CLAIMS

[Claim 1]

An electric lock device installed in a door of a home delivery box, comprising:

a power supply section provided independently for each home delivery box;

an electric lock section that unlocks the door using electric power supplied from the power supply section;

a communication section that communicates with a portable terminal carried by a user of the home delivery box;

a storage section that stores a condition for unlocking;

a control section that compares information received by the communication section from the portable terminal with the condition for unlocking stored in the storage section, wherein the control section issues an unlock command to the electric lock section when the information received from the portable terminal matches the condition for unlocking; and

a remaining battery charge determination section that determines remaining battery charge in the power supply section, wherein the remaining battery charge determination section outputs a determined result to the control section;

wherein when the remaining battery charge in the power supply section falls to or below a first threshold value, the control section generates a battery replacement signal and transmits this signal from the communication section to the portable terminal, and

wherein when the remaining battery charge in the power supply section falls to or below a second threshold value which is lower than the first threshold value, the control section generates an unavailability signal and transmits this signal from the communication section to the portable terminal.

[Claim 2]

A home delivery box incorporating the electric lock device according to claims 1.

[Claim 3]

A home delivery box system configured by arranging a plurality of the home delivery box according to claim 2 in at least one of a vertical direction and a horizontal direction.

[Claim 4]

A home delivery box system, comprising a plurality of home delivery boxes,

wherein each of the home delivery boxes comprises an electric lock device;

wherein the electric lock device is installed in a door of the home delivery box, and comprises:

a power supply section provided independently for each home delivery box;

an electric lock section that unlocks the door using electric power supplied from the power supply section;

a communication section that communicates with a portable terminal carried by a user of the home delivery box;

a storage section that stores a condition for unlocking; and

a control section that compares information received by the communication section from the portable terminal with the condition for unlocking stored in the storage section,

wherein the control section issues an unlock command to the electric lock section when the information received from the portable terminal matches the condition for unlocking;

wherein the plurality of home delivery boxes are configured to be arranged along at least a vertical direction, and each of the home delivery boxes has, on a top face thereof, a pair of rail parts extending along a front-rear direction and being formed in an L-shape which is bent to extend along a widthwise direction of the home delivery box and has, on a bottom face thereof, a pair of leg parts extending along the front-rear direction and being bent to extend in a direction opposite to the pair of rail parts with respect to the widthwise direction; and

wherein two home delivery boxes are assembled together by inserting the pair of leg parts of one of the two home delivery box into the pair of rail parts of the other of the two home delivery boxes.

[Claim 5]

A home delivery box system, comprising a plurality of home delivery boxes,

wherein each of the home delivery boxes comprises an electric lock device;

wherein the electric lock device is installed in a door of the home delivery box, and comprises:

a power supply section provided independently for each home delivery box;

an electric lock section that unlocks the door using electric power supplied from the power supply section;

a communication section that communicates with a portable terminal carried by a user of the home delivery box;

a storage section that stores a condition for unlocking; and

a control section that compares information received by the communication section from the portable terminal with the condition for unlocking stored in the storage section,

wherein the control section issues an unlock command to the electric lock section when the information received from the portable terminal matches the condition for unlocking; and

wherein the plurality of home delivery boxes are arranged in rows and columns along a vertical direction and a lateral direction, and are integrated into a single unit by coupling, using bolts and nuts, a bottom face and a top face of adjacent home delivery boxes in the plurality of home delivery boxes and side faces of adjacent home delivery boxes in the plurality of home delivery boxes.