TITLE OF THE INVENTION

AN INDOOR UNIT FOR AN AIR CONDITIONER

FIELD OF INVENTION

The present invention relates to an indoor unit for an air conditioner.

BACKGROUND OF THE INVENTION

It is known that an indoor unit for an air conditioner includes a main body including a fan, a heat exchanger, etc., a casing accommodating the main body, a front panel, a bottom panel, a rear panel, a left side panel and a right side panel, as disclosed in EP Publication of Unexamined Patent Application No. EP3330632A1 hereinafter called PTL1.

In the indoor unit for the air conditioner described in PTL1, for the purpose of securing workability at the time of maintenance and improving an aesthetic appearance, the front panel, the bottom panel, the rear panel, the left side panel and the right side panel are detachable from the casing.

However, in the indoor unit for the air conditioner described in PTL1, since the casing is not able to be detached from the indoor unit which is fixed on the wall, each panel is not able to be detached from the casing in a state that the indoor unit is fixed on the wall. As such, when a service man detaches the panel, the serviceman has to detach the indoor unit from the wall, and then detach the panel from the main body of the indoor unit.

Therefore, the development of an indoor unit for an air conditioner that the service man can easily change each panel as well as the aesthetic appearance of the indoor unit is improved, is required.

CITATION LIST

Patent Literature

PTL 1: EP Publication of Unexamined Patent Application No. EP3330632A1

SUMMARY OF THE INVENTION

An aspect of the invention is defined in the independent claim. Some optional features of the invention are defined in the dependent claims.

It is possible to provide an indoor unit for an air conditioner that the service man can easily change each panel as well as that the aesthetic appearance of the indoor unit is improved.

According to an exemplary arrangement, there is provided an indoor unit for an air conditioner comprising: a main body including a fan and a heat exchanger; a casing which accommodates the main body; a front panel which is configured to be attachable to and detachable from the casing; and a left side panel and a right side panel which cover side surfaces of the casing respectively, wherein the casing is configured to be attachable to and detachable from the main body, and wherein the left side panel and the right side panel are configured to be attachable to and detachable from the casing.

Firstly, since the casing is configured to be attachable to and detachable from the main body, a service man can detach the casing from the main body of the indoor unit which is fixed on the wall.

Then, the casing which is detached from the main body is put on the floor. As such, it is easier for the service man to check the casing, the front panel, the left side panel and the right side panel, as compared with a condition where the indoor unit is fixed on the wall.

Secondly, the front panel is configured to be attachable to and detachable from the casing as well as the left side panel and the right side panel are configured to be attachable to and detachable from the casing. As such, it is much easier for the service man to change the front panel, the left side panel and/or the right side panel in the condition where the casing is put on the floor.

Thirdly, since the front panel, the left side panel and the right side panel are configured to be attachable to and detachable from the casing, the aesthetic appearance of the indoor unit corresponding to the taste of a user is improved.

Therefore, it is possible that the service man can easily change each panel as well as that the aesthetic appearance of the indoor unit is improved.

In the indoor unit for the air conditioner of the exemplary arrangement, the front panel covers an end part of each of the left side panel and the right side panel, and each of the left side panel and the right side panel is configured to be detachable from the casing by moving it along the side surface of the casing in the direction of the front side of the casing.

It is possible that, unless each of the left side panel and the right side panel is moved along the side surface of the casing in the direction of the front side of the casing, the each of the left side panel and the right side panel is not able to be detached from the casing.

Therefore, it is possible to prevent the each of the left side panel and the right side panel from falling down accidentally from the casing before the front panel is detached from the casing.

Additionally, the front panel is fixed to the casing via a first fastening mechanism.

When the front panel is fixed to the casing, it is possible to prevent the front panel from falling down accidentally from the casing securely as well as to prevent the each of the left side panel and the right side panel from falling down accidentally from the casing more securely.

In the indoor unit for the air conditioner of the exemplary arrangement, the indoor unit further comprises a bottom panel which covers a bottom surface of the casing and is configured to be attachable to and detachable from the casing.

Since the bottom panel is configured to be attachable to and detachable from the casing, it is much easier for the service man to change the bottom panel. Moreover, by changing the bottom panel, the aesthetic appearance of the indoor unit corresponding to the taste of a user is improved.

In the indoor unit for the air conditioner of the exemplary arrangement, the bottom panel is configured to be detachable from the casing by detaching the left side panel and the right side panel from the casing.

It is possible that, only by detaching the left side panel and the right side panel from the casing, the bottom panel is able to be detached from the casing. Therefore, it is possible to realize the unity of work among the service men as well as to attach easily and securely the bottom panel to the casing by the left side panel and the right side panel.

In the indoor unit for the air conditioner of the exemplary arrangement, a left side part and a right side part of the bottom panel are supported from below by the left side panel and the right side panel respectively.

It is possible that, only by detaching both the left side panel and the right side panel from the casing, the bottom panel is able to be detached from the casing. Therefore, it is possible to prevent the bottom panel from falling down accidentally from the casing before both the left side panel and the right side panel are detached from the casing.

In the indoor unit for the air conditioner of the exemplary arrangement, each of the left side panel and the right side panel is fixed to the casing via a second fastening mechanism.

When the each of the left side panel and the right side panel is fixed to the casing, it is possible to prevent the each of the left side panel and the right side panel from falling down accidentally from the casing more securely.

In the indoor unit for the air conditioner of the exemplary arrangement, the bottom panel is fixed to the casing via a third fastening mechanism.

When the bottom panel is fixed to the casing, it is possible to prevent the bottom panel from falling down accidentally from the casing more securely.

BRIEF DESCRIPTION OF DRAWINGS

The principle of the present invention and its advantages will become apparent in the following description taking in consideration with the accompanying drawings in which:

FIG.1 is a perspective view of an indoor unit 1;

FIG.2 is a development view of the indoor unit 1;

FIG.3 is a front view of a front panel 40;

FIG.4 is a rear view of the front panel 40;

FIG.5 is an explanation view about an engagement state where the front panel 40 is engaged with a casing 20;

FIG.6 is the explanation view about a disengagement state where the front panel 40 is not engaged with the casing 20;

FIG.7 is the explanation view about the relation between the casing 20 and a right side panel 50b;

FIG.8 is a perspective view of a bottom panel 60;

FIG.9A is an enlarged view of a portion A encircled with a broken line, in FIG.8;

FIG.9B is an enlarged view of a portion B encircled with a broken line, in FIG.8;

FIG.10 is the explanation view about the relation between the casing 20 with a main body 10 and the bottom panel 60;

FIG.11 is the casing 20 when viewed from below; and

FIG.12 is the explanation view about the relation between the bottom panel 60 and the right side panel 50b.

DETAILED DESCTIPTION OF EMBODIMENTS OF THE INVENTION

Hereinafter, an embodiment of the present invention will be described in detail with reference to the drawings.

An air conditioner includes an indoor unit 1 provided in a room and an outdoor unit (not shown) connected to the indoor unit 1 by piping and provided outside the room. The indoor unit