assistance device. Since the movement assistance device is fitted onto the body of the wearer, the wearer needs to support the weight of the movement assistance device. Furthermore, the non-grounded-type movement assistance device is fitted by, for example, being slung over the shoulders of the wearer or being wound around the waist of the wearer, and therefore is likely to limit a free movement of the wearer compared with the case of the grounded-type movement assistance device. The non-grounded-type movement assistance device is used in an application for simpler and easier assistance on the movement with relatively small force.

[0005]

Patent Literature (PTL) 1 discloses a non-grounded-type movement assistance device. This movement assistance device assists forward bending action of the wearer.

[Citation List]

[Patent Literature]

[0006]

[PTL 1] Japanese Patent No. 5526444

[Summary of Invention]

[Technical Problem]

[0007]

The movement assistance device disclosed in PTL 1 includes a back frame and the like formed from a rigid member in order to maintain the structure of the movement assistance device. The rigid member maintains the form, thereby limiting a free movement of the wearer.

[0008]

Embodiments of the present invention solve the aforementioned existing problem and provide a movement assistance device that assists a movement of a wearer while maintaining the degree of freedom of the movement.

[Solution to Problem]

[0009]

According to an aspect of the present invention, there is provided a movement assistance device including: a back plate that is fitted onto a back of a wearer; a back frame that has an elongated shape and is supported by a rotating shaft so as to be rotatable in a plane parallel to the back plate, the rotating shaft being fixed to the back plate; a side frame that is rotatably supported by a rotating shaft and extends from the back frame toward a vicinity of a side waist of the wearer, the rotating shaft being fixed to the back frame and parallel to a longitudinal direction of the back frame; a thigh holding portion that is fitted onto an anterior thigh of the wearer; and a drive portion that is connected to each of the side frame and the thigh holding portion and generates force that increases an angle between the side frame and the thigh holding portion.

[0010]

With this, the movement assistance device can independently rotate the back frame with respect to the back plate and rotate the side frame with respect to the back frame according to the movement of the wearer. Thus, even when the wearer moves to twist his or her upper body or moves to swing his or her body so as to change the height of his or her left and right shoulders, the movement assistance device can follow the movement of the wearer without restricting the movement and, as necessary, assist the movement. Thus, the movement assistance device is capable of assisting the movement of the wearer while maintaining the degree of freedom of the movement.

[0011]

For example, the side frame is rotatably supported by the back frame at both ends of the back frame and rotates around an axis connecting the both ends of the back frame as the rotating shaft.

[0012]

With this, the side frame is more stably supported with respect to the back frame and can follow the movement of the

consumption, or impact mitigation. Furthermore, the advantageous effect of improving the comfort for the wearer who is fitted with the movement assistance device is produced.

[0033]

For example, the thigh holding portion includes: a thigh fitting portion that is fitted onto a thigh of the wearer; and a third adjustment portion that is detachably attached to a surface of the thigh fitting portion, the surface facing the wearer in a state where the movement assistance device is fitted onto the wearer.

[0034]

With this, the degree of fitting tightness between the thigh holding portion of the movement assistance device and the body of the wearer is further increased. This further improves the movement assistance performance of the movement assistance device and further improves the advantageous effect of reducing power consumption.

[0035]

For example, the third adjustment portion is a cushioning member.

[0036]

With this, it is possible to improve the advantageous effect such as an improvement in the movement assistance performance of the movement assistance device, a reduction in the power consumption, or impact mitigation. Furthermore, the advantageous effect of improving the comfort for the wearer who is fitted with the movement assistance device is produced.

[Advantageous Effects of Invention]

[0037]

The movement assistance device according to embodiments of the present invention is capable of assisting a movement of a wearer while maintaining the degree of freedom of the movement.

[Brief Description of Drawings]

[0038]

[FIG. 1]