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(54) **HOUSING FOR PORTABLE ELECTRONIC DEVICE**

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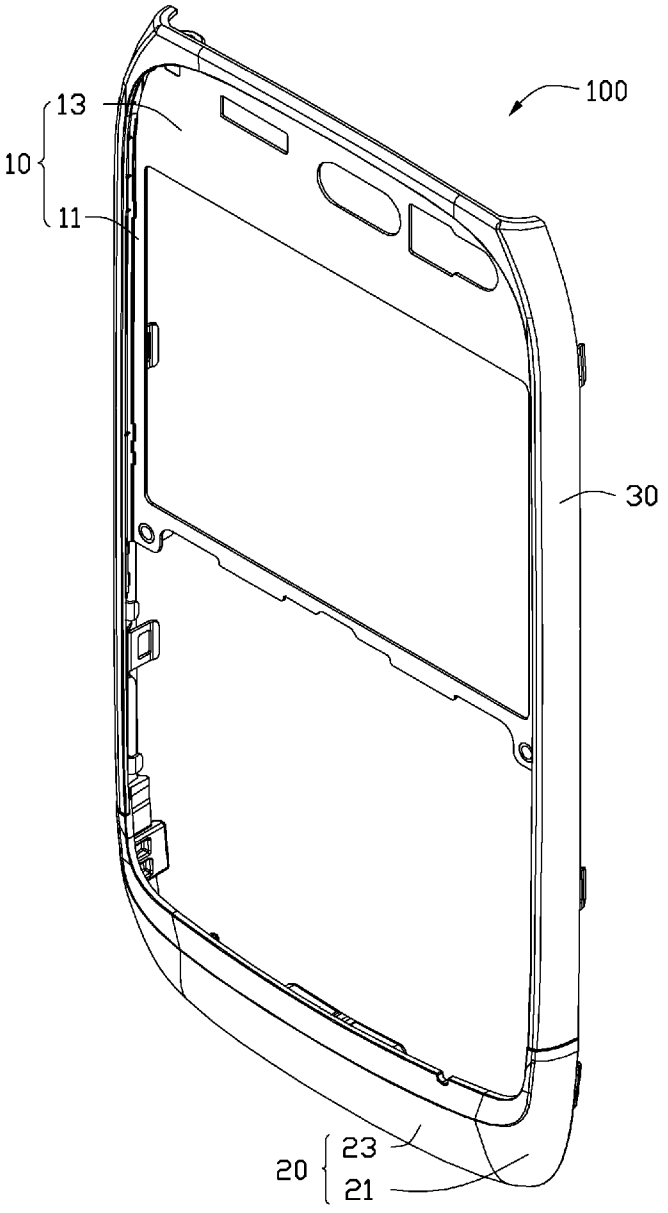
(57) **ABSTRACT**

A housing includes a first section and a second section. The first section is made of metal. The first section includes two opposite first sidewall and a first connecting panel connecting the first sidewall. The second section is made of plastic. The second section is integrally molded on the first sidewalls. Each first sidewall defines a number of retaining holes, the second section has a number of retaining pins, and each retaining pin is retained in the retaining hole to fix the first section to the second section.



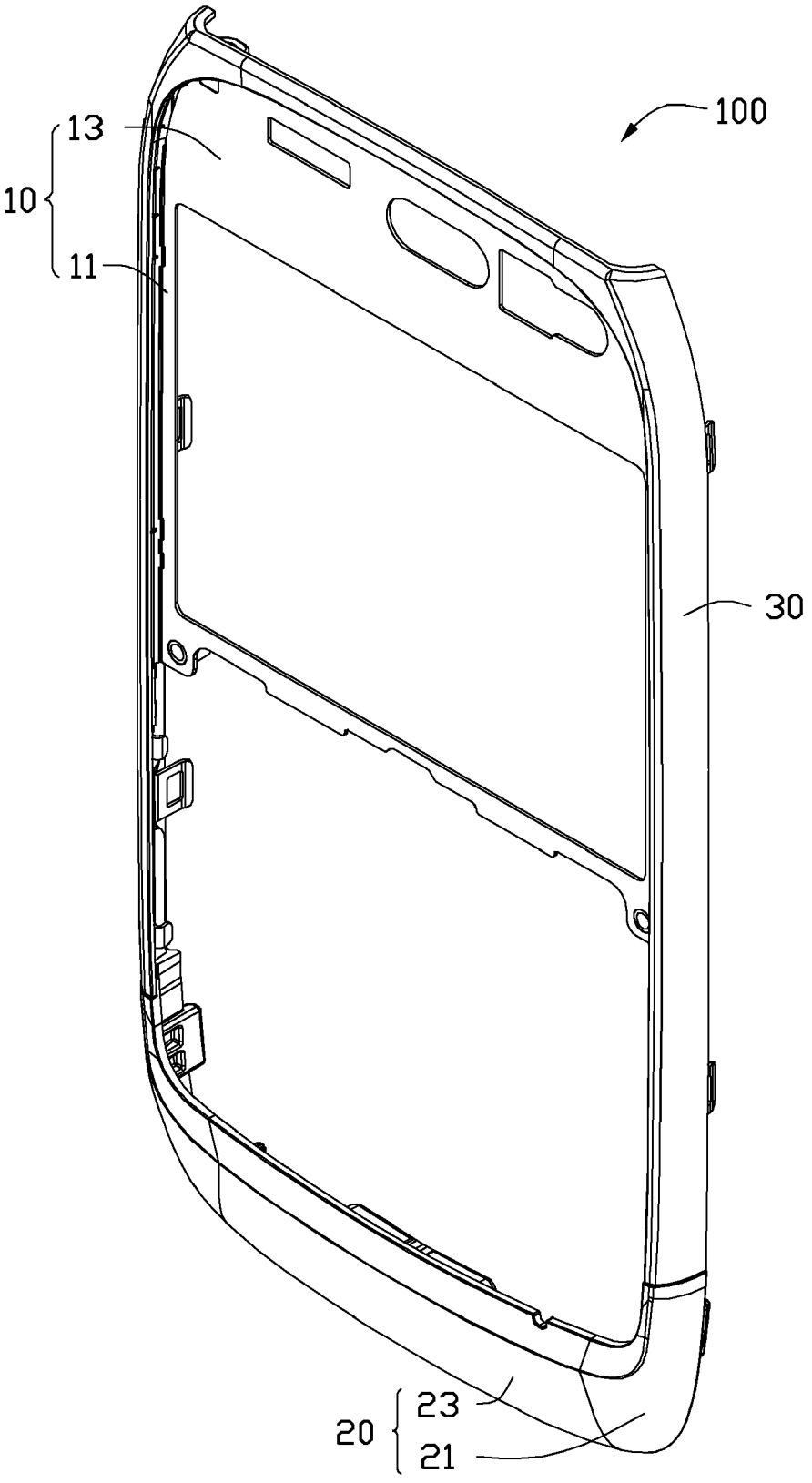


FIG. 1

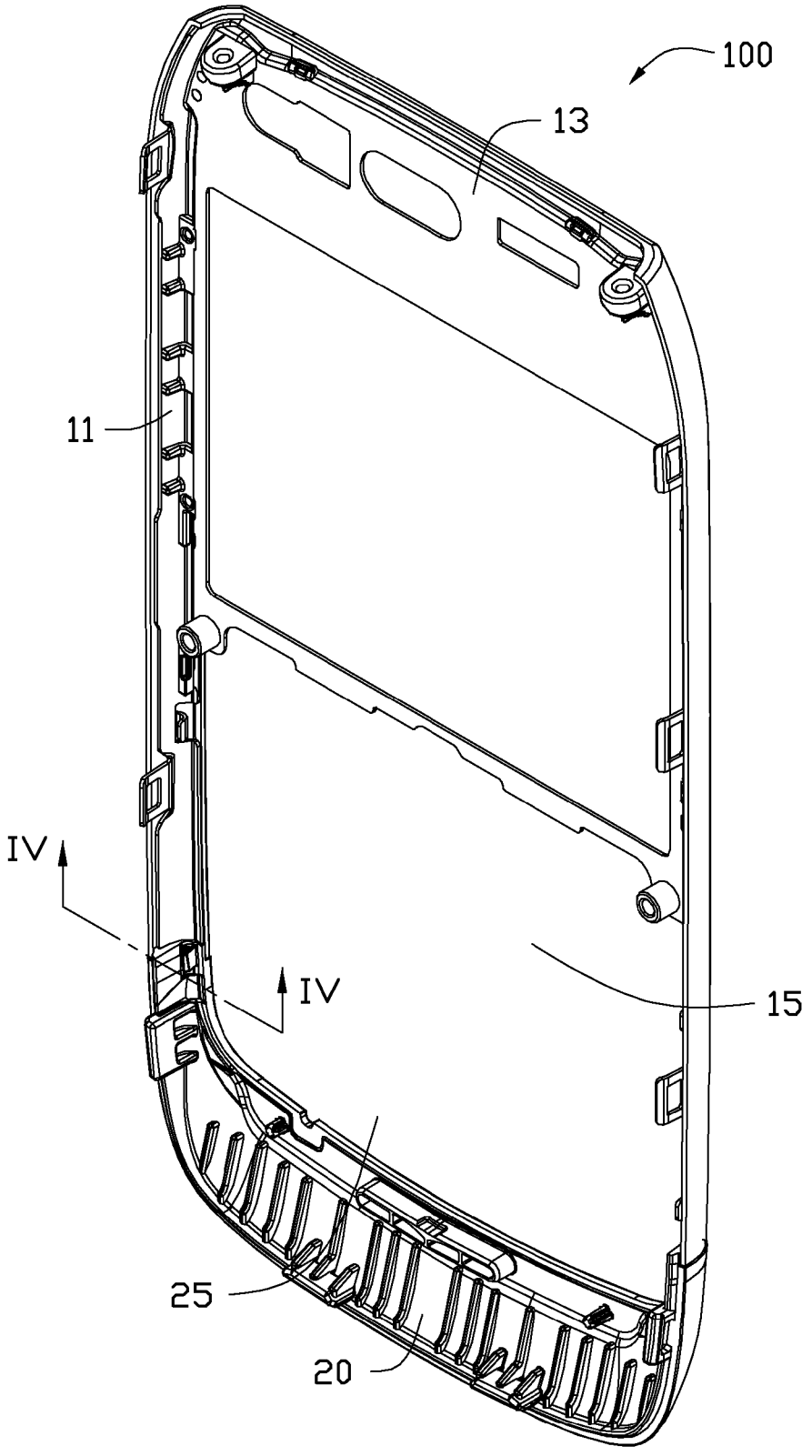


FIG. 2

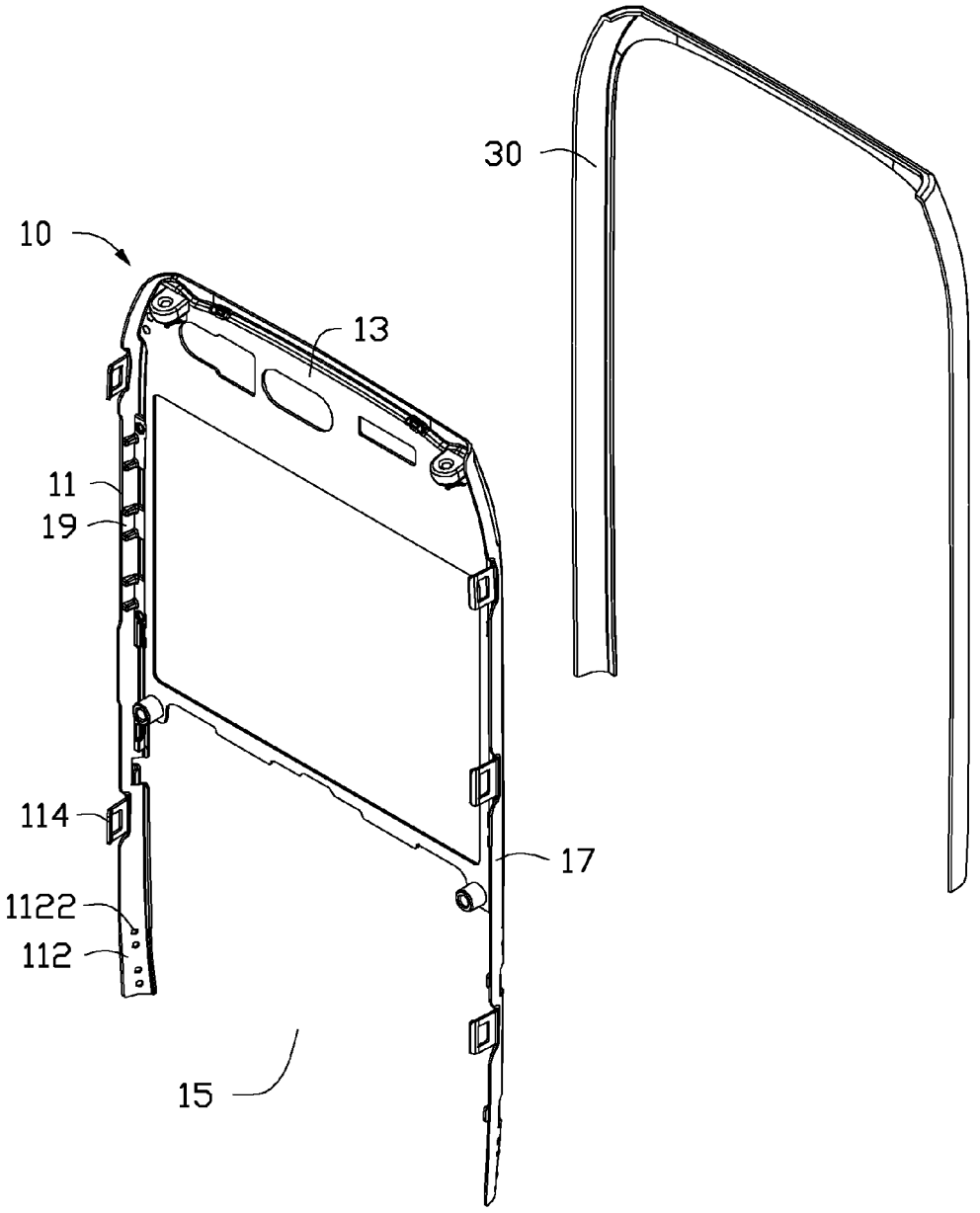


FIG. 3

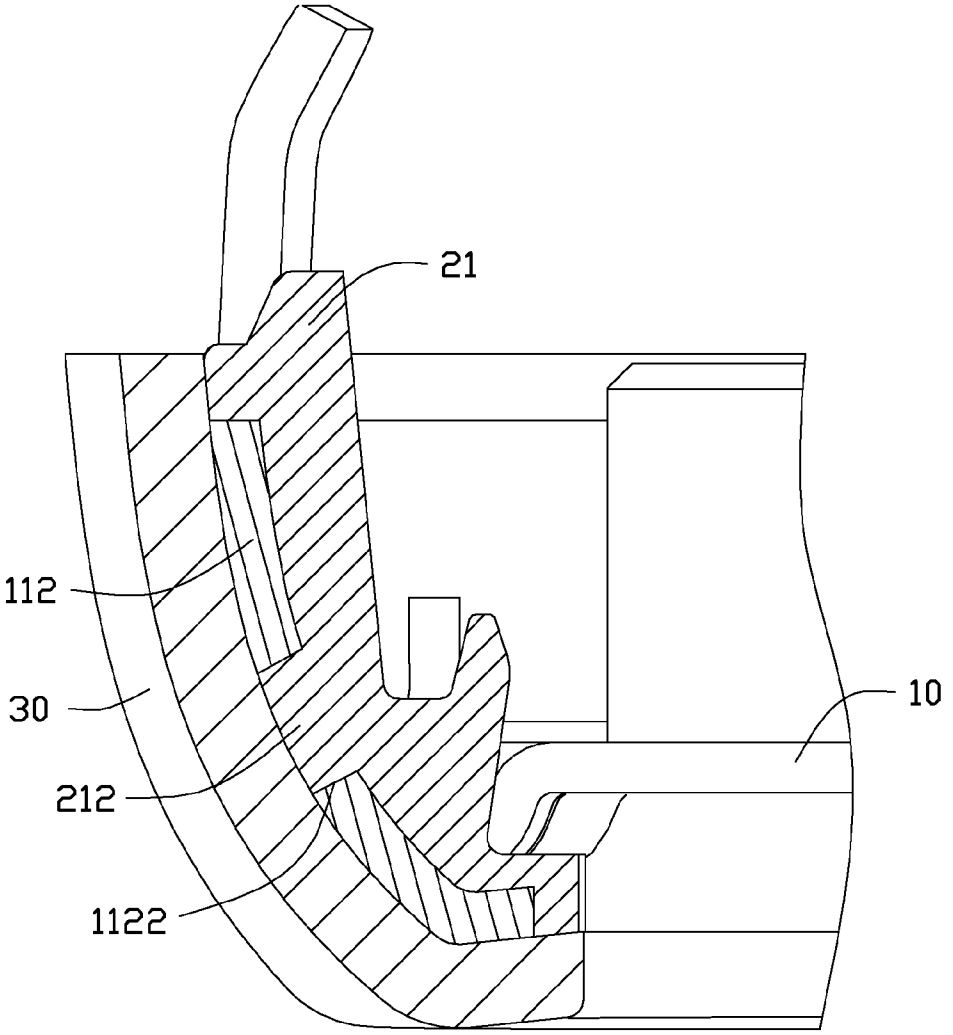


FIG. 4

HOUSING FOR PORTABLE ELECTRONIC DEVICE

BACKGROUND

[0001] 1. Technical Field

[0002] The disclosure generally relates to housings, and particularly relates to housings used in portable electronic devices.

[0003] 2. Description of Related Art

[0004] With the development of wireless communication and information processing technology, portable electronic devices, such as mobile telephones and electronic notebooks are now in widespread use. External appearance of the housing of the portable electronic device can be one of the key factors attracting consumers.

[0005] The housing typically includes a first section and a second section molded to the first section to achieve an attractive external appearance. However, the sections can easily separate from each other because the binding force between the sections is usually not large enough.

[0006] Therefore, there is room for improvement within the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Many aspects of the exemplary housing for portable electronic device can be better understood with reference to the following drawings. These drawings are not necessarily drawn to scale, the emphasis instead being placed upon clearly illustrating the principles of the exemplary housing. Moreover, in the drawings like reference numerals designate corresponding parts throughout the several views. Wherever possible, the same reference numbers are used throughout the drawings to refer to the same or like elements of an embodiment.

[0008] FIG. **1** is a schematic and assembled view of a housing according to an exemplary embodiment.

[0009] FIG. **2** is another view of the housing of FIG. **1** viewed from another aspect.

[0010] FIG. **3** is a partially exploded view of the housing shown in FIG. **2**.

[0011] FIG. **4** is a cross-sectional view of the housing shown in FIG. **2** along the line of IV-IV.

DETAILED DESCRIPTION

[0012] For illustrative purposes, the device is an electronic device such as a radiotelephone. The radiotelephone described herein is a representation of the type of wireless communication device that may benefit from the present disclosure. However, it is to be understood that the present disclosure may be applied to any type of hand-held or portable device including, but not limited to, the following devices: cordless phones, paging devices, personal digital assistants, portable computers, pen-based or keyboard-based handheld devices, remote control units, portable media players that have wireless communication capability and the like. Accordingly, any reference herein to the radiotelephone should also be considered to apply equally to other portable wireless electronic devices.

[0013] An exemplary embodiment of a housing **100** of an electronic device is shown in FIGS. **1** and **2**. The housing **100** includes a first section **10**, a second section **20** retained (e.g., integrally molded) to the first section **10**, and a decorative element **30** fixed (e.g., by laser beam welding) on the first section **10**. In this exemplary embodiment, the first section **10** and the decorative element **30** are both made of metal, and the second section **20** is made of plastic.

[0014] Referring to FIG. **3**, the first section **10** is substantially U-shaped in this exemplary embodiment. The first section **10** includes two opposite first sidewalls **11** and a first connecting panel **13** connecting ends of the first sidewalls **11**. The first section **10** defines a first opening **15** opposite to the first connecting panel **13**. Each first sidewall **11** includes a distal end **112** opposite to the first connecting panel **13** and defines a plurality of retaining holes **1122** through the distal end **112**. The retaining holes **1122** a retain the second section **20** to the first section **10**. The first section **10** further includes an outer surface **17** and an inner surface **19** opposite to the outer surface **17**. Each first sidewall **11** further includes a plurality of latching elements **114** protruding from corresponding inner surface **19**, for latching the housing **100** to a main body (not shown) of the electronic device.

[0015] Referring to FIGS. **2** and **4**, the second section **20** is substantially U-shaped in this exemplary embodiment. The second section **20** includes two opposite second sidewalls **21** and a second connecting panel **23** connecting ends of the second sidewalls **21**. The second section **20** defines a second opening **25** opposite to the first connecting panel **13**. The second opening **25** communicates with the first opening **15** when the second section **20** is connected to the first section **10**. Each second sidewall **21** includes a plurality of retaining pins **212** corresponding to corresponding retaining holes **1122**. Each retaining pin **212** is retained in one of the retaining holes **1122** to reinforce the engagement between the first section **10** and the second section **20**.

[0016] Referring to FIGS. **1** and **3**, the decorative element **30** is substantially U-shaped in this exemplary embodiment. The decorative element **30** is fixed on the first section **10**.

[0017] Referring to FIGS. **2-4**, a method for manufacturing a housing **100** may include the following steps. A first section **10** defining a plurality of retaining holes **1122** is located in a mold cavity of a mold. Molten plastic is injected into the mold cavity to mold a second section **20** with portions of the molten plastic flowing into the retaining holes **1122** to mold one retaining pin **212** in each retaining hole **1122**. A decorative element **30** is fixed to the first section **10** by some conventional method such as laser beam welding.

[0018] The housing **100** includes the first section **10** with a plurality of the retaining holes **1122** and the second section **20** with a plurality of retaining pins **212**, and each retaining pin **212** is retained in one of the retaining holes **1122**, so the first section **10** can be firmly fixed to the second section **20** by the combination of the retaining holes **1122** and the retaining pins **212**.

[0019] It is to be understood, however, that even through numerous characteristics and advantages of the exemplary disclosure have been set forth in the foregoing description, together with details of the structure and function of the disclosure, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the disclosure to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A housing, comprising:

a first section, the first section including two opposite first sidewalls and a first connecting panel connecting the first sidewalls; and

a second section, the second section integrally molded on the first sidewalls;

wherein each first sidewall defines a plurality of retaining holes, the second section has a plurality of retaining pins, each retaining pin is retained in the retaining hole to retain the first section to the second section.

2. The housing as claimed in claim **1**, wherein each first sidewall has a distal end opposite to the first connecting panel, the retaining holes are defined through the distal ends.

3. The housing as claimed in claim **2**, wherein the second section includes two opposite second sidewalls and a second connecting panel connecting the second sidewalls, each second sidewall is retained to one of the distal ends.

4. The housing as claimed in claim **1**, further comprising a decorative element, wherein the first section includes an outer surface; the decorative element is retained on the outer surface.

5. The housing as claimed in claim **4**, wherein the decorative element is retained on the outer surface by laser beam welding.

6. The housing as claimed in claim **4**, wherein the decorative element is made of metal.

7. The housing as claimed in claim **6**, wherein the first section is made of metal and the second section is made of plastic.

8. A housing, comprising:

a first section, the first section including a first sidewall; and

a second section, the second section integrally molded on the first sidewall;

wherein the first sidewall defines at least one retaining hole, the second section has at least one retaining pin, each retaining pin is retained in a corresponding retaining hole to retain the first section to the second section.

9. The housing as claimed in claim **8**, wherein each first sidewall has a distal end opposite to the first connecting panel, the retaining holes are defined through the distal ends.

10. The housing as claimed in claim **9**, wherein the second section includes two opposite second sidewalls and a second connecting panel connecting the second sidewalls, each second sidewall is retained to one of the distal ends.

11. The housing as claimed in claim **8**, further comprising a decorative element, wherein the first section includes an outer surface; the decorative element is retained on the outer surface.

12. The housing as claimed in claim **11**, wherein the decorative element is retained on the outer surface by laser beam welding.

13. The housing as claimed in claim **11**, wherein the decorative element is made of metal.

14. The housing as claimed in claim **13**, wherein the first section is made of metal and the second section is made of plastic.

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