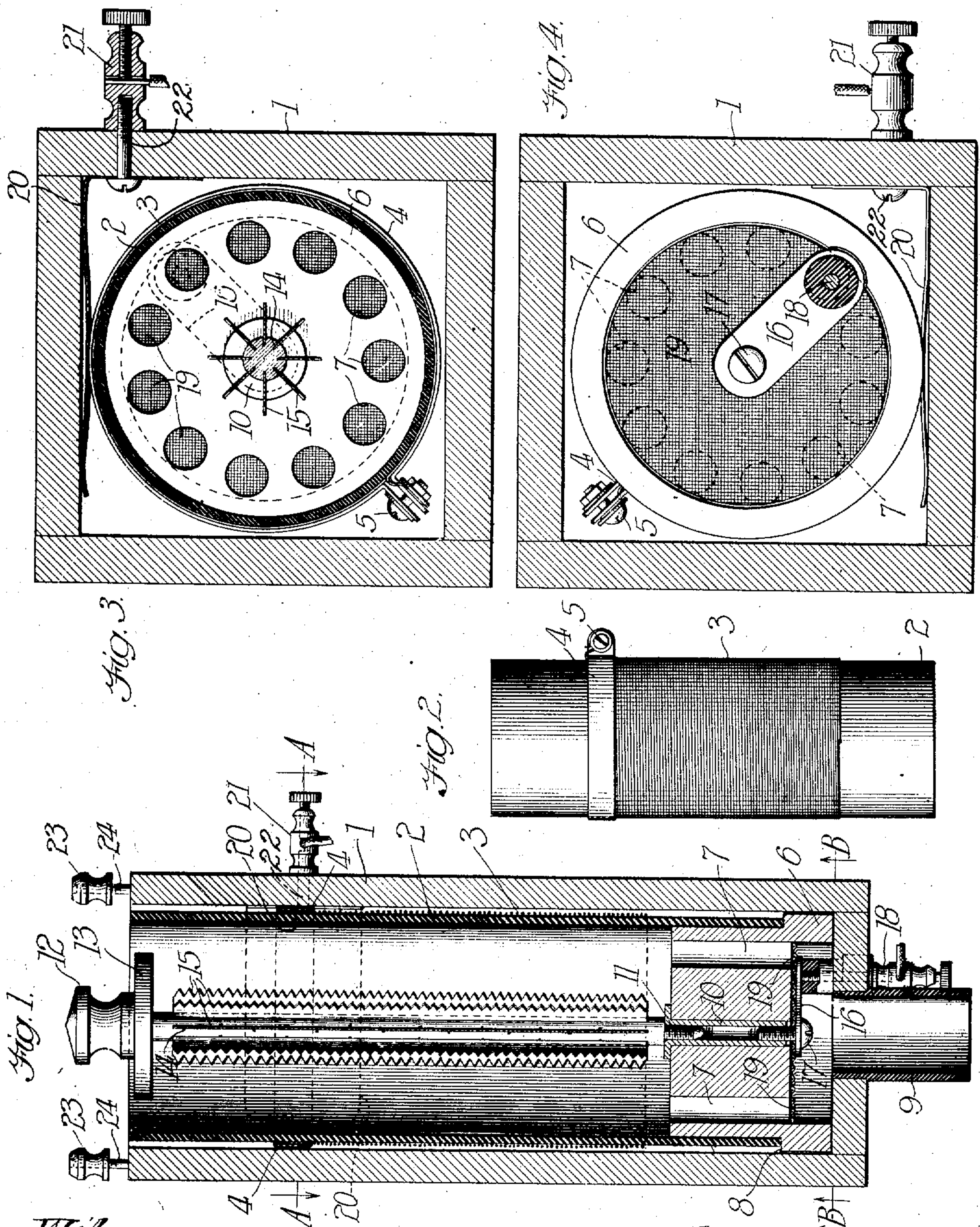


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OZONATOR.
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UNITED STATES PATENT OFFICE.

LOUIS GOLDBERG, OF INDIANAPOLIS, INDIANA.

OZONATOR.

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To all whom it may concern:

Be it known that I, LOUIS GOLDBERG, a citizen of the United States of America, and a resident of Indianapolis, county of Marion, State of Indiana, have invented certain new and useful Improvements in Ozonators, of which the following is a specification.

The main objects of this invention are to provide an improved form of ozonator; to provide a simple and efficient construction of central terminal; to provide an improved and inexpensive form of conductor terminal with positive contacting mechanism disposed upon a substantial dielectric; and to provide an improved form of construction in which the working parts are readily removable from the casing, giving access to the air passages.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:—

Figure 1 is a longitudinal section of an ozonator assembled, the central terminal being in elevation. Fig. 2 is the dielectric tube with the conductor and terminal contact spring in place. Fig. 3 is a sectional view on the line A—A of Fig. 1. Fig. 4 is a sectional view on the line B—B of Fig. 1.

In the form shown, a casing 1 forms a housing for the working of the mechanism and a confined space through which air is passed in the process of producing ozone. Loosely fitting the internal wall of the casing is a tube 2 of dielectric material. Wound on the central portion of the external surface of the dielectric tube is an insulated conductor 3. A metallic band 4 encircles the tube and has its ends bent outward to provide lugs which are connected by a screw and serve as a combined clamp and terminal post 5 to which is secured the adjacent end of the conductor 3. One end of the casing 1 is provided with a spacing block 6 which is provided with air distributing passages 7. The spacing block 6 is provided with a shoulder 8, which contacts with one end of the dielectric tube 2. The external surface of the spacing block 6 is turned to fit the internal surface of the dielectric tube 2.

An inlet for air to the apparatus is provided by a tubular projection 9 which is fitted into the center of the lower end of the casing 1. A support for a central or inner electrical terminal is provided by a metallic sleeve 10, which occupies the center of the spacing block 6. Screw-threaded into the

sleeve 10 is an inner terminal rod 11 which is provided at its upper end with a head 12 and a baffle plate 13. A number of longitudinal slots 14 are cut radially in the central rod 11. Fitted into each slot is a flat metal strip which is secured in the slot by prick-punching the rod close to the slot after the strip 15 has been inserted in the slot. The external edge of the strip 15 is provided with serrations forming a large number of discharge points from the inner terminal. Electrical contact with the central terminal is formed by a metal connector 16 which is secured to the metallic sleeve 10 by a machine screw 17. The connector 16 is also secured to a terminal post 18 which projects through the casing 1.

Between the connector 16 and the spacing block 6 is placed a wire screen 19 which completely covers all of the air distributing passages 7. The electrical contact with the conductor 3 is made by way of the metallic strip 4 with a resilient metal strip 20, which is so secured to the inner surface of the casing 1 as to yieldingly bear toward the strip 4. The usual terminal post 21 is located exterior to the casing and is in metallic contact with the spring contact strip 20 through the machine screw 22. Insulated thumb nuts 23 are secured to the upper end of the casing 1 on threaded pins 24. These thumb nuts may be used to secure a collector or cap to the delivery end of the casing.

In operation, the terminal posts 18 and 21 are connected to the secondary of a transformer or to any source of electromotive force of the required potential and frequency. When the terminals are so connected, an effluve or silent discharge will take place between the inner and outer conductors.

When the apparatus is in operation, a current of air is forced into the inlet 9 where it enters a cavity communicating with the air distributing passages 7. The air passages are symmetrically distributed in close proximity to the dielectric tube. As the process progresses, the ozonized air is forced out of the upper end of the casing. In apparatus of this kind, any dust particles present in the air will collect in the passages and adhere to the dielectric, soon tending to retard the action of the apparatus. This makes easy cleaning of the parts an important factor. In order to remove the working parts, the central terminal is grasped by means of the head 12, and turned to unscrew

the central rod 11 from the sleeve 10, whereupon it can be withdrawn through the open top of the casing. The dielectric tube with its conductor and contact member may be slipped off from the block 6 and the block 6 may be disconnected from the casing by merely unscrewing the binding post 18 from the screw shank by which it is connected to the contact member 16.

10 Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined by the following claims.

I claim:—

1. An ozonator, comprising a casing having a contracted inlet opening at one end, a block seated over said opening and having therethrough a series of distributed air passages communicating with said inlet opening, a dielectric tube mounted in said casing and having its interior in communication with said distributed air passages, so as to provide a continuation thereof along said casing, an outer electrode disposed around the outside of said dielectric tube, an inner electrode carried by said block, being located concentrically within said tube and comprising a metallic body shaped to provide a multiplicity of distributed projections uniformly spaced with respect to said outer electrodes, and means for connecting said electrodes to a suitable source of electromotive force.

2. An ozonator comprising a casing having a contracted inlet opening at one end, a block seated over said opening and having therethrough a series of distributed air passages communicating with said inlet opening, a dielectric tube mounted in said casing and having its interior in communication with said distributed air passages, so as to provide a continuation thereof along said

casing, an outer electrode disposed around the outside of said dielectric tube, an inner electrode carried by said block, being located concentrically within said tube and comprising a metallic body shaped to provide a multiplicity of distributed projections uniformly spaced with respect to said outer electrode, and means for connecting said electrodes to a suitable source of electromotive force, and comprising a binding post having a shank extending loosely through said casing and secured to said block and thereby serving to hold said block in position in said casing.

3. An ozonator, comprising a casing having a contracted inlet opening at one end, a block fitting within said casing adjacent to said inlet and having therethrough a plurality of distributed air passages communicating with said inlet, a cylindrical shoulder formed on said block, a tubular dielectric fitting said shoulder and adapted to be supported thereby in said casing, an outer electrode disposed around said dielectric tube, an inner electrode having screw-threaded connection with said block and located concentrically within said tube, said electrodes being formed to provide opposed projections distributed throughout the contiguous areas of said electrodes, the projections on one of said electrodes being uniformly spaced away from those on the other, the end of said casing which is opposite said contracted air inlet being arranged to permit said block, dielectric tube and electrodes to be readily withdrawn therethrough, and means for connecting said electrodes with a suitable source of electromotive force.

Signed at Indianapolis, this 7th day of February 1911.

LOUIS GOLDBERG.

Witnesses:

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