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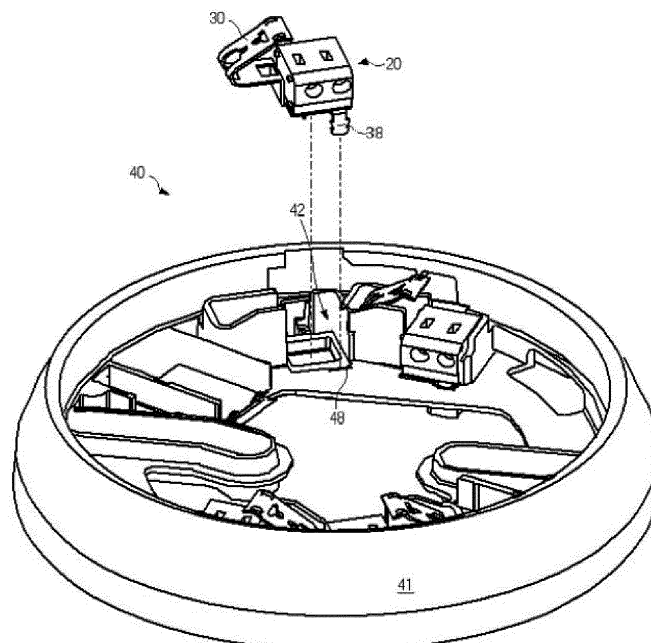
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BA ME(71) Applicant: **Siemens Aktiengesellschaft****80333 München (DE)**(72) Inventor: **Qi, Wen Long****100038 Beijing (CN)**(30) Priority: **27.10.2011 CN 201110332643****(54) Mounting base for detachable fixing of electronic device**

(57) The present invention provides a mounting base (40) for detachable fixing of an electronic device, comprising a wiring assembly which can be used to connect at least one external wire to a connection terminal of the electronic device. The wiring assembly comprises at least one self-locking connector block (20) and at least one contact plate (30). The connector block comprises at least one connecting hole and at least one connecting end, the connecting hole being capable of clamping a wire therein. The contact plate is provided with a contacting part and a connecting part; the self-locking connector

block can be fixed to the connecting part by way of the connecting end, and the contact plate can be electrically connected to the connection terminal of the electronic device via the contacting part. By using a commercially available self-locking connector block, the mounting base for detachable fixing of an electronic device is able to conveniently achieve the fixing of the wire to the connector block, and the detachment thereof; moreover, the whole process of fixing and detaching the wire is a simple and easy operation, and the space occupied by the wiring assembly is very small.

FIG 2

Description

Technical field

[0001] The present invention relates to a mounting base, in particular to a mounting base for detachable fixing of an electronic device; for example, a mounting base for detachable fixing of an electronic device is used as a mounting base in a smoke detector, for connecting a wire of a fire terminal controller to the smoke detector.

Background art

[0002] A smoke detector can send detected fire information to a fire control terminal, and receive control signals from the fire control terminal. The smoke detector is provided therein with a control circuit board on which a controller is provided, this controller being used to send fire information to the fire control terminal, and to control the actions of the whole smoke detector according to commands from the fire control terminal. The control circuit board of the smoke detector is connected to the fire control terminal by a wire, a wiring assembly for connecting the control circuit board to the wire being provided in the smoke detector; the wire is fixed to the wiring assembly by way of a bolt, with the result that it requires time and effort to connect the wire to the wiring assembly, and to detach it therefrom.

Content of the invention

[0003] An object of the present invention is to provide a mounting base for detachable fixing of an electronic device, in order to simplify the connection of the wire to the wiring assembly, and the detachment thereof.

[0004] Another object of the present invention is to provide a smoke detector which uses the wiring assembly.

[0005] The present invention provides a mounting base for detachable fixing of an electronic device, comprising a wiring assembly which can be used to connect at least one external wire to a connection terminal of the electronic device. The wiring assembly comprises at least one self-locking connector block and at least one contact plate. The connector block comprises at least one connecting hole and at least one connecting end, the connecting hole being capable of clamping a wire therein. The contact plate is provided with a contacting part and a connecting part; the self-locking connector block can be fixed to the connecting part by way of the connecting end, and the contact plate can be electrically connected to the connection terminal of the electronic device via the contacting part. By using a commercially available self-locking connector block, the mounting base for detachable fixing of an electronic device is able to conveniently achieve the fixing of the wire to the connector block, and the detachment thereof; moreover, the whole process of fixing and detaching the wire is a simple and easy operation, and the space occupied by the wiring

assembly is very small.

[0006] In another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the connector block comprises two connecting holes and two operating holes separately corresponding to the connecting holes, each operating hole controlling the clamping and detachment of a wire in the connecting hole corresponding thereto.

[0007] In yet another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the connecting end of the connector block is two pins arranged to separately correspond to the connecting hole.

[0008] In still another illustrative embodiment of the mounting base for detachable fixing of an electronic device, mounting holes corresponding to the pins are provided on the connecting part, the pins being capable of penetrating the mounting holes, and the connector block is fixed on the connecting part via the pins by welding.

[0009] In still another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the mounting base comprises at least one accommodating space in which the wiring assembly can be mounted.

[0010] In still another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the contact plate of the wiring assembly also comprises a pair of inserting parts, and the mounting base is also provided with a pair of slots, the wiring assembly being capable of being mounted in the accommodating space by inserting the inserting parts into the slots.

[0011] In still another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the electronic device is a detection device, in particular a smoke detector.

[0012] In still another illustrative embodiment of the mounting base for detachable fixing of an electronic device, the electronic device is an alarm device, in particular a sounder, a beacon or a sounder/beacon combination.

Description of the accompanying drawings

[0013] The accompanying drawings below merely describe and explain the present invention schematically, without restricting the scope thereof.

Fig. 1 is an exploded schematic diagram for explaining the three-dimensional structure of an illustrative embodiment of the mounting base for detachable fixing of an electronic device.

Fig. 2 is an exploded schematic diagram for explaining the three-dimensional structure of another illustrative embodiment of the mounting base for detachable fixing of an electronic device.

Explanation of labels

[0014]

10	wire
20	self-locking connector block
22	connecting hole
24	connecting end
26	operating hole
30	contact plate
32	contacting part
34	connecting part
36	mounting hole
38	inserting part
40	mounting base
42	accommodating space
48	slot

[0015] The above-mentioned characteristics, technical features, advantages and embodiments of the mounting base for detachable fixing of an electronic device are illustrated further below by describing preferred embodiments in a clear and easily comprehensible way with reference to the accompanying drawings.

Particular embodiments

[0016] In order that the technical features, objects and effects of the invention may be understood more clearly, particular embodiments of the present invention will now be described with reference to the accompanying drawings, in which identical labels represent identical components or components which are similar in structure but have the same function.

[0017] In order to make the appearance of the figures concise, only those components which are relevant to the present invention are shown schematically in the various drawings; these do not represent the actual structure thereof as a product. In addition, in order to make the appearance of the figures concise and easy to understand, in some drawings, in the case of components having the same structure or function, only one of these is schematically drawn, or only one is marked.

[0018] Fig. 1 is an exploded schematic diagram for explaining the three-dimensional structure of an illustrative embodiment of the mounting base for detachable fixing of an electronic device; the figure takes the example of the mounting base for detachable fixing of an electronic device being applied in a smoke detector. As the figure shows, the mounting base 40 for detachable fixing of an electronic device is used to connect wires 10 of a fire control terminal to a control circuit board (not shown in the figure) of the smoke detector, so as to achieve data connection between the control terminal and the smoke detector.

[0019] As shown in Fig. 1, the mounting base for detachable fixing of an electronic device comprises a self-locking connector block 20 and a contact plate 30.

The self-locking connector block 20 is a commercially available product, and comprises two connecting holes 22 and one connecting end 24. The wires 10 can be clamped in the connecting holes 22 of the connector block 20. The contact plate 30 is provided with a contacting part 32 and a connecting part 34; the contacting part 32 can be electrically connected to the control circuit board of the smoke detector, with the connector block 20 being fixed to the connecting part 34. Electrical connection between the connector block 20 and the contact plate 30 is accomplished by way of electrical connection between the connecting end 24 of the connector block 20 and the connecting part 34 of the contact plate 30, thereby connecting the wires 10 electrically to the control circuit board.

[0020] By using a commercially available self-locking connector block, the mounting base for detachable fixing of an electronic device is able to conveniently achieve the fixing of the wire to the connector block, and the detachment thereof, thereby accomplishing a connection between the control circuit board of the smoke detector and the fire control terminal connected to the wires. For example, in the connector block of the self-locking type shown in Fig. 1, each connecting hole 22 is correspondingly provided with an operating hole 26; when a wire 10 is being mounted in the self-locking connector block 30, connection of the wire 10 to the connector block 20 can be achieved by inserting a screwdriver or other tool into the mounting hole 26 and pressing, then inserting the wire 10 into the connecting hole 22 and withdrawing the tool that was inserted into the operating hole 26. When it is necessary to remove the wire 10 from the connecting hole 22 in order to break the connection between the control terminal and the control circuit board, all that need be done is to insert a screwdriver or other tool into the operating hole 26 and press, and the wire 10 can then be detached from the connecting hole 22. The whole process of fixing and detaching the wire is a simple and easy operation, and the space occupied by the wiring assembly is very small; other types of self-locking connector block may also be used as required.

[0021] In the schematic embodiment shown in Fig. 1, the connector block 20 comprises two connecting holes 22 and two operating holes 26, each operating hole 26 being capable of independently controlling the clamping and detachment of a wire 10 in the connecting hole 22 corresponding thereto. The connector block 20 of one wiring assembly comprises two connecting holes 22 and is capable of achieving connection with two wires used to transmit the same signal, thus the reliability of connection of the wiring assembly is increased; the number of wires connected to the self-locking connector block can also be varied as required.

[0022] As Fig. 1 shows, the connecting end 24 of the connector block 20 is two pins arranged to separately correspond to the connecting hole 22; the embodiment shown in Fig. 1 includes two connecting holes, so four pins are correspondingly provided, but Fig. 1 only shows

two pins arranged to separately correspond to different connecting holes 22. Mounting holes 36 corresponding to the pins 24 are provided on the connecting part 34; fixing of the connector block to the contact plate and electrical connection therebetween is achieved by having the pins 24 penetrate the mounting holes 36, and then fixing the connector block 20 on the connecting part 34 via the pins 24 by welding. Self-locking connector blocks with other fixing methods may also be used as required, for example a surface-mounted self-locking connector block.

[0023] Fig. 2 is an exploded schematic diagram for explaining the three-dimensional structure of another illustrative embodiment of the mounting base for detachable fixing of an electronic device. In the structure shown in Fig. 2, the mounting base for detachable fixing of an electronic device comprises four of the above wiring assemblies. The wiring assembly comprises a connector block 20 and a contact plate 30, the mounting base 40 is provided with a bottom case 41, and the bottom case 41 is provided with accommodating spaces 42 for mounting the wiring assemblies, the accommodating spaces 42 being adapted to the shape of the wiring assemblies. In the structure shown in the figure, the contact plate 30 of the wiring assembly comprises a pair of inserting parts 38 (only one is shown in the figure), and the bottom case 41 is also provided with a pair of slots 48 (only one is shown in the figure); by inserting the inserting parts 38 of the contact plate 30 into the slots 48 of the bottom case 41, the contact plate 30 fitted with the connector block 20 can be firmly fixed in the accommodating space of the bottom case 41, thereby preventing contact with the control circuit board from being affected due to looseness of the contact plate 30 when the smoke detector is in use. Although there are four wiring assemblies mounted in the mounting base for detachable fixing of an electronic device shown in Fig. 2, the number of wiring assemblies used in the mounting base for detachable fixing of an electronic device may be varied as required.

[0024] The electronic device which can use the mounting base may be a detection device, in particular a smoke detector, and the electronic device is an alarm device, in particular a sounder, a beacon or a sounder/beacon combination.

[0025] In this text, "schematic" indicates "serving as a real example, an example or an explanation"; no graphical representation or embodiment described as "schematic" herein should be interpreted as a preferred or more advantageous technical solution.

[0026] It should be understood that although description is carried out according to various embodiments in this Description, it is not the case that each embodiment includes only one independent technical solution; this presentation method of the Description is merely for the sake of clarity. Those skilled in the art should regard the Description as a whole; the technical solutions in the various embodiments may be suitably combined to form other embodiments capable of being understood by those

skilled in the art.

[0027] The series of detailed descriptions laid out above are no more than specific descriptions of feasible embodiments of the present invention, and are not intended to limit the scope of protection of the present invention. All equivalent embodiments or variations made without departing from the artistic spirit of the present invention should fall within the scope of protection thereof.

Claims

1. A mounting base (40) for detachable fixing of an electronic device, comprising a wiring assembly which can be used to connect at least one external wire (10) to a connection terminal of the electronic device, **characterized in that** the wiring assembly comprises:

at least one self-locking connector block (20) comprising at least one connecting hole (22) and at least one connecting end (24), the connecting hole (22) being capable of clamping the external wire (10) therein; and

at least one contact plate (30) provided with a contacting part (32) and a connecting part (34); the at least one self-locking connector block (20) being capable of being fixed to the connecting part (34) by way of the connecting end (24), and the contact plate (30) being capable of being electrically connected to the connection terminal of the electronic device via the contacting part (32).

2. The mounting base (40) as claimed in claim 1, **characterized in that** the connector block (20) comprises two of the connecting holes (22) and two operating holes (26) separately corresponding to the connecting holes (22), each of the operating holes (26) controlling the clamping and detachment of the wire (10) in the connecting hole (22) corresponding thereto.

3. The mounting base (40) as claimed in claim 1, **characterized in that** the connecting end (24) of the connector block (20) is two pins arranged to separately correspond to the connecting hole (22).

4. The mounting base (40) as claimed in claim 3, **characterized in that** mounting holes (36) corresponding to the pins are provided on the connecting part (34), the pins being capable of penetrating the mounting holes (36) and being set therein, and the connector block (20) is fixed on the connecting part (34) via the pins by welding.

5. The mounting base (40) as claimed in claim 1, **characterized in that** the mounting base (40) comprises

at least one accommodating space (42) in which the wiring assembly can be mounted.

6. The mounting base (40) as claimed in claim 5, **characterized in that** the contact plate (30) of the wiring assembly also comprises a pair of inserting parts (38), and the mounting base (40) is also provided with a pair of slots (48), the wiring assembly being capable of being mounted in the accommodating space (42) by inserting the inserting parts (38) into the slots (48).
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7. The mounting base (40) as claimed in claim 1, **characterized in that** the electronic device is a detection device.
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8. The mounting base (40) as claimed in claim 7, **characterized in that** the detection device is a smoke detector.
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9. The mounting base (40) as claimed in claim 1, **characterized in that** the electronic device is an alarm device.
10. The mounting base (40) as claimed in claim 9, **characterized in that** the alarm device is a sounder, a beacon or a sounder/beacon combination.
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FIG 1

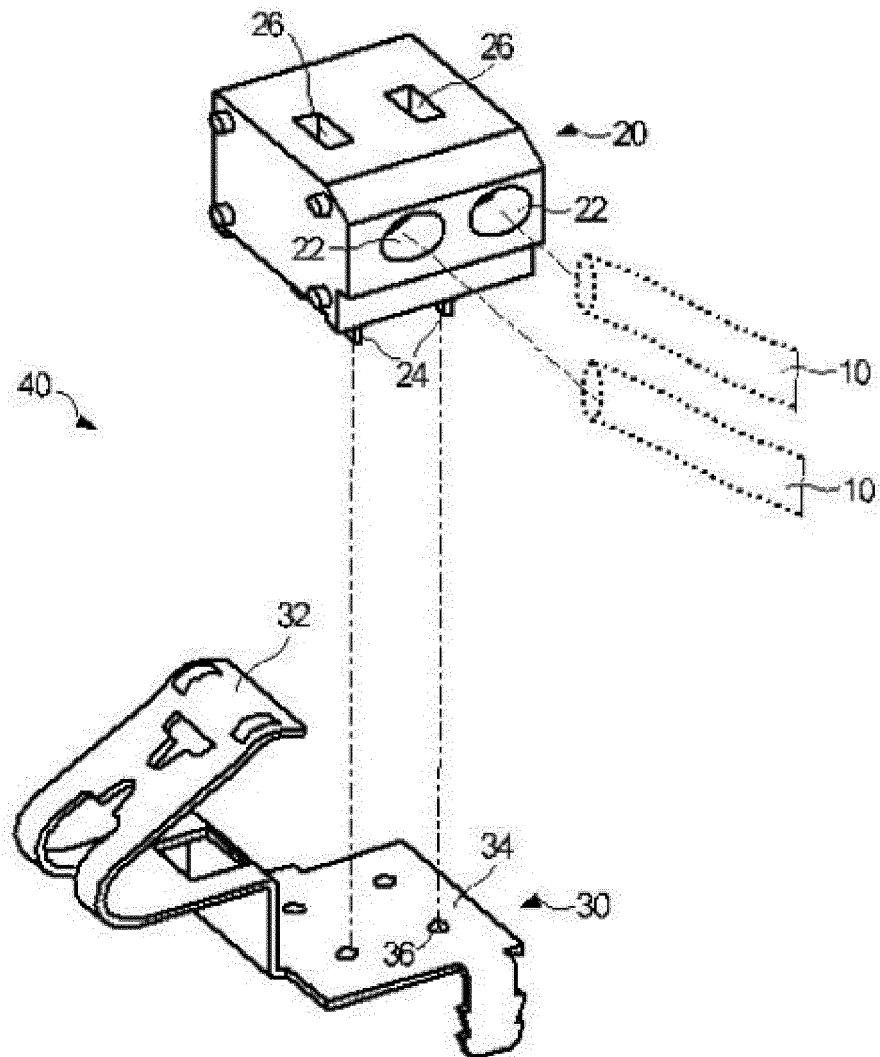
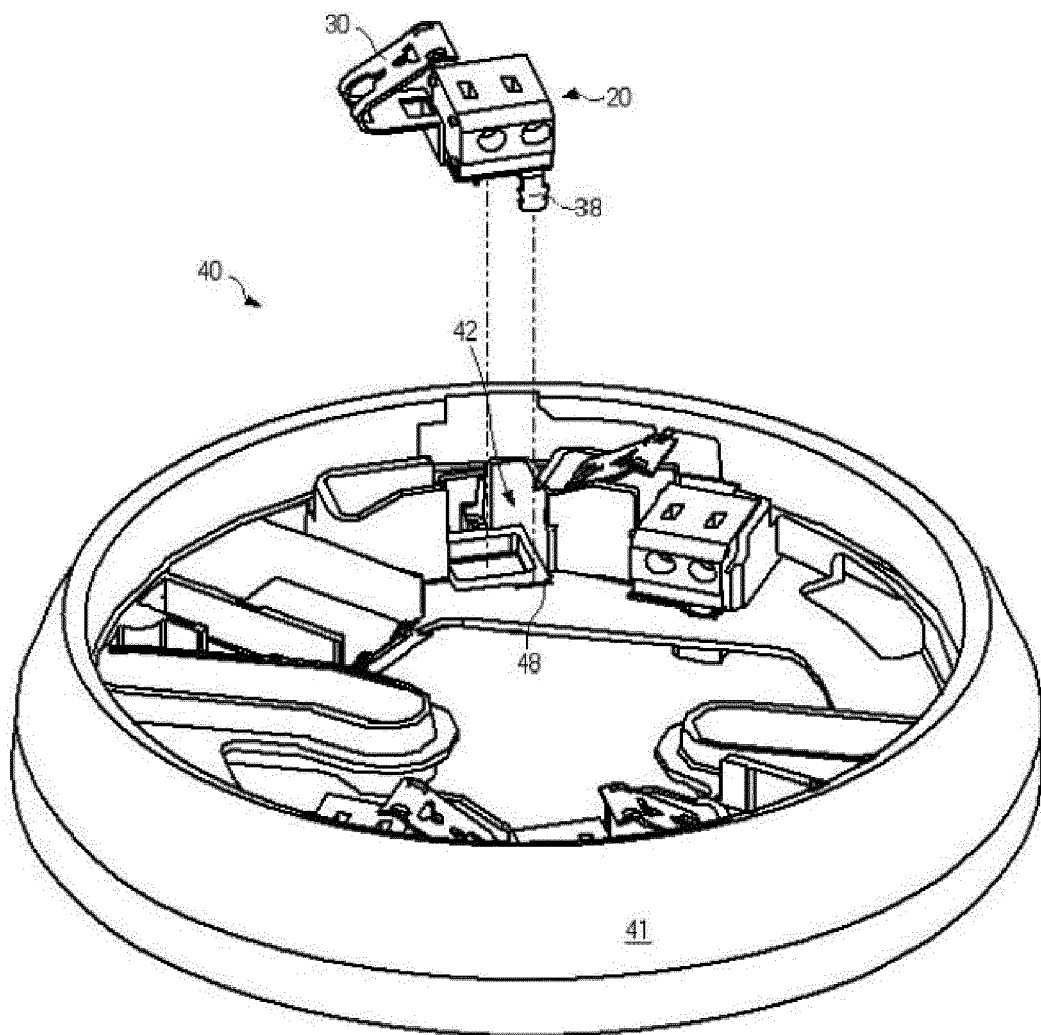


FIG 2





EUROPEAN SEARCH REPORT

Application Number
EP 12 18 8105

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 808 556 A (NELSON WAYNE A [US] ET AL) 15 September 1998 (1998-09-15) * column 3, line 60 - column 5, line 14 * * column 5, line 59 - column 6, line 4; figures 1,2,4,8 * -----	1-10	INV. G08B17/113
			TECHNICAL FIELDS SEARCHED (IPC)
			G08B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 January 2013	Examiner Bourdier, Renaud
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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