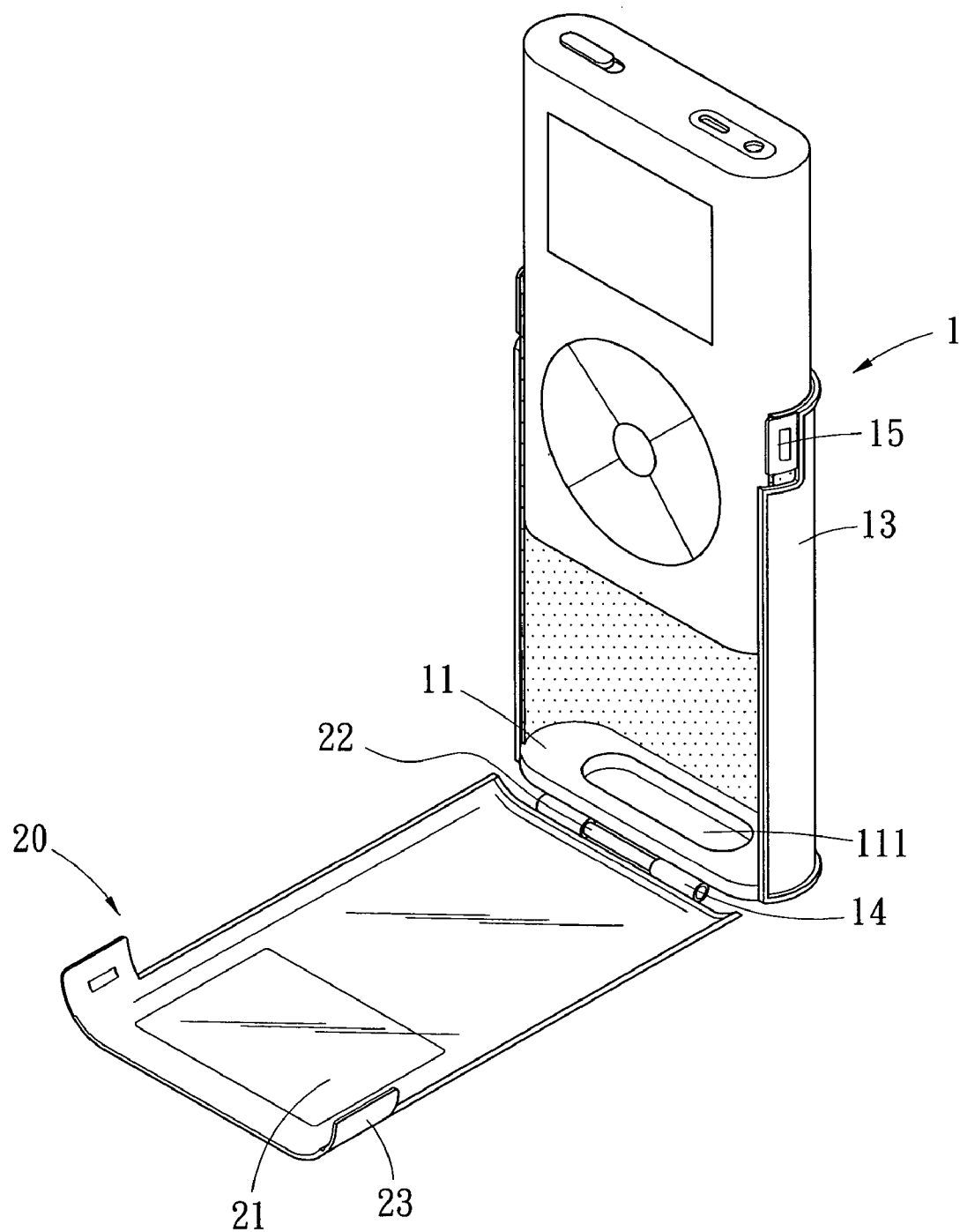


Fig. 2

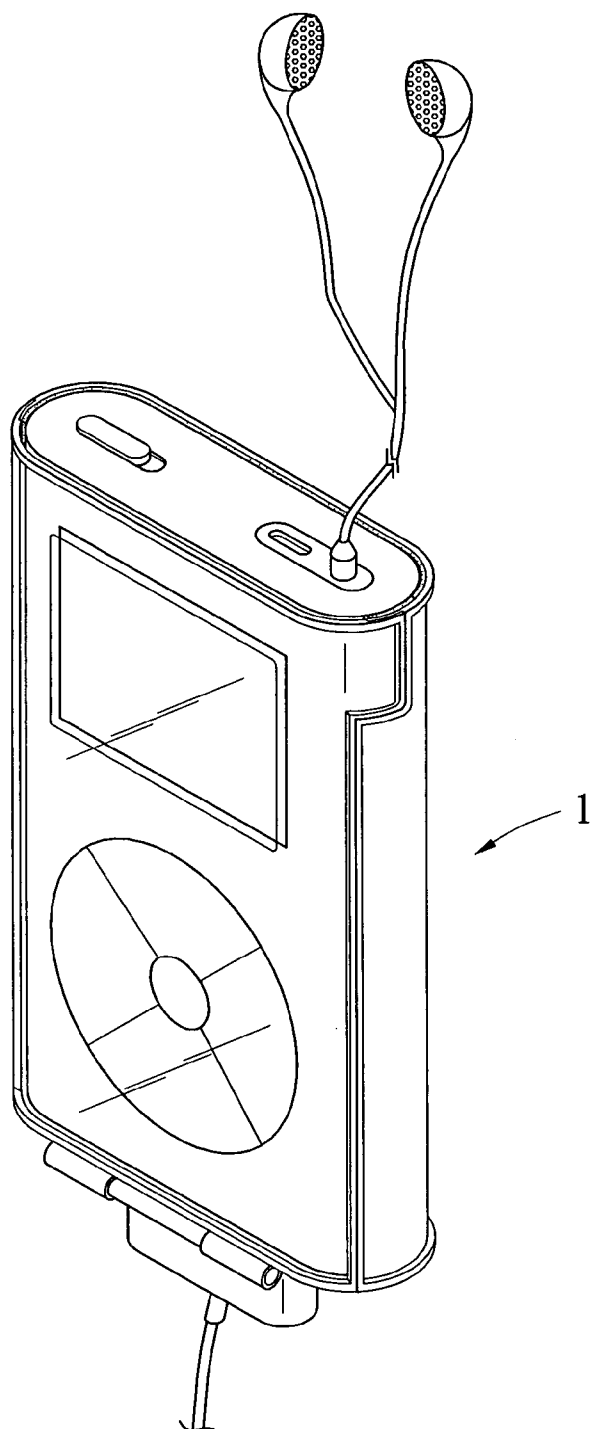


Fig. 3

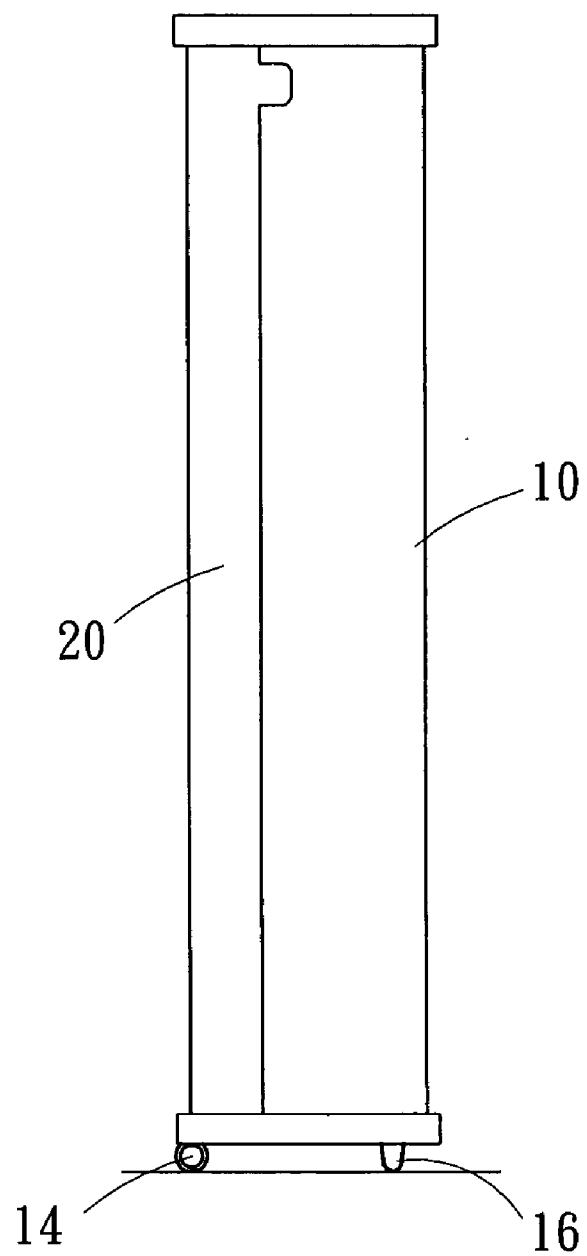


Fig. 4

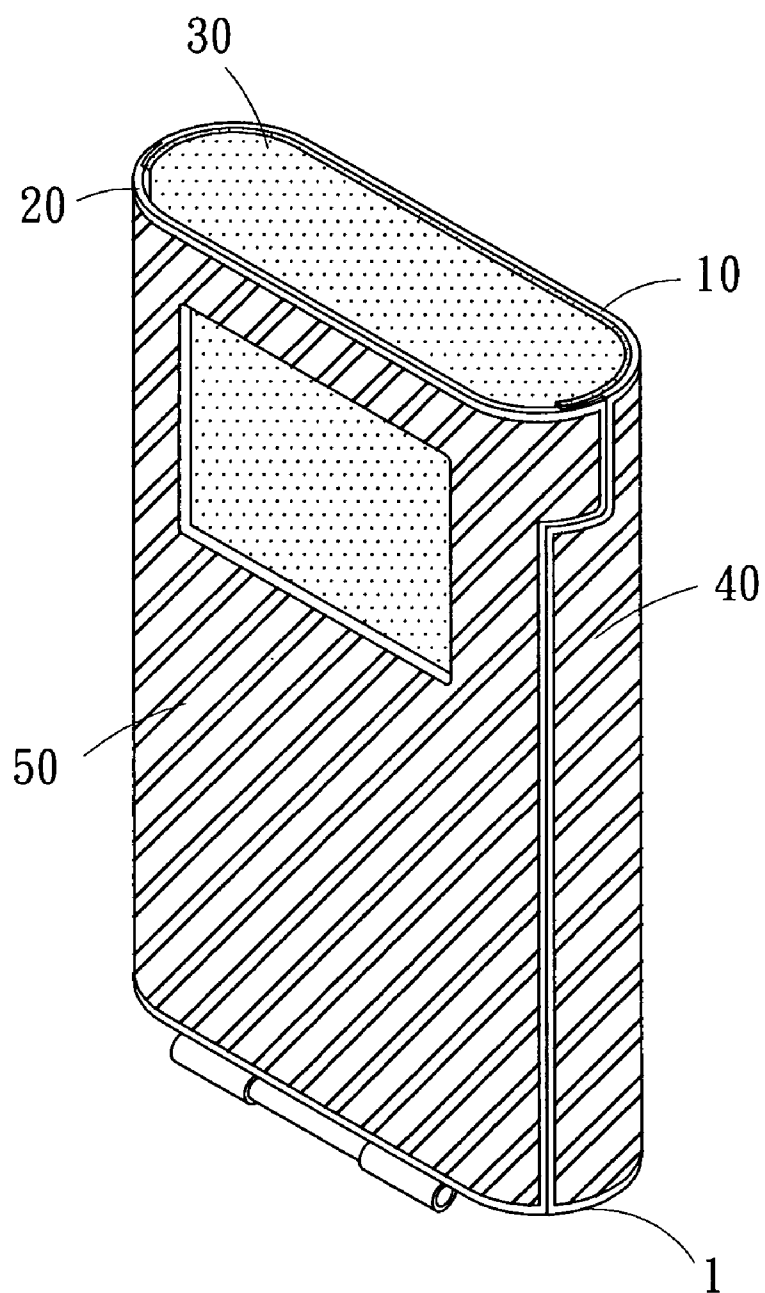


Fig. 5

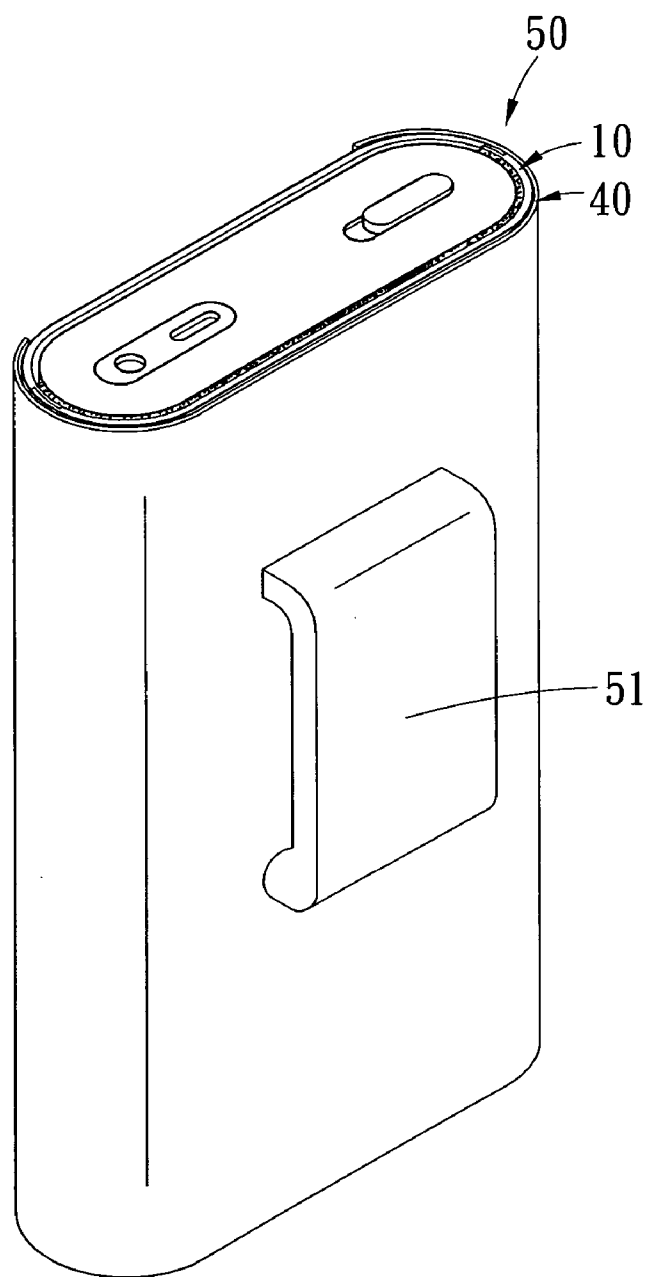


Fig. 6

PROTECTION SHELL FOR PORTABLE VIDEO-AUDIO DEVICE

FIELD OF THE INVENTION

[0001] The present invention relates to a protection shell for portable video-audio devices, which consists of a carry and a cover. At the bottom of the carry there is a slot for wire communication of the video-audio devices. The connection between the carry and the cover is pivotally movable in order to make the shell be able to be covered by the cover. When the cover covers on the carry, they form a protection shell for portable video-audio device by means of the mutual lock between the locking elements of the carry and the cover. The present invention is used to protect various portable video-audio devices.

BACKGROUND OF THE INVENTION

[0002] With the progress of technology and various needs of personal life, there are more and more kinds of video-audio devices provided nowadays. The video-audio products with high assessment in consumer goods market are the portable video-audio devices, which are convenient for users carrying and enjoyment. Especially in order to express the taste and style of the users and to be easily hanged and carried, design about the exterior fashion model and the whole quality sense become emphasis points for such kind of video-audio devices usually, and need some protection.

[0003] The conventional protection means for current products include: some using outer shell, made from materials with higher hardness and corrosion resistance, and some others using additional leather covers or other protection covers, for better protection from damages and more beauty by colors and shapes.

[0004] Because competition is keen in the video-audio device market, new products are brought forth continuously. For the coming video-audio devices, function is no longer the only point for consumers purchasing, accessories with cool looking, and special design to be selected are. Only such kind products can successfully reach the consumers' demands and become the winner of the market.

[0005] Moreover, most of current portable video-audio devices possess the function of loading data from computers, but the conventional protection shells mostly do not provide accompanied functional structure for, and fail to satisfy the demands of communication connection.

[0006] In view of the above defects to be solved for providing protection shell for portable video-audio devices, the inventor provides the present invention based on his professional experience of years in repeated experiments and improvements.

SUMMARY OF THE INVENTION

[0007] The main object of the present invention is to provide a protection shell for portable video-audio devices. It provides good protection for portable video-audio devices, and also has good designed openings for wire passing and communication. A user can easily insert an earphone into the devices' earphone hole and transfer/download data without taking the protection shell off.

[0008] In order to achieve the object stated above, the protection shell for portable video-audio device according to

the present invention includes a carry and a cover. The carry has an opening at its top and a slot at its bottom for wire communication. The carry is pivotally and movably connected with the bottom of the cover in such a way that the carry can be covered by the cover by way of the mutual lock between the locking elements of them. Thereby, the carry and the cover can form a protection shell for portable video-audio device. The protection shell does not need to be taken off when users using for listening to and transferring data. The protection shell is suitable to protect various video-audio devices.

[0009] There are embodiments described in details below to allow the present invention be able to be understood clearly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective view of the first preferred embodiment according to the present invention.

[0011] FIG. 2 is a schematic view of the present invention with a video-audio device inside.

[0012] FIG. 3 is a schematic view of the present invention in which there being a video-audio device connected with the other device outside.

[0013] FIG. 4 is a schematic view of the protection shell in standing state.

[0014] FIG. 5 is a schematic view of the second preferred embodiment according to the present invention.

[0015] FIG. 6 is a view showing an application embodiment with a hang shell on the outside.

DETAILED DESCRIPTION OF THE INVENTION

[0016] As shown in FIGS. 1 and 2, the protection shell 1 for portable video-audio device according to the present invention consists of a carry 10 and a cover 20, which surround the portable video-audio device.

[0017] The carry 10 has a bottom 11, a back 12 and two sides 13 which form a space for holding a portable video-audio device. The bottom 11 has a slot 111 and there is a pivotal connection part 14 at one end of the bottom 11 for connecting with the cover 20. The ends of the two sides 13, far apart from the bottom 11, are respectively provided with the first locking elements 15.

[0018] The cover 20 is a transparent plate and has a display area 21 on its upper part, and a connection element 22 at its bottom for connection with the said pivotal connection part 14. The ends of the two sides of the cover 20, far apart from the bottom 11, are respectively provided with the second locking elements 23 which correspond to the said first locking elements 15.

[0019] Thereby, the cover 20 can be pivotally connected to and cover on the shell 10 by means of the connection element 22, and can be movably opened and closed by way of the lock between the first and the second locking elements 15, 23. For the design of the structure, the back 12 and the bottom 11 of the carry 10 can be plate form and the two sides 13 can be convex outwards. The first locking elements 15 consist of openings provided on the top part of the two sides

13. The inner surface of the carry **10** can also be provided with soft cushion **30** for protecting the portable video-audio device.

[0020] The soft cushion **30** can also supply friction to slow down and avoid the wear of the surface of the portable video-audio device when the later is taken in from the top, and to fasten up and avoid the fall of the portable video-audio device when the later is held.

[0021] The two sides of the cover **20** are slightly concave inwards and the tops of the two sides are respectively provided with locking blocks used as the said second locking elements **23**, which can engage with the openings of the said first locking elements **15**.

[0022] As shown in **FIG. 2**, the top of the carry **10** is open, so the portable video-audio device ipod (the product of Apple computer Co.) can be easily taken in. When the portable video-audio device ipod is taken in it can move along the soft cushion **30**, and it can closely attach to and be protected by the protection shell **1** by way of the soft cushion **30** after taking in. In the meanwhile, the transfer terminal part at the ipod bottom can face to the slot **111** of the carry **10**.

[0023] After ipod is taken in, the cover **20** can be turned and cover on the carry **10** due to the pivotal connection between the connection part **14** and the connection element **22**, and the cover **20** and the carry **10** can be fixed together by way of the lock between the first locking elements **15** and the second locking elements **23**. Because the display screen of ipod faces to the display area **21** of the cover **20** and the cover **20** is transparent, the user can see the display message of ipod through the cover **20**.

[0024] Referring to **FIG. 3**, after ipod is taken in the protection shell **1**, the transfer wire for loading the data stored in computer can be connected from the transfer terminal part at ipod bottom to computer through the slot **111** of the carry **10**. The switch and the hole for earphone of ipod emerge at the open end of the protection shell, this brings users convenience to control and use.

[0025] As shown in **FIGS. 1 and 4**, at the opposite end of the connection part **14** of the carry **10** there are more than two protuberances **16** used for the lying or standing of the protection shell **1**. Because the topside of the protection shell **1** is open fully, ipod can also be taken in or out through the top opening after the carry **10** was covered. This is rather convenient for use.

[0026] As shown in **FIGS. 1 and 5**, the protection shell **1** for portable video-audio device according to the present invention can also be provided with metal shells **40** and **50**. The metal shells **40** and **50** are installed on the frames protruded from the carry **10** and the cover **20**, respectively. The former has similar shape as the later. They can promote the quality sense of the product. Additionally, the metal shell **50** has an empty window outside the display area **21** for letting the later be able to be seen.

[0027] Referring to **FIG. 6**, after assembling of the two embodiments stated above, their outside can be provided with a hang shell **50** with a hook **51** at its back. After the user puts ipod into the protection shell **1** of the second embodiment of the present invention, the protection shell **1** with

ipod can be taken in the hang shell **50** with hook **51** so that it can hang easily on the leather belt for carrying portably.

[0028] Therefore, the protection shell for portable video-audio device according to the present invention has the advantages stated below:

[0029] 1. Due to the space structure design, the protection shell for portable video-audio device according to the present invention has better protection for special kind of portable video-audio devices, and owing to the openings provided on the shell, the protection shell need not be opened in wire communication, so it has good practicality and convenience.

[0030] 2. The present invention can provide selection and match for consumers to promote the appearance beauty sense for special kind of portable video-audio device. This can satisfy the demand of users in portable video-audio device market with the trend of stressing personal style and taste.

[0031] 3. The present invention provides not only the protection shell for well protecting portable video-audio device but also the holding part for users easy carrying. The present invention can satisfy the different needs in use.

[0032] In conclusion, according to the description disclosed above, the present invention surely can get the expected object thereof to provide a protection shell for portable video-audio device. The present invention is novel and inventive, having thus described my invention, what I claim as new and desire to be secured by Letters Patent of the United States are:

What is claimed is:

1. A protection shell for portable video-audio device comprises a carry and a cover;

the carry having a bottom, a back and two sides which form a space for holding the portable video-audio device, there being a soft cushion on the inner surface of the carry, a slot at the bottom, a pivotal connection part at the side edge of the bottom, there being first locking elements respectively provided at the ends of the two sides, far from the bottom; and

the cover being a transparent plate, at its upper part there being a display area, at its bottom there being a pivotal connection element for pivotal connecting with the said pivotal connection part, and there being second locking elements respectively provided at the ends of the two sides, far from the bottom,

thereby, the cover being able to pivotally and movably cover on the carry by means of the pivotal connection part and the pivotal connection element, and being able to movably be opened and closed by way of the lock of the first and the second locking elements.

2. The protection shell for portable video-audio device as claimed in claim 1, wherein the back and the bottom of the carry are plate shape, and the two sides are convex outwards, at the upper parts of the two sides of the carry there are openings provided as the first locking elements, and at the upper parts of the two sides of the cover there are locking blocks provided as the second locking elements.

3. The protection shell for portable video-audio device as claimed in claim 2, wherein after assembled, the topside of

the protection shell is open fully, and under the bottom of the carry there are equal height protuberances used for the standing of the protection shell.

4. The protection shell for portable video-audio device as claimed in claim 2, wherein on the outer surfaces of the carry there are protruding frames for installing a metal shell which has similar shape as the protection shell but bigger, at the other side, at the upper part of the metal shell there is an opening for the display area of the portable video-audio device being able to be seen.

5. The protection shell for portable video-audio device as claimed in claim 1, wherein outside the protection shell a

hang shell with a hook is at its back, thereby the protection shell can be held at supporters such as a user's belt or a back bag's shoulder belt etc.

6. The protection shell for portable video-audio device as claimed in claim 2, wherein outside the protection shell a hang shell with a hook is at its back, thereby the protection shell can be held at supporters such as a user's belt or a back bag's shoulder belt etc.

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