CLAIMS

1. A discharge detection system comprising:

a current detection section configured to detect a value of current flowing in a circuit;

a high pass filter configured to detect noise in a high frequency band superimposed on the circuit by a discharge phenomenon; and

a determination section electrically connected to the current detection section and the high pass filter, characterized in that

the determination section executes process including

determining whether the discharge phenomenon has occurred based on the noise in the high frequency band detected by the high pass filter,

when the discharge phenomenon is determined to have occurred, calculating an increase or decrease in the current value at the occurrence of the discharge phenomenon based on the current value detected by the current detection section,

specifying the discharge phenomenon to have occurred between different electrodes when the current value at the occurrence of the discharge phenomenon increases, and

specifying the discharge phenomenon to have occurred between identical electrodes when the current value at the occurrence of the discharge phenomenon decreases.

2. The discharge detection system according to Claim 1, wherein

a plurality of time periods are set in accordance with magnitude of the current value,

the determination section executes, when the discharge phenomenon is determined to have occurred, process to output a cutoff signal after the time period has passed set in accordance with the magnitude of the current value at the occurrence of the discharge phenomenon, and

a switch electrically connected to the circuit turns into an open state based on the cutoff signal to interrupt power supply to the circuit.

3. The discharge detection system according to Claim 1 or 2, wherein

the high pass filter is electrically connected to the determination section via first wiring,

the current detection section is electrically connected to the determination section via second wiring, and

the determination section determines whether the discharge phenomenon has occurred based on the noise in the high frequency band input via the first wiring and calculates the increase or decrease in the current value at the occurrence of the discharge phenomenon based on the current value input via the second wiring.