CLAIMS

1. An air blower comprising:

a shaft attachable to a structure above a space;

a motor attached to the shaft;

a rotation blade connecting member made of metal and configured to be rotated by the motor;

a plurality of rotation blades attached to the rotation blade connecting member, disposed apart from each other in a rotational direction of the rotation blade connecting member; and

a wireless communications unit disposed such that at least a part of the wireless communications unit is disposed inside or under the rotation blade connecting member, the wireless communications unit being configured to receive a wireless signal as an electromagnetic wave for controlling the motor,

the rotation blade connecting member being formed with at least one opening,

the at least one opening having a portion where an opening size of the at least one opening is equal to 1/2 of a wavelength of the electromagnetic wave used for the wireless communications unit to communicate.

2. An air blower comprising:

a shaft attachable to a structure above a space;

a motor attached to the shaft;

a rotation blade connecting member made of metal and configured to be rotated by the motor;

a plurality of rotation blades attached to the rotation blade connecting member, disposed apart from each other in a rotational direction of the rotation blade connecting member; and

a wireless communications unit disposed such that at least a part of the wireless communications unit is disposed inside or under the rotation blade connecting member, the wireless communications unit being configured to receive a wireless signal as an electromagnetic wave for controlling the motor,

the rotation blade connecting member being formed with at least one opening,

the air blower further comprising a light fixture attached to the shaft,

the light fixture including:

a substrate on which a lighting module is installed; and

a heat radiation member made of metal for dissipating heat of the substrate, the substrate and the heat radiation member being arranged such that at least a part of the substrate and at least a part of the heat radiation member are overlapped with each other as viewed along a central-axis direction of the shaft,

the opening being a first opening,

the substrate being formed with a second opening,

the heat radiation member being formed with a third opening,

at least a part of the second opening and at least a part of the third opening being overlapped with each other defining an overlapped region in a plane view where the substrate and the heat radiation member are viewed along the central-axis direction of the shaft, and

the wireless communications unit being located in the region in a plane view where the substrate and the heat radiation member are viewed along the central-axis direction of the shaft.

3. An air blower comprising:

a shaft attachable to a structure above a space;

a motor attached to the shaft;

a rotation blade connecting member made of metal and configured to be rotated by the motor;

a plurality of rotation blades attached to the rotation blade connecting member, disposed apart from each other in a rotational direction of the rotation blade connecting member; and

a wireless communications unit disposed such that at least a part of the wireless communications unit is disposed inside or under the rotation blade connecting member, the wireless communications unit being configured to receive a wireless

signal as an electromagnetic wave for controlling the motor,

the rotation blade connecting member being formed with at least one opening,

the motor including:

a stator attached to the shaft; and

a rotor rotatably disposed radially outward of the stator, and

the rotation blade connecting member being attached to the rotor,

the air blower further comprising a first bearing and a second bearing,

the first bearing and the second bearing being attached to the shaft, with the stator being located between the first bearing and the second bearing,

the first bearing supporting the rotor rotatably, and

the second bearing supporting the rotation blade connecting member rotatably.

4. The air blower of claim 2 or 3, wherein

the at least one opening has a portion where an opening size of the at least one opening is equal to 1/2 of a wavelength of the electromagnetic wave used for the wireless communications unit to communicate.

5. The air blower of any one of claims 1 to 4, wherein

the at least one opening includes an opening extending in one direction.

6. The air blower of any one of claims 1 to 5, wherein

the rotation blade connecting member includes a tubular portion, and a flare portion extending outward from the tubular portion, at least a part of the at least one opening being provided in the flare portion.

7. The air blower of any one of claims 1 to 6, wherein

the plurality of rotation blades and the at least one opening are arranged at different positions in a rotational direction of the rotation blade connecting member in a plane view where the rotation blade connecting member is viewed along a central-axis direction of the shaft.

8. The air blower of claim 1 or 3, further comprising a light fixture attached to the shaft, wherein

the light fixture includes:

a substrate on which a lighting module is installed; and

a heat radiation member made of metal for dissipating heat of the substrate, the substrate and the heat radiation member being arranged such that at least a part of the substrate and at least a part of the heat radiation member are overlapped with each other as viewed along a central-axis direction of the shaft,

the opening is a first opening,

the substrate is formed with a second opening,

the heat radiation member is formed with a third opening,

at least a part of the second opening and at least a part of the third opening are overlapped with each other defining an overlapped region in a plane view where the substrate and the heat radiation member are viewed along the central-axis direction of the shaft, and

the wireless communications unit is located in the region in a plane view where the substrate and the heat radiation member are viewed along the central-axis direction of the shaft.

9. The air blower of claim 2 or 8, wherein

a size of the third opening is larger than a size of the second opening.

10. The air blower of claim 2, 8 or 9, further comprising a control unit connected to the motor, the wireless communications unit, and the light fixture, wherein

the control unit is attached to the shaft.

11. The air blower of claim 1 or 2, wherein

the motor includes:

a stator attached to the shaft; and

a rotor rotatably disposed radially outward of the stator, and

the rotation blade connecting member is attached to the rotor.

12. The air blower of claim 11, further comprising a first bearing and a second bearing, wherein

the first bearing and the second bearing are attached to the shaft, with the stator being located between the first bearing and the second bearing,

the first bearing supports the rotor rotatably, and

the second bearing supports the rotation blade connecting member rotatably.

13. The air blower of any one of claims 1 to 12, further comprising a cover that covers at least a part of the motor and at least a part of the rotation blade connecting member, wherein

the cover is attached to the shaft.

14. A blowing control system comprising:

the air blower of any one of claims 1 to 13; and

a wireless communications device configured to communicate with the wireless communications unit to control the air blower.

15. The blowing control system of claim 14, further comprising a relay device configured to relay communication between the wireless communications unit and the wireless communications device wirelessly.