S. HELD.

OZONE GENERATOR.

APPLICATION FILED MAY 26, 1913.

1,085,579. Patented Jan. 27, 1914.

Fig. 1.

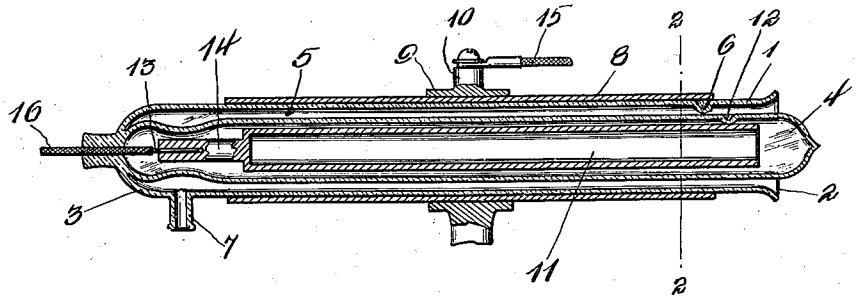


Fig. 2.

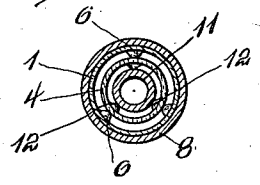
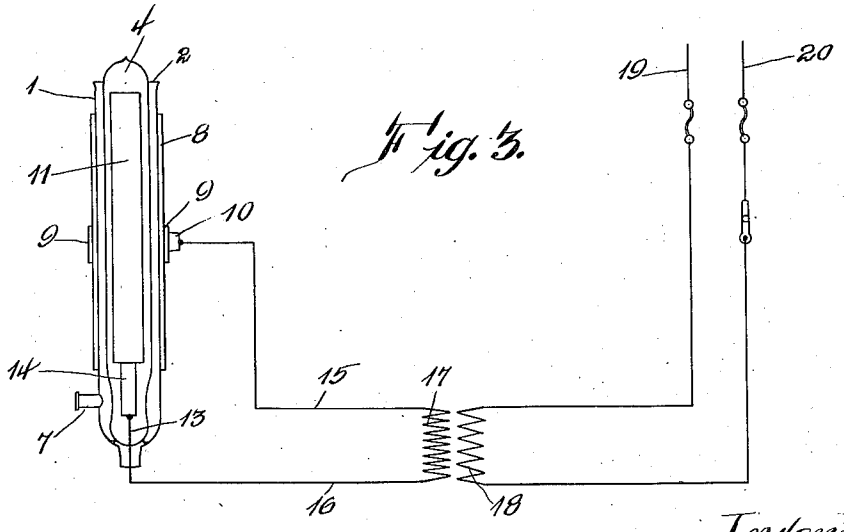


Fig. 3.



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UNITED STATES PATENT OFFICE.

SIEGFRIED HELD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HELD COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

OZONE-GENERATOR.

1,085,579. Specification of Letters Patent. Patented Jan. 27, 1914.

Application filed May 26, 1913. Serial No. 769,829.

To all whom it may concern:

Be it known that I, SIEGFRIED HELD, a subject of the Emperor of Austria-Hungary, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ozone-Generators, of which the following is a specification.

The invention relates to an improvement in generators, comprehending a simple and inexpensive structure designed particularly for producing highly concentrated pure ozone.

The main object of the present invention is the provision of an ozone generator in which the air admitted in comparatively large volume is compelled to travel through normally spaced dielectrics to a comparatively restricted outlet, the current poles being arranged respectively beyond the dielectrics with regard to the path of travel of the air, whereby an extended surface of the dielectrics is provided for air contact.

The invention in the preferred form of details will be described in the following specification, reference being had particularly to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of the ozone generator. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a diagrammatic view illustrating the connection of the generator in the circuit.

In the improved ozone generator the spaced dielectrics are shown as comprising an outer tube 1 having a flaring open end 2 and a closed opposite end 3, and an inner casing 4, in the form of a vacuum tube, the latter being co-extensive in length with the outer tube, and integral with the same at the closed end thereof. The vacuum tube is, beyond its connection with the outer tube, disposed in spaced parallel relation therewith, providing an ozonizing chamber 5, between the tubes. The spaced relation of the respective tubes is maintained through projections 6 formed on the inner surface of the outer tube, in any appropriate manner to provide bearing points for the inner tube.

Adjacent the closed end the outer tube is formed with a lateral cored nipple-like projection 7, having open communication with the chamber 5 and terminally formed for the removable connection therewith of a flexible tube or pipe for the delivery of the ozone to the desired point.

Surrounding the outer tube, and in direct contact therewith for the greater portion of its length is a suitable conducting strip 8, preferably foil, and surrounding this electrode is a metallic clip 9 carrying a binding post 10. A hollow electrode 11, of tube-like form, is arranged within the vacuum tube and held in concentric spaced relation with the wall thereof, such disposition of the electrode being maintained at one end of the vacuum tube by inwardly-extending projections 12 formed in the vacuum tube and bearing against the electrode, and at the opposite end by a platinum conductor 13 secured in the connected ends of the inner and outer tubes and in a reduced solid stem 14 of the electrode.

The improved ozone generator is energized through conductors 15 and 16, leading respectively to the binding post 10, and the platinum conductor 13, said conductors 15 and 16 leading from the secondary coil 17 of a transformer, the primary coil 18 of which is energized from any suitable source of alternating current through conductors 19 and 20.

The introduction of high tension electric current to the respective electrodes of the improved generator will inductively charge the surfaces of the respective dielectrics forming the chamber 5, forming the ozone from the oxygen, in a well-understood manner.

Having thus described my invention what I claim as new is:—

1. An ozone generator comprising concentrically-spaced dielectric hollow bodies forming an ozone chamber between them, the inner one of said bodies constituting a closed vacuum chamber, an electrode in contact with the outer surface of the outer body, and a continuous electrode arranged wholly within the inner body.

2. An ozone generator comprising concentrically-spaced outer and inner dielectric tubes, the outer tube being open at one end and formed with a restricted outlet at the opposite end, the inner tube constituting a closed vacuum chamber, an electrode in contact with the outer surface of the outer tube, and a continuous electrode arranged in concentric spaced relation with and within the inner tube.

3. An ozone generator comprising outer

and inner dielectric tubes, the outer tube being open at one end and closed at the opposite end, said outer tube being formed with a restricted outlet adjacent the closed end, the inner tube comprising a vacuum chamber and connected to the outer tube at the closed end of the latter, said tubes being arranged in concentric spaced relation to form an ozone chamber, means formed on the outer tube adjacent the open end thereof to engage the inner tube and maintain the spaced relation of said tube, an electrode in contact with the outer surface of the outer tube, and an electrode arranged in spaced relation with and within the inner tube.

4. An ozone generator comprising concentrically-spaced outer and inner dielectric tubes, the outer tube being open at one end and formed with a restricted outlet at the opposite end, the inner tube constituting a closed vacuum chamber, an electrode in contact with the outer surface of the outer tube, and a hollow electrode arranged in concentric spaced relation with and within the inner tube.

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