CLAIMS

1. A non-contact power supply system suitable for use with a track rail with a plurality of areas of AC power supply through which a traveling vehicle travels powered by AC power, the non-contact power supply system comprising:

(a) a plurality of feeders, wherein each of the plurality of feeders is:

(i) configured to be provided along the track rail;

(ii) configured to supply the AC power to the traveling vehicle in a non-contact manner; and

(iii) configured to be associated with a corresponding area of the plurality of areas of AC power supply;

(b) a plurality of non-contact power supply devices,

(i) wherein each of the plurality of non-contact power supply devices supplies the AC power to a corresponding feeder of the plurality of feeders; and

(ii) wherein the plurality of non-contact power supply devices includes a first non-contact power supply device and a second non-contact power supply device; and

(c) an electrostatic coupling unit, wherein the electrostatic coupling unit electrostatically couples the first non-contact power supply device to the second non-contact power supply device.

2. The non-contact power supply system according to claim 1, wherein phases of alternating currents flowing through the plurality of feeders are not synchronized with each other.

3. The non-contact power supply system according to claim 1 or 2, further comprising a housing in which the plurality of non-contact power supply devices are accommodated, wherein the electrostatic coupling unit is accommodated inside the housing.

4. The non-contact power supply system according to any one of claims 1 to 3, further comprising a switching unit configured to switch a coupling state and a non-coupling state of

electrostatic coupling between the first non-contact power supply device and the second non-contact power supply device.

5. The non-contact power supply system according to any one of claims 1 to 4, further comprising a plurality of inverters,

(a) wherein each of the plurality of inverters is configured to convert power supplied from a power supply into the AC power;

(b) wherein each of the plurality of non-contact power supply devices is provided between:

(i) a corresponding inverter of the plurality of inverters; and

(ii) the corresponding feeder of the plurality of feeders;

(c) wherein each of the non-contact power supply devices has a filter circuit including a reactor and a capacitor; and

(d) wherein a first impedance of the electrostatic coupling unit is matched to a second impedance of the filter circuit as viewed from a side of the traveling vehicle receiving the AC power.

6. A transportation system comprising:

the non-contact power supply system according to any one of claims 1 to 5; and

a traveling vehicle that travels by receiving power transmitted from the non-contact power supply system.