

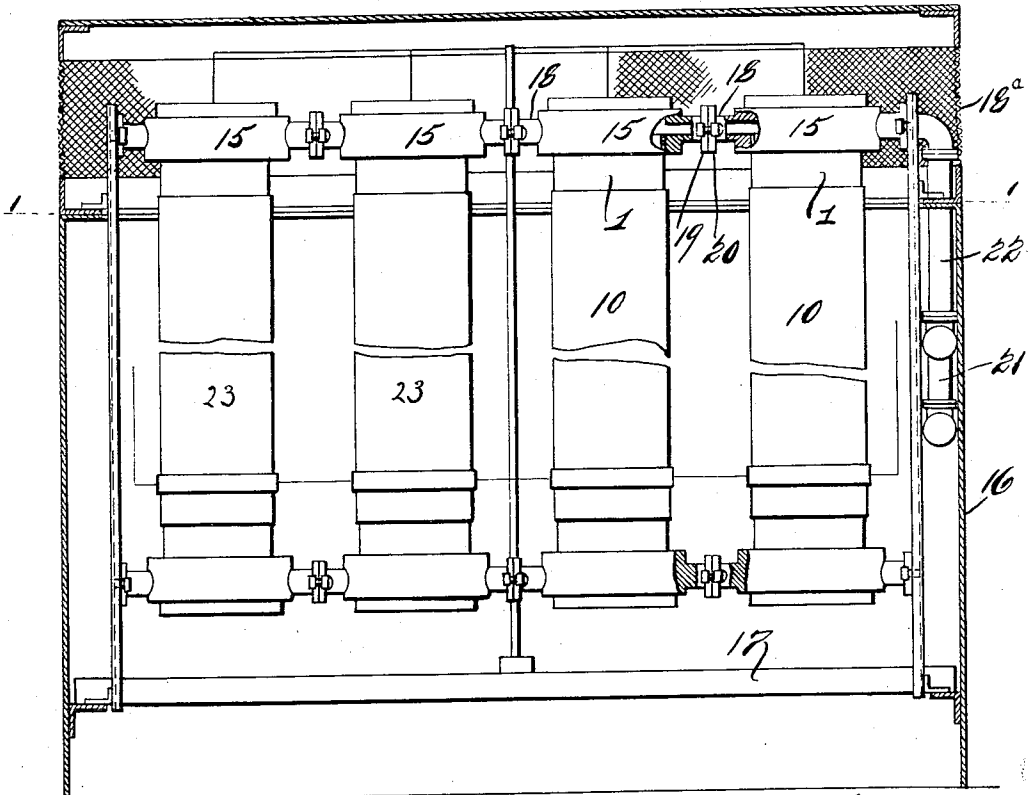
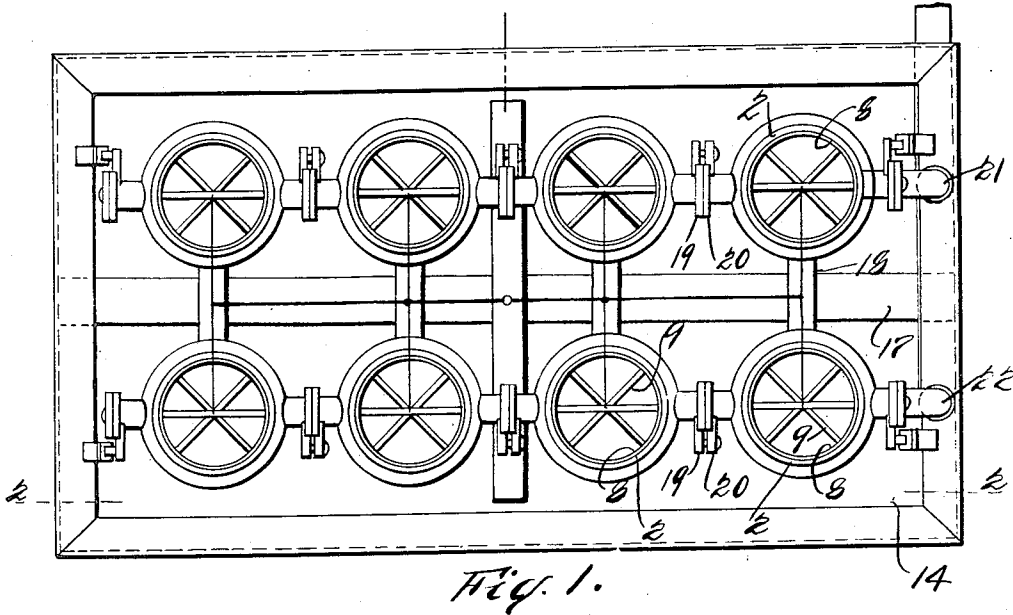
C. F. WALLACE.
OZONIZER.

APPLICATION FILED AUG. 21, 1911.

Patented Apr. 15, 1913.

2 SHEETS—SHEET 1.

1,059,014.



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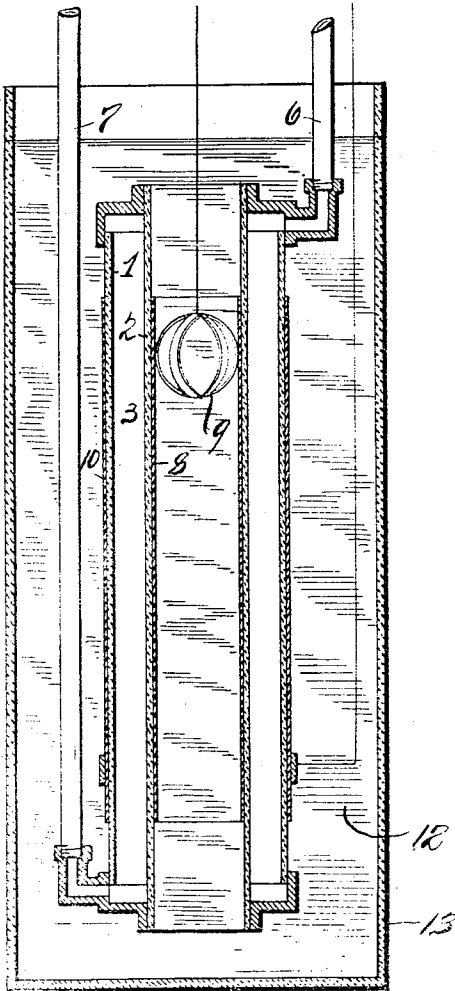


Fig. 4.

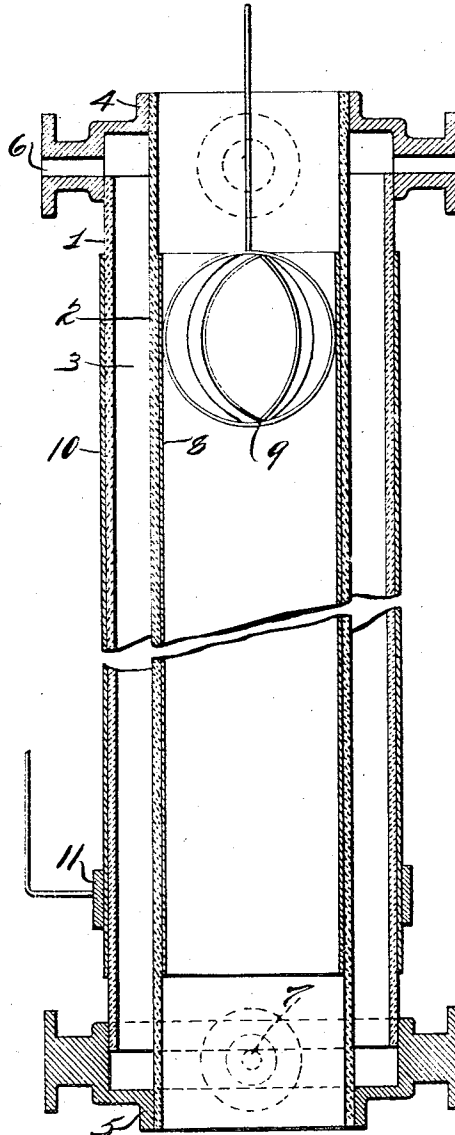


Fig. 5.

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UNITED STATES PATENT OFFICE.

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OZONIZER.

1,059,014.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed August 21, 1911. Serial No. 645,214.

To all whom it may concern:

Be it known that I, CHARLES F. WALLACE, a citizen of the United States, residing at New Brighton, Staten Island, New York, have invented certain new and useful Improvements in Ozonizers, of which the following is a clear, full, and exact description.

This invention relates to ozonizers, and has for its object to secure a construction which will increase the efficiency and life of the same, principally through a more effective cooling of the parts, particularly a cooling of the electrodes, which are usually of foil on a glass chamber.

A further object is to so construct each individual unit that a battery of such units may be built up as desired to serve the particular purpose to be accomplished.

The scope of my invention will be pointed out in the claims.

In the accompanying drawings: Figure 1 is a plan view of my improved device. Fig. 2 is a sectional side elevation on line 2—2, Fig. 1. Fig. 3 is a vertical cross section of one of the units drawn to an enlarged scale. Fig. 4 is a view of one of the units immersed for oil cooling.

As shown in the drawings, each unit consists of a pair of glass tubes 1 and 2, preferably concentric and of such different diameters as to leave a space or chamber 3 between them. The tube 2 is preferably longer than the tube 1, and the tubes are united at top and bottom by headers 4 and 5 to form a closed chamber in which the ozone is formed and from which it is collected. The upper header 4 is provided with an inlet 6 and the lower header 5 with an outlet 7. An electrode 8 of foil is secured to the interior of inner tube 2 and contact made therewith by means of a spider 9 connected with a source of current. An electrode 10 of foil is secured to the outer surface of the outer tube 1, and a collar 11 secured thereto connected to the other terminal of the source of current supply. The entire apparatus is then immersed in oil 12 in a vat 13, as shown in Fig. 4, for cooling during operation, or placed in a chamber 14 for air cooling. In either instance the cooling fluid air or oil traverses intimately the surface of the electrodes, the headers and the connections, not only on the outside of the units but on the inside of the interior tube as well. The current is supplied in the ordinary way, and the air is

passed through the closed chamber to become charged with ozone in the usual way.

As shown in Figs. 1 and 2, each individual ozonizer 23 is so supplied with headers 15 that any number of ozonizer tubes may be coupled together in a battery, as may be desired for the work in hand. In Figs. 1 and 2, a box 16 is supplied, having supporting rods 17, and provided with a perforated screen opening 18^a in its upper part, while it is open at its lower part for connection with air supplying means, so that air will be caused to pass through the box, through the center of the ozonizer tubes, and around the outside of the same, for cooling effect. The headers 15 are preferably cast in pairs, joined by a cast rod 18, and provided with coupling ends 19 and 20 at right angles to the rod 18. The tubes are connected in the headers with their foil and electrodes in a manner similar to that shown in Figs. 3 and 4, but in the upper headers I drill the coupling ends 19 and 20 so that passage will be free throughout one line of headers, the air passing from the top of each header as indicated in Fig. 3 to the bottom thereof. The coupling ends at the bottom are not drilled through for the passage of air, but the connecting rods 18 at the bottom are drilled through to permit the passage of air from the bottom of the lower header of each individual twin header device, so that communication will be established. The second row of headers will thus receive their air at the bottom, which will rise to the top, and as the units 19 and 20 are drilled on the second line in similar manner to that on the first line, the air charged with ozone may be taken out at the outlet pipe 21. The inlet pipe 22 connects with the upper header of the lower line of units.

In carrying out this invention, details of construction may be varied from those shown, and yet the essence of the invention be retained; some parts might be employed without others, and new features thereof might be combined with elements old in the art in diverse ways, although the herein described type is regarded as embodying substantial improvements over such modifications.

As many changes could be made in the above construction, and many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all mat-

ter contained in the above description or shown in the accompanying drawings shall be interpreted in an illustrative and not in a limiting sense.

- 5 It is furthermore desired to be understood that the language used in the following claims is intended to cover all the generic and specific features of the invention herein described, and all statements of the scope
10 of the invention which as a matter of language might be said to fall therebetween.

I claim as my invention:

1. An ozonizer comprising two concentric glass tubes spaced apart, headers for the
15 tubes at each end, the headers being open to form a free passage through the center of the tubes, an inlet and outlet opening for the headers, an electrode on the outside of the outer tube and an electrode on the
20 inside of the inner tube.

2. A cooling chamber for an ozonizer in combination with an ozonizer therein having an opening center and a closed chamber

surrounding said open center, having glass walls, electrodes for said chamber and an inlet and outlet thereto.

3. An ozonizer comprising a plurality of units, each unit comprising two concentric glass tubes spaced apart, headers of said tubes at each end thereof, said heads being
30 provided with openings in communication with the space between said concentric glass tubes, couplings carried by said headers adjacent said opening, whereby said units can be secured together, an electrode on the outer
35 surface of each outer tube of said units and an electrode on the inner surface of each inner tube of said units.

Signed, at New York city, New York, this 16th day of August, in the year one thousand nine hundred and eleven.

CHARLES F. WALLACE.

Witnesses:

F. WARREN WRIGHT,
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