CLAIMS

1. An electromagnetic wave detection device comprising an electromagnetic wave observation unit and a detecting unit,

the detecting unit disposed of in a second space partitioned from a first space in which the electromagnetic wave generation source is disposed of by a partition plate to attenuate propagation of an electromagnetic wave and in which there is not the electromagnetic wave generation source,

the electromagnetic wave observation unit including a metal wire having a penetrating portion to penetrate a through hole formed in the partition plate through the first space and the second space while being separated from a peripheral wall of the through hole, a protruding portion to protrude from the penetrating portion to the first space apart from a surface of the partition plate without contact and receive the electromagnetic wave from the electromagnetic wave generation source, and an extending portion to extend from the penetrating portion to the second space apart from a rear surface of the partition plate without contact and

a coil connected between one end of the extending portion of the metal wire and the ground point, wherein

the detecting unit detects a voltage between both terminals of the coil.

2. The electromagnetic wave detection device according to claim 1, comprising:

Instead of just a coil,

a resonance circuit parallelly connecting a coil and a capacitor connected between one end of the extending portion of the metal wire and the ground point, wherein

the detecting unit detects a voltage between both terminals of the resonance circuit.

3. An electromagnetic wave detection device comprising an electromagnetic wave observation unit; a detecting unit; and a measurement unit,

the detecting unit disposed in a second space partitioned from a first space in which the electromagnetic wave generation source is disposed by a partition plate to attenuate propagation of an electromagnetic wave and in which there is not the electromagnetic wave generation source,

the measurement unit disposed in a forth space different from the first space and the second space, partitioned from the second space by a second partition plate to attenuate propagation of an electromagnetic wave,

the electromagnetic wave observation unit including a metal wire having a penetrating portion to penetrate a through hole formed in the partition plate through the first space and the second space while being separated from a peripheral wall of the through hole, a protruding portion to protrude from the penetrating portion to the first space apart from a surface of the partition plate without contact and receive the electromagnetic wave from the electromagnetic wave generation source, and an extending portion to extend from the penetrating portion to the second space apart from a rear surface of the partition plate without contact, one end placed in the second space side being connected to the ground point placed in the second space side, wherein

the detecting unit detects at least one of an electric field or a magnetic field superimposing on the extending portion of the metal wire without contact, and

the measurement unit receives electromagnetic wave detection signals from the detecting unit.

4. The electromagnetic wave detection device according to claim 3, wherein

the detecting unit includes a contact sensor detecting a voltage appearing

between one end of the protruding portion of the metal wire and the ground point, and

the measurement unit receives electromagnetic wave detection signals from the detecting unit.

5. An electromagnetic wave detection device comprising: an abnormal electromagnetic wave detecting unit; a disturbance noise detection unit; and a measurement unit, wherein

the abnormal electromagnetic wave detecting unit includes: a first electromagnetic wave observation unit and a first detecting unit,

the first detecting unit disposed in a second space partitioned from a first space in which the electromagnetic wave generation source is disposed by a first partition plate to attenuate propagation of an electromagnetic wave and in which there is not the electromagnetic wave generation source,

the first electromagnetic wave observation unit including a first metal wire having a penetrating portion penetrating through a first space and a second space through a first through hole formed in a first partition plate, the penetrating portion being separated from a peripheral wall of the first through hole, a protruding portion protruding from the penetrating portion to the first space apart from a surface of the first partition plate without contact and receiving the electromagnetic wave from the electromagnetic wave generation source, and an extending portion extending from the penetrating portion to the second space apart from a rear surface of the first partition plate without contact, and a first circuit element connected between one end of the extending portion of the first metal wire and a ground point located on a side of the second space; and a first detection unit to detect a voltage between both ends of the first circuit element in the

first electromagnetic wave observation unit,

the disturbance noise detection unit includes: a second electromagnetic wave observation unit and a second detecting unit,

the second detecting unit is disposed in the second space,

the second electromagnetic wave observation unit including a second metal wire having a penetrating portion penetrating through a fifth space and a second space formed on the first partition plate partitioning the fifth space and the second space in which an electromagnetic generation source does not exist partitioned by a second partition plate from the first space to attenuate propagation of an electromagnetic wave, the penetrating portion being separated from a peripheral wall of a second through hole, the protruding portion protruding from the penetrating portion to the fifth space apart from a surface of the first partition plate without contact and receiving the electromagnetic wave in the fifth space, and an extending portion extending from the penetrating portion to the second space apart from a rear surface of the first partition plate without contact, and a second circuit element connected between one end of the extending portion of the second metal wire and a ground point located on a side of the second space; and a second detection unit to detect a voltage between both ends of the second circuit element in the second electromagnetic wave observation unit, and

the measurement unit monitors a difference between a voltage value detected by the first detection unit in the abnormal electromagnetic wave detecting unit and a voltage value detected by the second detection unit in the disturbance noise detection unit as an electromagnetic wave detection signal.