An object of the present invention is to provide a rotary body mounting device in which working efficiency in attachment to and detachment from a power shaft is improved.

[Solution to Problem]

[0005]

The present invention is a rotary body mounting device 30 which is inserted into a power shaft 20, the rotary body mounting device 30 including: a rotary body 301; and an attaching device 302, wherein the attaching device 302 has: an insertion hole 305 into which the power shaft 20 is inserted; a drive connecting part which is connected to the power shaft 20; a power shaft attaching/detaching mechanism operation part 401 which attaches and detaches the rotary body mounting device 30 to and from the power shaft 20 on a side on which the power shaft 20 is not inserted into the attaching device 302 with the rotary body 301 used as a reference; and a rotary body attaching/detaching mechanism operation part (3071, 5011) which attaches and detaches the rotary body 301 to and from the rotary body mounting device 30 on a side on which the power shaft 20 is inserted into the attaching device 302 with the rotary body used as the reference, in which the rotary body attaching/detaching mechanism operation part (3071, 5011) enables to detach the rotary body 301 by press operation, whereby the problem is solved.

[0006]

With this, it becomes possible to easily and integrally detach the rotary body mounting device 30 including the rotary body and the attaching device 302 from the power shaft 20.

In addition, by providing the rotary body attaching/detaching mechanism operation part of the attaching device on the side on which the power shaft 20 is inserted into the attaching device 302 with the rotary body used as the reference, in a state in which the rotary body mounting device 30 is mounted to the power shaft 20, the rotary body attaching/detaching mechanism operation part of the attaching device is positioned at the back of the rotary body, and cannot be reached. As a result, it is not possible to operate the rotary body attaching/detaching mechanism operation part of the attaching device before the rotary body mounting device 30 is detached, as described above. With this, it becomes possible to prevent the rotary body attaching/detaching mechanism operation part of the attaching device from being operated by mistake in the state in which the rotary body mounting device 30 is mounted to the power shaft 20.

[0007]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 in which the attaching device 302 is comprised of an attaching/detaching device 40 which has the power shaft attaching/detaching mechanism

operation part 401 and a rotary body hold device 50 which has the rotary body attaching/detaching mechanism operation part (3071, 5011).

The attaching device 302 is separated into the attaching/detaching device 40 and the rotary body hold device 50, whereby it is possible to facilitate attachment and detachment of the rotary body 301.

[0008]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 in which the attaching/detaching device 40 includes a boss tube 431 which is inserted into the rotary body, and the rotary body attaching/detaching mechanism operation part (3071, 5011) of the rotary body hold device 50 is provided so as to retain and release the boss tube 431.

With this, by operating the rotary body attaching/detaching mechanism operation part (3071, 5011) only once, it becomes possible to disassemble the rotary body mounting device 30 into three members which are the attaching/detaching device 40, the rotary body 301, and the rotary body hold device 50. In addition, in the state in which the rotary body mounting device 30 is mounted to the power shaft 20, it is possible to prevent the attaching/detaching device 40 and the rotary body hold device 50 from being separated by mistake.

[0009]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 according to the second or third aspect in which the attaching/detaching device 40 and/or the rotary body hold device 50 has an urging part which presses the rotary body.

With this, backlash between the rotary body 301 and the rotary body hold device 50 and/or backlash between the rotary body 301 and the attaching/detaching device 40 is eliminated, and noises or the like are not made.

[0010]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 according to the fourth aspect in which a tapered face 4312 which contracts toward a side of the rotary body is provided in the attaching/detaching device 40, and the urging part of the rotary body hold device 50 is configured by an urging member which pinches the tapered face 4312 and is configured to function also as a rotary body attaching/detaching mechanism 501 by providing an operation part 5011 which opens the urging member.

With this, the urging part of the rotary body hold device 50 can have two functions including a function of retaining and releasing the boss tube 431 and a function of pressing

the rotary body 301.

[0011]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 in which the rotary body 301 has a recess and/or a projection on a mounting face to which the attaching/detaching device 40 and/or the rotary body hold device 50 is mounted, and a projection and/or a recess is provided in the attaching/detaching device 40 and/or the rotary body hold device 50 so as to fit into the recess and/or the projection.

[0012]

For example, in the case where the rotary body is a grease filter (rotary body) 301, the grease filter (rotary body) 301 has a front face and a back face and, in the case where the rotary body is a sirocco fan, the sirocco fan has an upper face and a lower face. When the rotary body is not mounted to each of the attaching/detaching device 40 and the rotary body hold device 50 with a proper face, there are cases where the rotary body does not function properly.

In such cases, the rotary body has the recess or the projection on the side of the attaching/detaching device which fits into the projection or the recess on the side of the rotary body which is provided in the attaching/detaching device 40, whereby it is possible to prevent the rotary body from being attached reversely or upside down by mistake.

[0013]

In addition, as another aspect, in the rotary body hold device, the projection or the recess on the side of the rotary body which fits into the recess or the projection on the side of the rotary body hold device which is provided in the rotary body may be provided.

The recess and/or the projection of the rotary body may be, e.g., a curve obtained by curving the mounting face which is a projection projecting to the side of the attaching/detaching device 40 (a curve which is a recess when viewed from the side of the rotary body hold device 50), and the recess and the projection may be provided only on the side of the attaching/detaching device 40 of the mounting face or only on the side of the rotary body hold device 50 of the mounting face. It will be easily understood that the recess and the projection may be provided on each of the side of the attaching/detaching device 40 and the side of the rotary body hold device 50. In any case, it is only necessary to provide the recess/or the projection in the attaching/detaching device 40 and/or the rotary body hold device 50 such that the recess and/or the projection fit into the recess and/or the projection provided on the mounting face of the rotary body. In addition, the recess and the projection can have various shapes.

[0014]

As another aspect of the present invention, the rotary body mounting device may be the rotary body mounting device 30 in which the rotary body has at least one engaging mechanism (3016, 3018), and the attaching/detaching device 40 or the rotary body hold device 50 has an engaged mechanism (434, 435) which engages with the engaging mechanism (3016, 3018).

With this, it becomes possible to reliably prevent the rotary body 301 from rotating.

[0015]

As another aspect of the present invention, an oil collection device may be an oil collection device including: the rotary body mounting device 30; a power device 4 which rotates the rotary body mounting device 30; and an oil collection member 5 which collects oil.

With this, by additionally providing the oil collection member 5, even in an environment in which oil easily adheres, use of the rotary body mounting device 30 is facilitated.

[0016]

As another aspect of the present invention, a range hood may be a range hood 1 including the rotary body mounting device 30 or the oil collection device according to the above aspect.

The rotary body mounting device and the oil collection device encompassed in the present invention can be used in various rotary bodies 301 and, among them, the rotary body 301 used in the range hood 1 includes a grease filter and a fan, and it is proved that the rotary body mounting device and the oil collection device can be utilized for the grease filter and the fan.

[Advantageous Effects of Invention]

[0017]

According to the present invention, it is possible to integrally attach and detach the rotary body mounting device comprised of the rotary body and the attaching device to and from the power shaft, and hence working efficiency is improved.

[Brief Description of Drawings]

[0018]

[Fig. 1]

Fig. 1 is a perspective view from a bottom face side of a range hood from which a

[CLAIMS]

[Claim 1]

A rotary body mounting device which is inserted into a power shaft, the rotary body mounting device comprising:

a rotary body; and

an attaching device, wherein the attaching device has:

an insertion hole into which the power shaft is inserted;

a drive connecting part which is connected to the power shaft;

a power shaft attaching/detaching mechanism operation part which attaches and detaches the rotary body mounting device to and from the power shaft on a side on which the power shaft is not inserted into the attaching device with the rotary body used as a reference; and

a rotary body attaching/detaching mechanism operation part which attaches and detaches the rotary body to and from the rotary body mounting device on a side on which the power shaft is inserted into the attaching device with the rotary body used as the reference, wherein

the rotary body attaching/detaching mechanism operation part enables to detach the rotary body by press operation.

[Claim 2]

The rotary body mounting device according to claim 1, wherein the attaching device includes an attaching/detaching device which has the power shaft attaching/detaching mechanism operation part and a rotary body hold device which has the rotary body attaching/detaching mechanism operation part.

[Claim 3]

The rotary body mounting device according to claim 2, wherein

the attaching/detaching device includes a boss tube which is inserted into the rotary body, and

the rotary body attaching/detaching mechanism operation part of the rotary body hold device is provided so as to retain and release the boss tube.

[Claim 4]

The rotary body mounting device according to claim 2 or 3, wherein the

attaching/detaching device and/or the rotary body hold device has an urging part which presses the rotary body.

[Claim 5]

The rotary body mounting device according to claim 4, wherein

a tapered face which contracts toward a side of the rotary body is provided in the attaching/detaching device,

the urging part of the rotary body hold device is configured by an urging member which pinches the tapered face, and

the urging part of the rotary body hold device is configured to function also as a rotary body attaching/detaching mechanism by providing an operation part which opens the urging member.

[Claim 6]

The rotary body mounting device according to any one of claims 2 to 5, wherein

the rotary body has a recess and/or a projection on a mounting face to which the attaching/detaching device and/or the rotary body hold device is mounted, and a projection and/or a recess is provided in the attaching/detaching device and/or the rotary body hold device so as to fit into the recess and/or the projection.

[Claim 7]

The rotary body mounting device according to any one of claims 2 to 6, wherein

the rotary body has at least one engaging mechanism, and

the attaching/detaching device or the rotary body hold device has an engaged mechanism which engages with the engaging mechanism.

[Claim 8]

An oil collection device comprising:

the rotary body mounting device according to any one of claims 1 to 7;

a power device which rotates the rotary body mounting device; and

an oil collection member which collects oil.

[Claim 9]

A range hood comprising the rotary body mounting device according to any one of claims 1 to 7 or the oil collection device according to claim 8.