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(54) FUSE DEVICE, INFLATABLE RING NETWORK CABINET AND ENVIRONMENT-FRIENDLY SWITCH CABINET INCLUDING SAME

(57) The present application relates to a fuse device, an inflatable ring network cabinet and an environment-friendly switch cabinet. The fuse device includes: a fuse; a fuse tube cabin for accommodating the fuse; a guiding element, removably mounted to an electrode in the fuse tube cabin, for guiding the fuse upon the fuse being inserted into the fuse tube cabin.

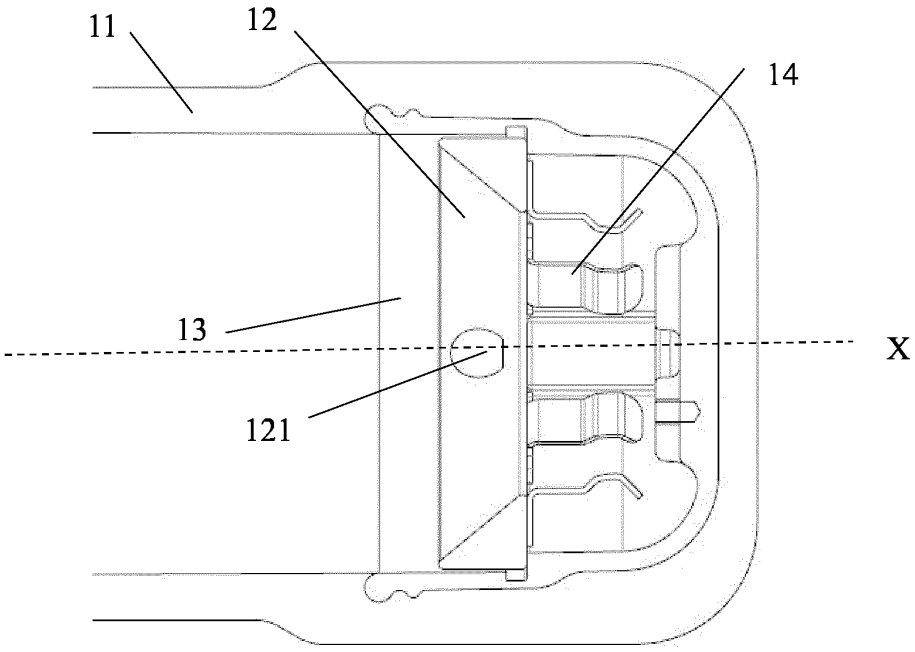

Fig. 2

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Description

TECHNICAL FIELD

[0001] The present application relates to a fuse device. The present application can be not exclusively applied to a fuse unit of an inflatable ring network cabinet and a fuse unit of an environment-friendly switch cabinet. Therefore, the present application also relates to an inflatable ring network cabinet including the fuse device and an environment-friendly switch cabinet including the fuse device.

BACKGROUND

[0002] In a fully insulated fuse tube cabin, in order to facilitate mounting a fuse, a fuse guiding element should be added, which helps to avoid damaging a plum blossom finger during the mounting process of the fuse, and the plum blossom finger is used to ensure a good electrical connection of the fuse. Most of the existing schemes fixedly mount the plum-blossom contact finger in a bottom electrode of the fuse tube cabin, and the guiding element is cast in the fuse tube cabin, which is very inconvenient when replacing these two components, so that the fuse tube cabin can only be applied to a fixed fuse, which limits the adaptability of the fuse tube cabin to different fuses, and lacks flexible measures for using fuses with different plug-in sizes.

SUMMARY

[0003] Therefore, the present application relates to a fuse device, which can solve the problem that the guiding element and the plum-blossom contact finger in the fuse tube cabin are not easy to maintain and replace, and can make the fuse tube cabin suitable for more fuses with different plug-in size requirements.

[0004] The present application provides a fuse device, which includes a fuse; a fuse tube cabin for accommodating the fuse; a guiding element, removably mounted to an electrode in the fuse tube cabin, for guiding the fuse upon the fuse being inserted into the fuse tube cabin.

[0005] Advantageously, the fuse device further includes a plurality of contact fingers which are removably mounted to the guiding element and extend axially towards the electrode.

[0006] Advantageously, the guiding element is removably mounted to the electrode by a first fastener.

[0007] Advantageously, the guiding element includes a first threaded hole, the electrode includes a corresponding threaded hole, and the first fastener is a screw which is screwed into the first threaded hole and the corresponding threaded hole to removably mount the guiding element to the electrode.

[0008] Advantageously, the plurality of contact fingers are removably mounted to the guiding element by a second fastener.

[0009] Advantageously, each of the plurality of contact fingers includes a second threaded hole, the guiding element includes a corresponding threaded hole, and the second fastener is a screw screwed into the second threaded hole and the corresponding threaded hole to removably mount the plurality of contact fingers to the guiding element.

[0010] Advantageously, the guiding element is a metal guiding element or a semiconductor guiding element.

[0011] The present application also provides an inflatable ring net cabinet, which includes the above-mentioned fuse device.

[0012] The present application also provides an environment-friendly switch cabinet, which includes the above-mentioned fuse device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The advantages and objectives of the present application can be better understood in the following preferred embodiments of the present application described in detail with the accompanying drawings. In order to better show the relationship of the components in the drawings, the drawings are not drawn to scale. In the accompanying drawings:

Fig. 1 shows a perspective view of a fuse device according to the present application, and the fuse is not shown for clarity;

Fig. 2 shows an axial sectional view of the fuse device according to the present application, and the fuse is not shown for clarity;

Fig. 3 shows a perspective view of a guiding element and a plurality of contact fingers, which are mounted together, of a fuse device according to the present application; and

Fig. 4 shows another perspective view of the guiding element and a plurality of contact fingers, which are mounted together, of a fuse device according to the present application.

DETAILED DESCRIPTION

[0014] Various embodiments according to the present application will be described in detail with reference to the drawings. Herein, it should be noted that, in the drawings, the same reference numerals are given to components that basically have the same or similar structures and functions, and repeated descriptions about them will be omitted. The term "including A, B, C, etc. in turn" only indicates the arrangement order of included components A, B, C, etc., and does not exclude the possibility of including other components between A and B and/or between B and C.

[0015] The drawings in this specification are schematic diagrams, which assist in explaining the conception of the present application and schematically show the shapes of various parts and their relationships.

[0016] Hereinafter, the preferred embodiments of the present application are described in detail with reference to Figs. 1 to 4.

[0017] As shown in Figs. 1 and 2, the fuse device 1 according to the present application includes a fuse, a fuse tube cabin 11 for accommodating the fuse, and a guiding element 12. The guiding element is made of a metal material or a semiconductor material, and the electrode 13 is arranged at the bottom of the fuse tube cabin 11. The structure of the fuse is not important to the present application, so it is not described in the specification and drawings, and those skilled in the art will understand the structure of the fuse.

[0018] The guiding element 12 is mounted in the fuse tube cabin 11 and is used to guide the fuse upon the fuse being inserted into the fuse tube cabin 11, so as to facilitate mounting the fuse and prevent the contact fingers 14 of the fuse device 1 from being damaged during the mounting process.

[0019] The guiding element 12 is removably mounted to the electrode 13, for example, by a first fastener 15. For example, the first fastener 15 may be a screw. In this case, the guiding element 12 includes a first threaded hole 121 (as shown in FIG. 3), and the electrode 13 includes a corresponding threaded hole. The screw is screwed into the first threaded hole and the corresponding threaded hole to removably mount the guiding element 12 to the electrode 13.

[0020] A plurality of contact fingers 14 are removably mounted to the guiding element 12, and extend in the axial direction X (as shown in FIG. 2) toward the electrode 13. For example, the plurality of contact fingers can be removably mounted to a bottom surface 122 (the surface facing the electrode 13) of the guiding element by a second fastener 16 (such as a screw), as shown in FIG. 4. In this case, although not explicitly shown in the drawings, each of the plurality of contact fingers includes a second threaded hole, the guiding element includes a corresponding threaded hole, and screws are screwed into the second threaded holes and the corresponding threaded holes to removably mount the plurality of contact fingers to the guiding element.

[0021] The above screw is used as an example to describe the removable mounting of the guiding element to the electrode and the removable mounting of the plurality of contact fingers to the guiding element, but those skilled in the art should understand that such removable mounting can be realized by any other means.

[0022] By removably mounting the guiding element to the electrode and the plurality of contact fingers to the guiding element, the guiding element, the plurality of contact fingers and the fuse have good continuity of energization during the operation of the fuse device, and at the same time, when the electrical connection needs to be disassembled, only the guiding element is detached, and the guiding element and the contact fingers can be easily replaced and maintained, so that the same fuse tube cabin can adapt to more fuses with different sizes.

[0023] In addition, the present application is not exclusively used in inflatable ring network cabinets and environment-friendly switch cabinets.

[0024] The above description is only an explanation of the present application, so that ordinary skilled in the art can implement the scheme completely, but it is not a limitation to the present application. The above disclosed technical features are not limited to the disclosed combination with other features, and the ordinary skilled in the art can also make other combinations among the technical features according to the purpose of the present application, so as to realize the purpose of the present application.

Claims

1. A fuse device, which is **characterized by** comprising:

   a fuse;
   a fuse tube cabin for accommodating the fuse;
   a guiding element, removably mounted to an electrode in the fuse tube cabin, for guiding the fuse upon the fuse being inserted into the fuse tube cabin.

2. The fuse device according to claim 1, which is **characterized in that**, the fuse device further comprises a plurality of contact fingers, and the plurality of contact fingers are removably mounted to the guiding element and extend axially toward the electrode.

3. The fuse device according to claim 1, which is **characterized in that**, the guiding element is removably mounted to the electrode by a first fastener.

4. The fuse device according to claim 3, which is **characterized in that**, the guiding element comprises a first threaded hole, the electrode includes a corresponding threaded hole, and the first fastener is a screw, which is screwed into the first threaded hole and the corresponding threaded hole to removably mount the guiding element to the electrode.

5. The fuse device according to claim 2, which is **characterized in that**, the plurality of contact fingers are removably mounted to the guiding element by a second fastener.

6. The fuse device according to claim 5, which is **characterized in that**, each of the plurality of contact fingers comprises a second threaded hole, the guiding element includes a corresponding threaded hole, and the second fastener is a screw, which is screwed into the second threaded hole and the corresponding threaded hole to removably mount the plurality of contact fingers to the guiding element.

7. The fuse device according to claim 1, which is **characterized in that**, the guiding element is a metal guiding element or a semiconductor guiding element.

8. An inflatable ring network cabinet, which is **characterized by** comprising the fuse device according to any one of claims 1 to 7.

9. An environment-friendly switch cabinet, which is **characterized by** comprising the fuse device according to any one of claims 1 to 7.

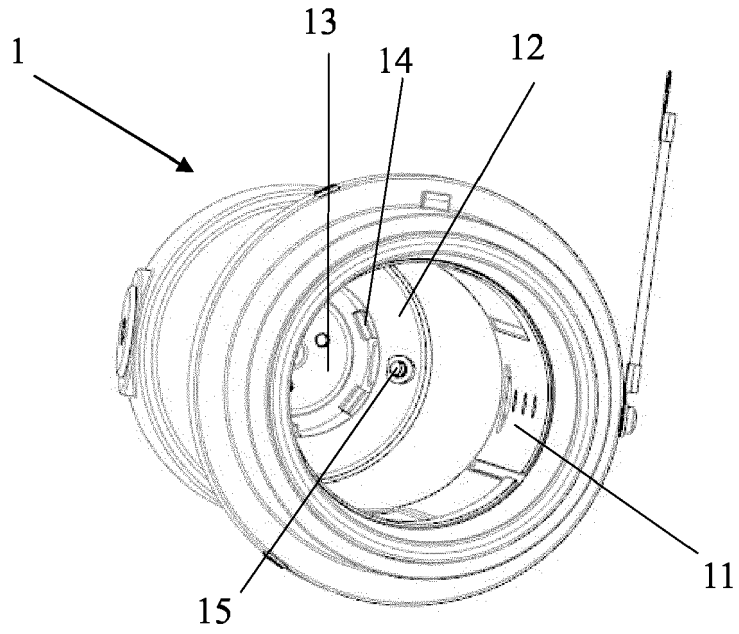

Fig. 1

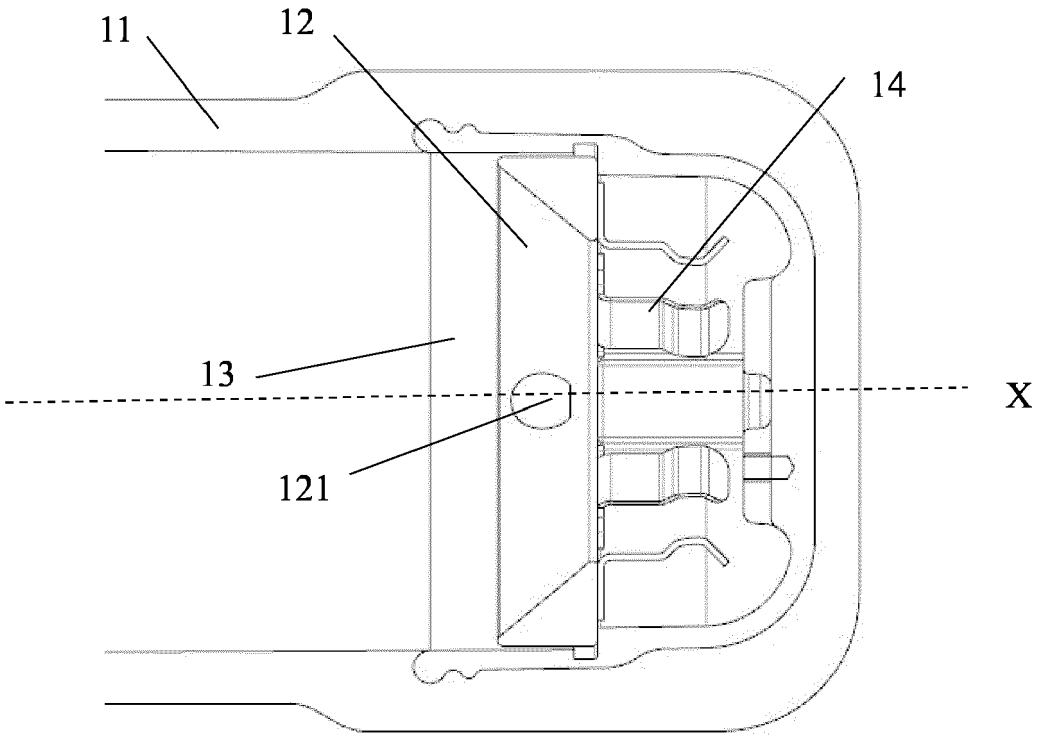

Fig. 2

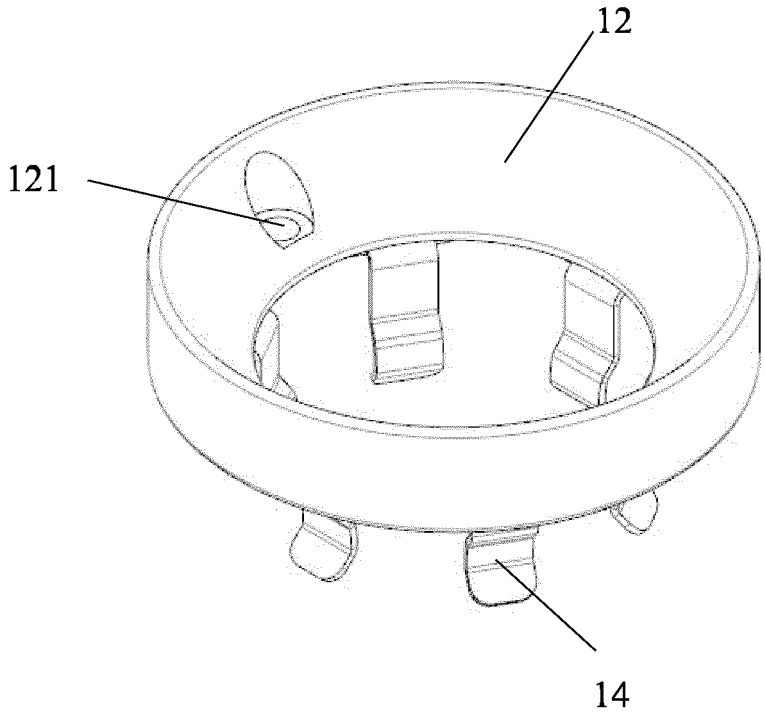

Fig. 3

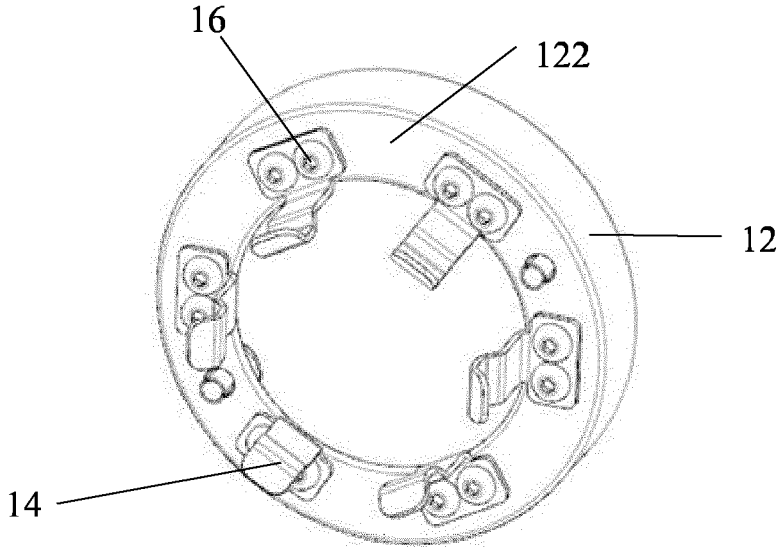

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 22 30 6382

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	CN 209 328 836 U (SCHNEIDER ELECTRIC IND SAS) 30 August 2019 (2019-08-30) * abstract; figures 2,3 *	1,3,4, 7-9 2,5,6	INV. H01H85/20
A	EP 2 503 585 A1 (DRIBO SPOL S R O [CZ]) 26 September 2012 (2012-09-26) * abstract; figure 4 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

H01H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	6 February 2023	Simonini, Stefano

CATEGORY OF CITED DOCUMENTS

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06-02-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 209328836 U	30-08-2019	NONE	
EP 2503585 A1	26-09-2012	NONE	

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