{CLAIMS}

{Claim 1}

A mechanical parking apparatus comprising:

a solar cell that converts solar light to electrical power;

an electric power load that utilizes DC power; and

a power conditioner that outputs electrical power generated by the solar cell as AC power and DC power,

wherein the DC power output from the power conditioner is supplied to the electric power load, and the AC power output from the power conditioner is transmitted to a power grid.

{Claim 2}

A mechanical parking apparatus according to Claim 1,

wherein a voltage of the DC power output from the power conditioner is set to be equal to a predetermined value, and

the AC power output from the power conditioner is set to be equal to a difference between the DC power output from the power conditioner and electrical power generated by the solar cell.

{Claim 3}

A mechanical parking apparatus according to Claim 2, wherein the predetermined value is greater than a voltage of DC power

that is converted from the power grid and that is supplied to the electric power load.

{Claim 4}

A mechanical parking apparatus according to any one of Claims 1 to 3, further comprising:

a secondary battery into which the DC power output from the power conditioner is charged,

wherein the electric power load utilizes electrical power discharged from the secondary battery.

{Claim 5}

A mechanical parking apparatus according to Claim 4, further comprising:

an estimating means for estimating electrical power generated by the solar cell; and

a secondary-battery controlling means for charging the secondary battery within a range of the generated electrical power estimated by the estimating means.

{Claim 6}

A mechanical parking apparatus according to Claim 4 or 5, further comprising:

a converting means for converting DC power to AC power,

wherein, in the case in which power supply from the power

grid is stopped, the DC power output from at least one of the solar cell and the secondary battery is supplied to the electric power load that utilizes DC power, and the AC power converted by the converting means is supplied to the electric power load that utilizes AC power.

{Claim 7}

A mechanical parking apparatus according to Claim 6, wherein the secondary-battery controlling means makes the secondary battery discharge electrical power equal to the difference between the electrical power generated by the solar cell and the electrical power utilized by the electric power load.

{Claim 8}

A mechanical parking apparatus according to Claim 6 or 7, wherein the electric power load that utilizes AC power includes a charging device for charging a secondary battery provided in an electric vehicle.

{Claim 9}

A mechanical parking apparatus comprising:

a solar cell that converts solar light to electrical power;

an electric power load that utilizes DC power; and

a power conditioner that transmits electrical power

generated by the solar cell to a power grid as AC power and that supplies this generated electrical power to the electric power load as DC power,

wherein the transmission of the AC power from the power conditioner to the power grid is interrupted while the DC power is being supplied to the electric power load from the power conditioner.

{Claim 10}

A mechanical parking apparatus according to Claim 9, wherein the DC power is supplied to the electric power load from the power conditioner in the case in which the electric power load consumes electrical power, and the AC power is transmitted to the power grid from the power conditioner in the case in which the electric power load does not consume electrical power.

{Claim 11}

A mechanical parking apparatus according to Claim 9 or 10, wherein, in the case in which the electric power load is regenerating electrical power, the AC power is transmitted to the power grid from the power conditioner, and the electrical power regenerated by the electric power load is also transmitted to the power grid.

{Claim 12}

A mechanical parking apparatus according to any one of Claims 9 to 11, further comprising:

a secondary battery into which at least one of the DC power output from the power conditioner and the electrical power regenerated by the electric power load is charged,

wherein the electrical power charged into the secondary battery is utilized for power consumption at the electric power load.

{Claim 13}

A mechanical parking apparatus according to Claim 12, wherein, in the case in which the electric power load consumes electrical power, the electrical power charged into the secondary battery is supplied to the electric power load and, also, the electrical power generated by the solar cell is transmitted to the power grid.

{Claim 14}

A mechanical parking apparatus according to Claim 12 or 13, wherein, in the case in which the electric power load regenerates electrical power, the regenerated power is charged into the secondary battery and, also, the electrical power generated by the solar cell is transmitted to the power grid.

{Claim 15}

A mechanical parking apparatus according to any one of Claims 12 to 14, wherein the electrical power charged into the secondary battery can be transmitted to the power grid via the power conditioner.

{Claim 16}

A mechanical parking apparatus according to any one of Claims 12 to 15, wherein a capacity that is set in advance and to which the secondary battery is charged by performing regenerative operation once or more is set for the secondary battery as a reserve capacity, and the electrical power generated by the solar cell is not charged into the reserve capacity.

{Claim 17}

A power supplying method for a mechanical parking apparatus provided with a solar cell that converts solar light to electrical power, an electric power load that utilizes DC power, and a power conditioner that outputs the electrical power generated by the solar cell as AC power and DC power, the power supplying method comprising:

supplying the DC power output from the power conditioner to the electric power load; and

transmitting the AC power output from the power conditioner to a power grid.

{Claim 18}

A power supplying method for a mechanical parking apparatus provided with a solar cell that converts solar light to electrical power, an electric power load that utilizes DC power, and a power conditioner that transmits electrical power generated by the solar cell to a power grid as AC power and that supplies this generated electrical power to the electric power load as DC power, the power supplying method comprising:

interrupting the transmission of the AC power from the power conditioner to the power grid while the DC power is being supplied to the electric power load from the power conditioner.

{Claims}

{Claim 1}

A mechanical parking apparatus comprising:

a solar cell that converts solar light to electrical power;

an electric power load that utilizes DC power;

a power conditioner that outputs electrical power generated by the solar cell as AC power and DC power;

a secondary battery into which the DC power output from the power conditioner is charged;

an estimating means for estimating electrical power generated by the solar cell;

a measuring means for measuring the DC power output from the power conditioner or electrical power flowing into a power grid; and

a secondary-battery controlling means for charging the secondary battery with reference to the measurement result of the measuring means so that current flows within a range of the generated electrical power estimated by the estimating means,

wherein the DC power output from the power conditioner or electrical power discharged from the secondary battery is supplied to the electric power load, and the AC power output from the power conditioner is transmitted to the power grid.

{Claim 2}

A mechanical parking apparatus according to Claim 1,

wherein a voltage of the DC power output from the power conditioner is set to be equal to a predetermined value, and

the AC power output from the power conditioner is set to be equal to a difference between the DC power output from the power conditioner and electrical power generated by the solar cell.

{Claim 3}

A mechanical parking apparatus according to Claim 2, wherein the predetermined value is greater than a voltage of DC power that is converted from the power grid and that is supplied to the electric power load.

{Claim 4}

A mechanical parking apparatus according to any one of Claims 1 to 3, further comprising:

a converting means for converting DC power to AC power,

wherein, in the case in which power supply from the power grid is stopped, the DC power output from at least one of the solar cell and the secondary battery is supplied to the electric power load that utilizes DC power, and the AC power converted by the converting means is supplied to the electric power load that utilizes AC power.

{Claim 5}

A mechanical parking apparatus according to Claim 6, wherein the secondary-battery controlling means makes the secondary battery discharge electrical power equal to the difference between the electrical power generated by the solar cell and the electrical power utilized by the electric power load.

{Claim 6}

A mechanical parking apparatus according to Claim 6 or 7, wherein the electric power load that utilizes AC power includes a charging device for charging a secondary battery provided in an electric vehicle.

{Claim 7}

A power supplying method for a mechanical parking apparatus provided with a solar cell that converts solar light to electrical power, an electric power load that utilizes DC power, a power conditioner that outputs the electrical power generated by the solar cell as AC power and DC power, a secondary battery into which the DC power output from the power conditioner is charged, an estimating means for estimating electrical power generated by the solar cell, a measuring means for measuring the DC power output from the power conditioner or electrical power flowing into a power grid, and a secondary-battery controlling means for charging the secondary battery with reference to the measurement result

of the measuring means so that current flows within a range of the generated electrical power estimated by the estimating means, the power supplying method comprising:

supplying the DC power output from the power conditioner or electrical power discharged from the secondary battery to the electric power load; and

transmitting the AC power output from the power conditioner to the power grid.