CLAIMS

1. An ozone generating apparatus comprising:

a cylindrical high-voltage electrode and a cylindrical low-voltage electrode that is arranged coaxially with respect to the cylindrical high-voltage electrode, the ozone generating apparatus applying a predetermined high voltage between the high-voltage electrode and the low-voltage electrode via a dielectric substance to cause discharge for generating ozone, wherein

a discharge gap length d is 0.3 mm to 0.5 mm,

any one of the low-voltage electrode and the high-voltage electrode is formed as a metal electrode, and the other one is formed as a dielectric electrode,

the metal electrode has a sine-curved shape,

a projection group including a plurality of projections having dome shape, which are arranged on same circumference of the metal electrode, is arranged on an inner peripheral surface of the metal electrode opposed to the dielectric electrode for holding the metal electrode to be coaxial with the dielectric electrode while keeping the discharge gap length, and

the projection group is arranged at three or more positions, that is, a center portion in a longitudinal direction of a discharging space and positions away from

both ends of the discharging space by a predetermined distance L_3 which satisfies the following expression,

$$0.0 \leq L_3/L \leq 0.1$$

where L represents~~is~~ length of the discharging space.

2. The ozone generating apparatus according to~~of~~ claim 1, wherein the predetermined distance L_3 is determined based on the position of the projection group, which minimizes a deviation amount of a discharge gap length in the discharging space with respect to a reference discharge gap length set in advance.

3. The ozone generating apparatus according to~~of~~ claim 1 or 2, wherein a number of the projections including in the projection group is selected from four, five, or six based on a total value of reaction force caused by the projection and a fine-tuning amount of height of the projection.

4. The ozone generating apparatus according to~~of~~ claim 3, wherein the projections constituting the projection group are arranged on same circumference or in an annular region having a predetermined width.

5. The ozone generating apparatus according to any one of claims 1 to 4, wherein

$0.01 \leq \alpha \leq 0.10$ mm

is satisfied where a height of the projection from the inner peripheral surface of the metal electrode is represented by $(d - \alpha)$ with respect to the discharge gap length d.

6. The ozone generating apparatus according to any one of claims 1 to 5, wherein

the dielectric electrode is inserted into the metal electrode, and

the metal electrode includes a plurality of projections having dome shape for suppressing movement formed thereon, each projection having dome shape for suppressing movement being higher than the projection and regulating movement of the dielectric electrode in an inserting direction by being in contact with a distal end of the inserted dielectric electrode.