

S. SHEPHERD.
ELECTRIC OZONIZER.
APPLICATION FILED APR. 18, 1910.

1,011,503.

Patented Dec. 12, 1911.

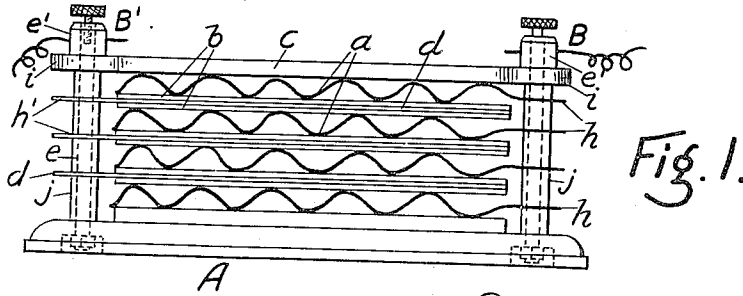


Fig. 2.

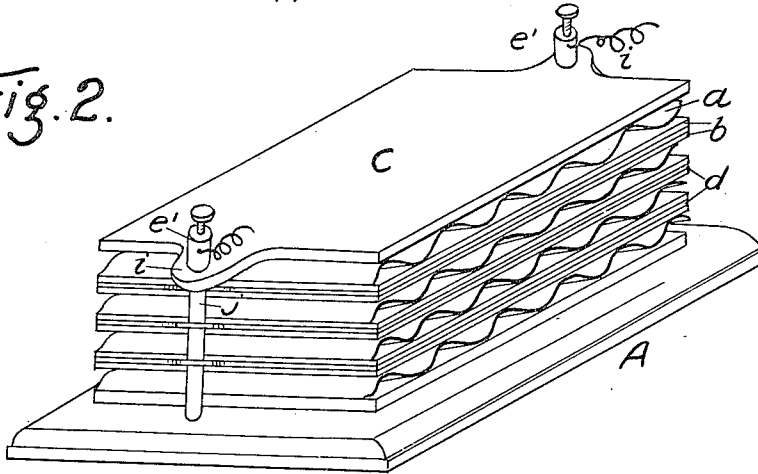


Fig. 4.

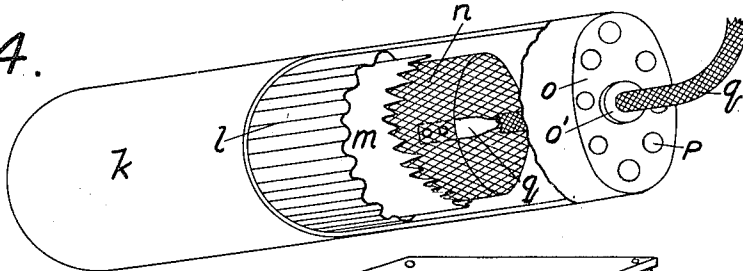
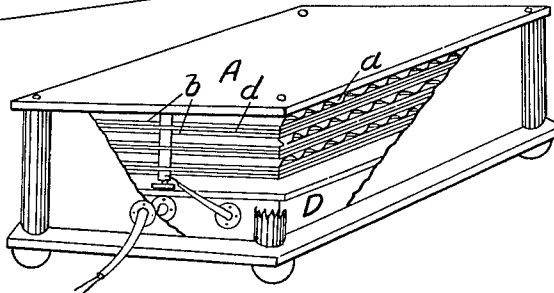


Fig. 3.



Witnesses:

J. B. Luels
G. M. Higgins

Inventor:

Stanley ... Shepherd,
by
W. T. Coffey
att'y.

UNITED STATES PATENT OFFICE.

STANLEY SHEPHERD, OF OTTAWA, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO
WILLIAM P. SHANNON, OF OTTAWA, CANADA.

ELECTRIC OZONIZER.

1,011,503.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, STANLEY SHEPHERD, a subject of the King of Great Britain, residing at Ottawa, in the county of Carleton, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Electric Ozonizers, of which the following is a specification.

The invention relates to improvements in electric ozonizers, as described in the present specification, and illustrated by the accompanying drawings that form part of the same.

The objects of the invention are to provide an ozone generator of simple and economical construction, and one that can be readily transported from place to place and easily connected with the source of power.

The invention consists essentially of an electrode composed of a corrugated sheet of metal gauze, a dielectric in contact with said corrugated sheet, an opposing electrode consisting of a suitable sheet of metal, means for clamping said electrodes and said dielectric together, and means for connecting same to the source of power whereby the current will pass from the evenly contacting corrugations of the electrode with the dielectric, through said dielectric in such manner that the discharge will be smooth and general, and the oxygen in the surrounding atmosphere will at once be converted into ozone.

In the drawings:—Figure 1. is a side elevation of my device. Fig. 2. is an isometrical view of Fig. 1. Fig. 3. is a view of the device complete in case, with part of same cut away to show the electrodes and the transformer D. Fig. 4. is a view of my invention adapted to tubular formation.

Like letters of reference indicate corresponding parts in each figure.

Referring to the drawings, A, is a suitable base plate provided at each end with the binding posts B, B', and having arranged thereon between said binding posts a series of electrodes.

*a—*a, are the electrodes composed of sheets of corrugated metal gauze contacting with the dielectrics *b—b*, of suitable material preferably of glass: *d—d* are electrodes of opposite polarity to the electrodes *a—*a, consisting of solid sheets of metal, also in contact with the dielectrics *b—b*.

e is a threaded rod in the binding posts

B, B' passing through the base-plate A, and suitably secured.

e' is a bushing or nut on the top of the binding posts adapted to receive and secure the power connections, and when tightened to clamp the electrodes and hold them in close contact with the dielectrics, in combination with the top C.

j, are the sleeves of the binding posts, *h* and *h'* are projecting conductors from the electrodes connecting same with the sleeves *j*.

The arrangement of the electrodes in series, consists of, the corrugated sheet of metal gauze, a sheet of glass in close contact with the corrugations in said gauze sheet, a sheet of solid metal, also in contact with the dielectric, another sheet of glass, and then the corrugated gauze sheet again and so on. I also use the same material, consisting of sheets of corrugated metal gauze for both electrodes, arranging them in such manner that the corrugations will be at right angles, thus forming, with the dielectric between, a plurality of squares having at the corners thereof discharging points. Or the similarly corrugated metal gauze sheets may be arranged so that the summits of the corrugations in each will be in direct opposition to one another. Both the above described methods will be found most satisfactory, while insuring an even-better circulation of air than the method first mentioned.

In Fig. 4, in which my device is shown in tubular form, *k*, is a suitable metal tube; *l*, is a sheet of corrugated metal gauze wound therein, on the outer side of the glass tube *m*, constituting the dielectric; *n*, is a sheet of plain metal gauze wound in the tube *m*, and in close contact with the inner side thereof. The sheet *n*, is connected to the power wire *q'* by the conductor *q*, passing through the perforated closed end of the tube *k*. *p* are the perforations in said closed end.

From the foregoing, it will be apparent that the corrugated metal gauze sheet for use as an electrode, in a device of this class, combined with the clamping means, insures an even and close contact with the dielectric, embracing the entire surface thereof, with a consequent general, and simultaneous discharge of the current. In addition to which, a free circulation of air is at all times guaranteed throughout the entire apparatus,

by means of these corrugations. This, coupled with such a satisfactory discharge, results in the immediate conversion of the oxygen in the surrounding atmosphere into ozone.

5 What I claim for my invention is:—

1. An electric ozonizer comprising an electrode, consisting of a corrugated sheet of metal gauze, a dielectric of suitable material in contact with the corrugations in said gauze sheet, an electrode of opposite polarity composed of a sheet of solid metal, and means for clamping said electrodes and said dielectric.

15 2. An electric ozonizer comprising an electrode consisting of a corrugated sheet of metal gauze, a dielectric in contact with the corrugations in said gauze sheet, an opposing electrode, means for clamping said electrodes and said dielectric together, and

means for connecting said electrodes to the source of power.

3. In an electric ozonizer, in combination, a dielectric, an electrode in contact with same and consisting of a sheet of metal gauze having a plurality of corrugations therein.

4. In an electric ozonizer, in combination, electrodes of opposite polarity consisting of a corrugated sheet of metal gauze, and a sheet of solid metal, a sheet of dielectric material between said electrodes, and in actual contact therewith, clamping means for holding and securing said contact.

Signed at Ottawa, this 12th day of April 1910.

S. SHEPHERD.

In the presence of—

W. T. CUFFE-QUIN,
C. M. WIGGINS.