suction port of the blower functions as a flow path for air having oil content, the suction port becomes easily contaminated with the oil and therefore needs to be cleaned frequently.

Therefore, the present invention provides an oily smoke trapping device that prevents noise generated by a fan from being transmitted to a room without reducing the performance of the intake/exhaust of air and cleanability.

[Solution to Problem]

[0005]

In order to achieve the above object, there is provided an oily smoke trapping device including a motor, a fan that is attached to a rotary shaft of the motor and generates an air flow, and a fan casing including the fan at the interior thereof, wherein the fan casing has an intake opening that draws in the air, an exhausting opening that exhausts the air, and a communication opening that is provided to face the intake opening and is not on a flow path which is a flow of air generated by rotation of a fan, a noise-absorbing material is provided on the opposite side of the intake opening with the communication opening interposed therebetween, the communication opening spatially communicates the fan and the noise-absorbing material to each other, and an outer edge of the communication opening is provided so as to be positioned on the same position as or inside an outer diameter of the fan.

According to this configuration, since the communication opening that spatially communicates the fan and the noise-absorbing material to each other is provided and the noise-absorbing material is provided outside a flow path for the air including oil content, the noise-absorbing material can be prevented from being contaminated or having resistance to the air flow. Thus, there can be provided the oily smoke trapping device capable of transmitting the noise generated by the fan from being transmitted to a room without reducing the performance of the intake/exhaust of air and cleanability.

[0006]

Further, the noise-absorbing material may be characterized by being provided to have a first space between the noise-absorbing material and the communication opening.

According to this configuration, since the noise-absorbing material is provided to have the first space between the noise-absorbing material and the communication opening, the sound spreads and propagates from the communication opening, allowing the sound to be absorbed in a wider area and enabling sound absorption with efficiency.

[0007]

Furthermore, the fan may have a power transmission plate connected to the

[CLAIMS]

[Claim 1]

An oily smoke trapping device, comprising:

a motor;

a fan attached to a rotary shaft of the motor and generating a flow of air; and

a fan casing including the fan in the interior thereof,

wherein the fan casing includes:

an intake opening that draws in the air;

an exhausting opening that exhausts the air; and

a communication opening that is provided to face the intake opening and is not on a flow path which is a flow of air generated by rotation of a fan,

a noise-absorbing material is provided on the opposite side of the intake opening with the communication opening interposed therebetween,

the communication opening spatially communicates the fan and the noise-absorbing material, and

an outer edge of the communication opening is provided so as to position on the same position as an outer diameter of the fan or on the inside of the outer diameter of the fan.

[Claim 2]

The oily smoke trapping device according to claim 1, wherein the noise-absorbing material is provided to have a first space between the noise-absorbing material and the communication opening.

[Claim 3]

The oily smoke trapping device according to any of claim 1 or 2, wherein the fan has a power transmission plate connected to the rotary shaft and a plurality of fins around the power transmission plate,

the power transmission plate having a ring part connected to the plurality of fins, a central part connected to the rotary shaft, a spoke part provided between the central part and the ring part, and a plurality of power transmission plate opening parts enclosed by the ring part, the central part, and the spoke part.

[Claim 4]

The oily smoke trapping device according to claim 3, wherein the power transmission plate is provided on the communication opening side from a center position of the fan in a direction of the rotary shaft.

[Claim 5]

The oily smoke trapping device according to any one of claims 1 to 4, wherein at least a part of the motor is provided so as to be positioned farther away from the intake opening than a closest portion of the fan to the communication opening is.

[Claim 6]

The oily smoke trapping device according to any one of claims 1 to 5, having a second space which is positioned farther away from the intake opening than the noise-absorbing material, the second space being a space enclosed so as to cause a sound to decay.

[Claim 7]

The oily smoke trapping device according to claim 6, wherein the second space is a closed space.