

【Title of the Invention】    Electrostatic Precipitation Apparatus for Room Ventilation and Ventilation System Incorporating Same

【Title of Document】        Abstract

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【Object】

An electrostatic precipitation apparatus for room ventilation is provided for enabling a stable particle collection efficiency to be maintained for a long period, resuming the formation of a normal electric field by applying an appropriate voltage at all times to continue a particle collecting action even after either an anomalous discharge due to humidity or the like from which the apparatus can be naturally recovered or an anomalous discharge from which the apparatus cannot be naturally recovered, to reduce the frequency of maintenance. A ventilation system incorporating the apparatus is also provided.

【Solution】

An electrostatic precipitation unit 2 comprises an ionization section 3, a particle collection section 4, and a power supply 5 associated with these units. The electrostatic precipitation apparatus comprises a constant-current control unit 6 for supplying the ionization section 3 with a constant current, a sensing unit 7 for sensing a voltage value and current value applied to the particle collection section 4 at all times, a voltage step control unit 8 for issuing a command to change the predetermined voltage up and down to such a level which does not cause an anomalous discharge in response to an anomalous discharge which can give rise to sudden fluctuations in the applied voltage value and current value or continued fluctuations within a certain range, and a voltage changing unit 9 for changing the predetermined voltage in response to a voltage change command. Upon occurrence of an anomalous discharge, the power supply 5 is once shut off, and then, the voltage changing unit 9 changes the predetermined voltage to allow the particle collection section 4 to continue a particle collecting action. When the particle collecting action continues for a predefined time, the predetermined voltage is increased to continue the particle collecting action. The foregoing object is achieved in this way.

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【Selected Figure】        Fig. 1