mounting frame, the ceiling panel, and the sandwich material layer. The ceiling panel trim device comprises a Z-shape fixing profile, and the fixing profile comprises a first abutting part, a second abutting part and a third abutting part which are connected in sequence. The first abutting part abuts on the back surface of ceiling panel, and the second abutting part is placed to abut on the side wall of the sandwich material layer. The space formed between the first abutting part and the wall of second abutting part is configured to position a sealing gasket The third abutting part envelops part of the sandwich material layer and makes the sandwich material layer abut at the back surface of the ceiling panel, and the mounting frame is configured to provide the confining part which clamps the ceiling upward flanges.

Further, in an embodiment of the present application, the sandwich material layer can be made of a material for heat preservation, soundproofing, heat insulation or sound absorption.

The beneficial effects of the trim device, the mounting frame and the suspended ceiling system provided by the embodiments of the present application are:

The trim device can provide a groove in advance on the fixing member. Sealant is applied in the groove during the installation, so that the ceiling panels along the perimeter can be bonded properly. By means of applying the trim device in ceiling installation, not only can both front and back side of the ceiling space to be set apart, but a better sealing effect can also be obtained. The mounting frame is capable of clamping the upward flanges of ceiling through the first and second structural members which crisscross each other. The stability of the entire mounting frame is enhanced after the completion of ceiling installation. Through the joint application of the mounting frame and the trim device, the ceiling system can be very securely fixed and equipped with air-tightness function.

Any discussion of documents, acts, materials, devices, articles or the like which has been included in the present specification is not to be taken as an admission that any or all of these matters form part of the prior art base or were common general knowledge in the field relevant to the present disclosure as it existed before the priority date of each of the appended claims.

Throughout this specification the word "comprise", or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated element, integer or step, or group of elements, integers or steps, but not the exclusion of any other element, integer or step, or group of elements, integers or steps.

DRAWINGS

In order to illustrate more clearly the specific embodiments of the present application or the technical solutions in the prior art, the following is a brief introduction of the drawings used in the specific embodiments or the description of prior art.

Obviously, the drawings in the following description are some embodiments of the present application, and those skilled persons in this field can obtain other drawings based on these drawings without any creative work.

Figure 1 is a schematic view of a suspended ceiling system provided by an

CLAIMS

1. A mounting frame, comprising first structural members and second structural members;

wherein the first structural members are connected and in a crisscross arrangement with the second structural members in the same plane, and are arranged to receive ceiling panels therebetween;

wherein all the first and second structural members are provided with bent confining parts capable of clamping an upward flange of a four-sided ceiling panel, abutting a sealing gasket along the unexposed backside of the upward flange and keeping them fixed at confined positions.

2. The mounting frame according to Claim 1,

wherein the side of the bent part that is further from the confining part is configured to abut the sealing gasket along the unexposed backside of each upward flange of a four-sided ceiling panel.

3. The mounting frame according to Claim 1 or Claim 2, wherein the mounting frame further includes a fixing device;

wherein the fixing device comprises a fixing member and at least two clamping members;

wherein the clamping members are connected to the fixing member;

wherein the clamping members have clamping channels configured to clamp the first structural member and the second structural member;

wherein the first structural member is inserted in a slidable manner and placed in the clamping channel of one of the clamping members;

wherein the second structural member is inserted in a slidable manner and placed in the clamping channel of the other of the clamping members, where at least two of the clamping channels extend in a crisscross disposition.

4. The mounting frame according to Claim 3, wherein both ends of the clamping member protrude in a direction close to the clamping channel and respectively form a first latching part and a second latching part;

wherein the first latching part and the second latching part have a gap space

between them and are formed to define the positions of the mounting frame.

5. The mounting frame according to any one of Claims 3 or 4, wherein the fixing member is provided with fixing slots and confining members corresponding to the fixing slots;

wherein a clamping member is inserted and put through the fixing slots;

wherein the confining members are placed to abut on the clamping member and to set the clamping member to the fixing member.

6. The mounting frame according to Claim 5, wherein the number of fixing slots corresponding to one of the clamping members is two and they are arranged side by side;

wherein the middle part of the clamping member is bent and both ends of the clamping member are inserted and put through the two fixing slots respectively.

7. The mounting frame according to Claim 5 or Claim 6, wherein both ends of the fixing slot are correspondingly provided with confining members.

8. A suspended ceiling system, comprising:

a trim device comprising:

a mounting member configured to be mounted on the wall; and

a fixing member configured to be fixed and bonded to a ceiling panel;

wherein the mounting member is connected or integrally formed with the fixing member; and

wherein a mounting space suitable for mounting ceiling panel is delimited between the mounting member and the fixing member, and the side of the fixing member close to the mounting space is provided with a groove configured to accommodate sealant;

a mounting frame according to any of Claims 1 to 7, the mounting frame comprising a ceiling panel;

wherein the trim device is configured to seal and clamp the edges of the ceiling panel along the ceiling perimeter, and the mounting frame is configured to form confining parts which clamp the upward flanges of the ceiling panel.

9. The suspended ceiling system according to Claim 8, wherein at least two ridges

are located on the side of the fixing member adjacent to the mounting space of the trim device; and wherein the ridges extend in the longitudinal direction of the fixing member, and the groove is located between two adjacent ridges.

10. The suspended ceiling system according to Claim 8 or Claim 9, wherein the end of the fixing member of the trim device further from the mounting member protrudes in a direction close to the mounting space and forms an abutting part capable of abutting the ceiling panel.

11. The suspended ceiling system according to any one of Claims 8 to 10, wherein the trim device further includes a sealing member, and the sealing member is connected or integrally formed with the mounting member and the fixing member; and wherein the sealing member is located between the mounting member and the fixing member, and the side of the sealing member further from the mounting space forms a sealed space capable of accommodating sealant.

12. The suspended ceiling system according to Claim 11, wherein the plane of the trim device in which the mounting member is located is positioned perpendicular to the plane in which the fixing member is located, and there is an angle between the plane in which the sealing member is located and the plane in which the mounting member is located, and the angle ranges from 40° to 50°.

13. The suspended ceiling system according to Claim 11 or Claim 12, wherein the sealing member of the trim device comprises a first planar part and a second planar part that are connected to each other; wherein the first planar part is connected to the mounting member, and the second planar part is connected to the fixing member; wherein the joint between the first planar part and the second planar part is recessed in a direction close to the mounting space or protrudes in a direction further from the mounting space.

14. The suspended ceiling system according to any one of Claims 11 to 13, wherein the side of the sealing member of the trim device further from the mounting space is curved, and the side of the sealing member further from the mounting space is either recessed or protruding in the direction close to the mounting space.

15. The suspended ceiling system according to any one of Claims 11 to 14, wherein the trim device further includes a pressing member configured to press upon the ceiling panel; and wherein the pressing member is a type of spring metal, and one end of the pressing member is connected to the mounting member or abuts on it, whereas the other end of the pressing member has a tendency to move close to and abut on the fixing member.

16. The suspended ceiling system according to Claim 15, wherein the end of the mounting member of the trim device further from the fixing member is bent to form a fixing part; and wherein the fixing part has a confined space, and one end of the pressing member further from the fixing member is latched in the confined space.

17. A suspended ceiling system comprising a ceiling panel trim device, a mounting frame according to any one of Claims 1 to 7, a ceiling panel and a sandwich material layer;

wherein the ceiling panel trim device comprises a fixing profile, and the fixing profile comprises a first abutting part, a second abutting part and a third abutting part that are connected in sequence;

wherein the first abutting part abuts the back surface of ceiling, and the second abutting part is positioned to abut the side wall of the sandwich material layer;

wherein the space formed between the first abutting part and the wall of the second abutting part is configured to position sealing gasket;

wherein the third abutting part wraps part of the sandwich material layer and makes the sandwich material layer abut at the back surface of the ceiling panel;

wherein the mounting frame is configured to form confining parts which clamp the upward flanges of the ceiling panel.

18. A suspended ceiling system according to Claim 17, wherein the sandwich material layer comprises one or more of thermal protecting, soundproof, heat insulating or sound absorbing material.