

with the movable floor of the boarding bridge being located at a position lower than the floor portion of the entrance. This enables opening and closing of the door of the entrance of the aircraft. After the door has been fully opened, the movable floor of the boarding bridge is lifted to substantially the same height as the floor portion of the entrance. This eliminates the level difference between the floor portion of the entrance and the movable floor of the boarding bridge so that a passenger (e.g., wheelchair passenger) can easily step onto the movable floor from the aircraft. Subsequently, the movable floor of the boarding bridge is lowered to substantially the same height as the floor portion of the cab. This eliminates the level difference between the movable floor and the floor portion of the cab so that the passenger can easily move to the terminal, passing through the passageway of the boarding bridge.

Patent Literature 1: JP-A-2004-155257

[0007] However, the boarding bridge of Patent Literature 1 requires lifting and lowering of the movable floor whenever a wheelchair passenger, for example, embarks onto or disembarks from the aircraft, which hampers smooth passenger embarkation and disembarkation. Thus, the technique disclosed in Patent Literature 1 still leaves room for improvement with regard to smooth passenger embarkation and disembarkation.

[0008] Another disadvantage is such that since there exists a level difference between the movable floor and each side of the cab when the movable floor is lifted, the wheelchair passenger feels insecurity, worrying that his wheelchair might run off.

SUMMARY OF THE INVENTION

[0009] ~~The invention is directed to overcoming the problems described above and a primary object~~Embodiments of the invention is ~~therefore to provide a~~ boarding bridge capable of easing the anxiety of passengers and more particularly wheelchair passengers and allowing them to smoothly get on and off a mobile object.

[0010] ~~The foregoing object can be accomplished by a boarding bridge~~

~~according to one aspect of the invention, the boarding bridge comprising:~~

~~—— a walkway;~~

~~—— a liftable passage;~~

~~—— which is located within a plane of the walkway when its plan view is viewed and can be lifted and lowered in order that it is connected to an entrance of a mobile object; and~~

~~—— which is configured such that when lifted, one end to be connected to the entrance rises, while the other end, located away from the one end, being kept in a condition in which substantially no level difference exists between the other end and the walkway, whereby a passage including a rampway located between the one end and the other end and having no step-like level difference is formed, and~~

~~—— a protective member which projects upward along a side of the liftable passage when the liftable passage is lifted.~~

[0010] According to an aspect, there is provided a boarding bridge comprising: a walkway; a liftable passage; which is located within a plane of the walkway when its plan view is viewed and can be lifted and lowered in order that it is connected to an entrance of a mobile object; and which is configured such that when lifted, one end to be connected to the entrance rises, while the other end, located away from the one end, being kept in a condition in which substantially no level difference exists between the other end and the walkway, whereby a passage including a rampway located between the one end and the other end and having no step-like level difference is formed, and

a protective member which projects upward along a side of the liftable passage when the liftable passage is lifted, wherein the protective member is operated in conjunction with the lifting operation of the liftable device.

[0011] According to this arrangement, a liftable passage is provided which is configured to be lifted such that the one end rises while the other end is kept in a condition in which substantially no level difference exists between the other end and the walkway, whereby a passage including a rampway located between the one end and the other end and having no step-like level difference is formed.

This enables it to eliminate a level difference between the liftable passage and the entrance of the mobile object. Furthermore, there is no need to lift or lower the liftable passage, for example, whenever a wheelchair passenger embarks onto or disembarks from the aircraft, which leads to smooth passenger embarkation onto and disembarkation from the mobile object.

[0012] A protective member is also provided, which projects upward along a side of the liftable passage when the liftable passage is lifted. This eases, for example, the anxiety of a wheelchair passenger who worries that his wheelchair would run off the liftable passage.

[0013] The protective member may be configured to move to a position higher than the passage surface of the liftable passage when the liftable passage is lifted and to be retracted to a position of the same height as

[0025] In this arrangement, if the edge of the floor of the liftable deck is not parallel to the edge of the floor of the entrance of the mobile object, they can be made parallel to each other, using the tiltable floor. Effective connection between the liftable deck and the entrance can be established through the parallelism adjustment of the liftable deck to the entrance by the tiltable floor, for example, even during the movement of the drive columns of the boarding bridge.

[0026] The above and further ~~objects~~embodiments, features and advantages of the invention will more fully be apparent from the following detailed description with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] Fig. 1 is a layout view showing one example of boarding bridge systems having a boarding bridge constructed according to an embodiment of the invention.

[0028] Fig. 2 is a view showing a whole configuration of the boarding bridge according to the embodiment of the invention.

[0029] Fig. 3 schematically illustrates one constitutional example of a cab incorporated in the boarding bridge according to the embodiment of the invention.

[0030] Fig. 4 is a view showing one constitutional example of an adjustment passage and its surrounding structure, which view is taken in the direction of arrows Y of Fig. 3.

[0031] Fig. 5 is a view showing one constitutional example of the spherical slide bearing shown in Fig. 3.

[0032] Fig. 6 is a view showing the constitutional example of the adjustment passage and its surrounding structure, which view is taken in the direction of arrows X of Fig. 3.

[0033] Fig. 7 is a view showing the constitutional example of the surrounding structure of the adjustment passage, which view is taken in the direction of arrows Z of Fig. 6.

[0034] Fig. 8 is a view for use in describing one example of an operation for connecting the boarding bridge according to the embodiment of the