June 6, 1944. S. TSUNO 2,350,842

OZONIZER

Filed Nov. 24, 1939

Fig. 1.

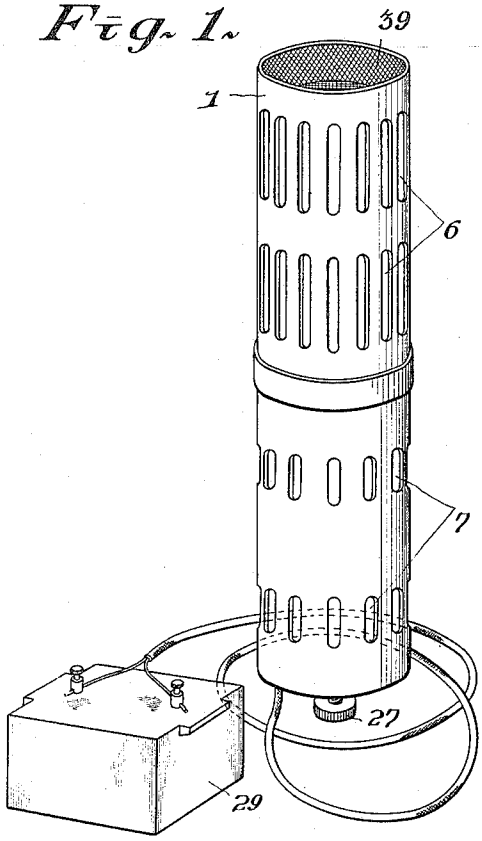



Fig. 2.

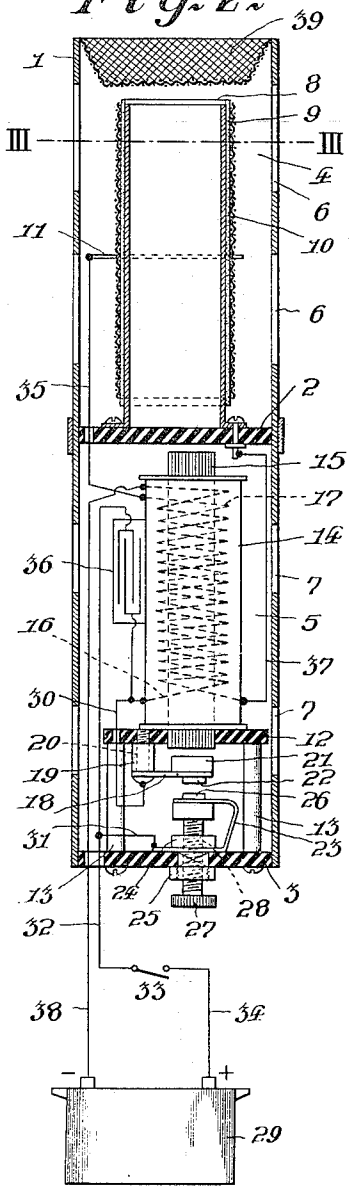
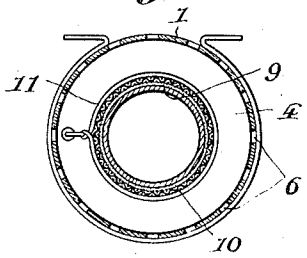



Fig. 3.




INVENTOR,
S. Tsuno

BY:
Glascock Downing & Seebold

ATTORNEYS.

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## OZONIZER

Shozo Tsuno, Kobe-Shi, Japan; vested in the Alien Property Custodian

Application November 24, 1939, Serial No. 305,982

2 Claims. (Cl. 175—357)

This invention relates to improvements in ozonizers, and has for its object to provide an ozonizer, simple and compact in construction, and efficient in operation.

In the accompanying drawing;

Fig. 1 is a perspective view of an ozonizer according to the invention with a battery connected thereto;

Fig. 2 is a vertical sectional view of the ozonizer shown in Fig. 1 in larger scale with the battery connected thereto; and

Fig. 3 is a cross sectional view on line III—III of Fig. 2.

Referring to the drawing, 1 represents a casing provided with an intermediate partition 2 and a bottom member 3 to form an upper chamber 4 and a lower chamber 5. The casing is also formed with a number of perforations 6 and 7 in the side of the upper and lower chambers respectively. The partition and the bottom are made of an insulating material, such as ebonite, Bakelite or the like. A cylinder 8 of aluminium is securely mounted in the upper chamber 4 on the partition 2, which is painted with a paint non-corrosive for aluminium and is coated with a surrounding mica cylinder which in turn is coated with a surrounding cylinder 10 made of nickeled brass wire network. A silver wire 11 is arranged around the outer cylinder 10. A base member 12 of an insulating material is securely mounted in the lower chamber 5 at a suitable distance from the bottom 3 by means of supports 13 secured on the said bottom.

An induction coil 14 is securely mounted in the lower chamber 5 on the base 12, of which the core and primary and secondary coils are indicated at 15, 16 and 17 respectively. A spring 18 is at one end secured on the underside of the base 12 by means of a spacer member 19 and a screw 20, the free end of the spring carrying an armature 21 and a contact piece 22. Another spring 23 substantially of a U-shape is at its one arm secured to the bottom 3 by means of a bolt 24 and a nut 25, the other arm carrying a contact piece 26 and being adjustable by means of an adjusting screw 27 passing through a threaded hole 28 of the bolt 24 to adjust the gap between the contact pieces 22 and 26.

The primary coil 16 is at one end connected to the positive terminal of a source of electricity, such as a battery 29 through a conductor 30, the contact piece 22, the contact piece 26, the spring 23, conductors 31 and 32, a switch 33 and a conductor 34, the other end being connected to the negative terminal of the battery by a conductor 38. A condenser 36 is inserted between and across the conductors 30 and 32. The secondary coil 17 is at one end connected to the aluminium cylinder 8 by a conductor 37, the other end being connected to the silver wire 11 by a conductor 35. A container 39 of a meshwork for perfumery is supported in the top of the casing 1.

In operation, the switch 33 is closed, and then a current of high voltage is generated in the secondary coil by induction, which produces an electric discharge between the cylinder 10 of brass wire network forming a positive electrode and the aluminium cylinder 8 forming a negative electrode, whereby ozone is continuously produced and diffused through the perfumery container 39 of a meshwork on the top of the casing 1 and the perforations 6 in the upper chamber 4. The perforations 7 in the lower chamber 5 provide the passages for circulation of cooling air in the lower chamber 5 enclosing the induction coil 14.

It will be understood that the casing 1 may be formed of two separate parts, one corresponding to the upper chamber 4 and the other the lower chamber 5, within the scope of the invention.

I claim:

1. In ozone producing apparatus, a cylindrical metal casing, a partition of insulating material dividing the interior of said casing into a first chamber and a second chamber, an end member mounted in the end of said casing and substantially closing said first chamber, a plurality of mounting posts rigidly mounted within said first chamber upon said end member, a mounting member of insulating material rigidly carried by said mounting posts in spaced relationship with respect to said end member, magnetic core means rigidly carried by said mounting member and having a pole face exposed toward said end member at the central portion of said mounting member, armature means resiliently mounted on said mounting member in cooperating relationship with respect to said pole face whereby the magnetization of said core means effects the movement of said armature toward said pole face and the demagnetization of said core means results in the movement of said armature away from said pole face, a pair of cooperating contacts one of which is mounted to move with said armature means and the other of which is mounted upon said member, means adjustably mounting said other contact and providing an electrical contact therewith comprising a threaded stud

extending through said end member in alignment with said other contact and an angular leaf spring having a fixed end attached to said end member and a free end to which is rigidly attached said other contact, and induction coil means on said core means electrically connected to be energized by the engagement of said contacts with each other.

2. Apparatus as described in claim 1 wherein said induction coil means is a high potential transformer having its primary winding connected electrically in series with said contacts, and a condenser mounted within said first chamber and electrically connected across said contacts.

SHOZO TSUNO.