

Feb. 16, 1932.

P. F. J. LEBRUN

1,845,670

OZONIZER

Filed May 18, 1929

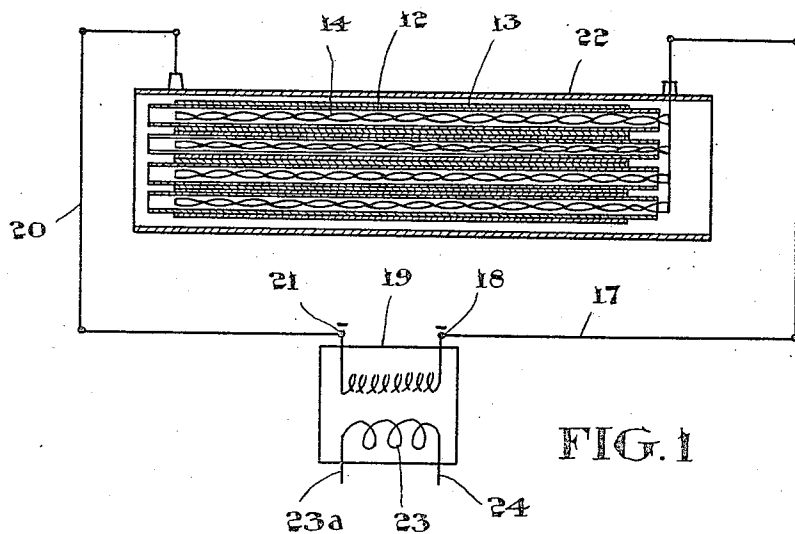


FIG. 1

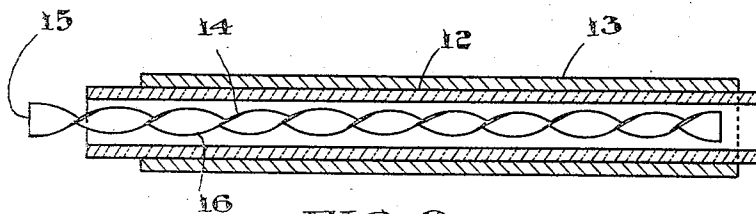


FIG. 3

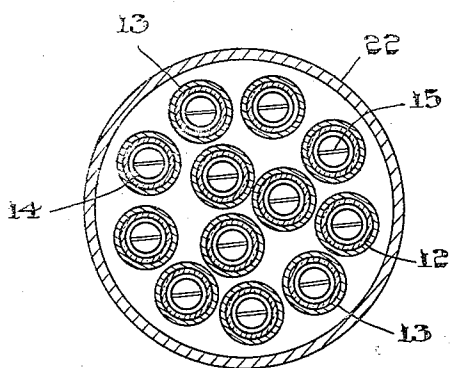


FIG. 2

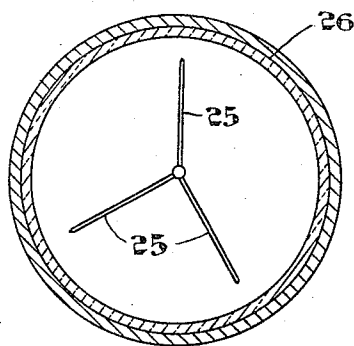


FIG. 4

INVENTOR

PAUL F. J. LEBRUN

BY *J. C. Thurston & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE

PAUL FRANÇOIS JOSEPH LEBRUN, OF MONTREAL, QUEBEC, CANADA

OZONIZER

Application filed May 18, 1929. Serial No. 364,217.

This invention relates to new and useful improvements in ozonizers and the object of the invention is to provide an improved apparatus for generating ozone from air.

Another object is to provide an ozonizer which will generate ozone very quickly and dispense same through a room.

A further object is to provide an efficient ozonizer which will be inexpensive to manufacture and easy to install and repair.

According to my invention, I provide an ozonizing unit which comprises a plurality of elements each element comprising a dielectric tube surrounded by an electrode and having a central electrode adapted to pass through the tube and maintain a constant flow of current in a spiral line between the electrodes through the dielectric so that air in its passage through the dielectric tube is subjected to the action of the current to develop ozone. The space between the discharge edges of the central electrode and the inner wall of the dielectric remains a constant throughout the entire length of the dielectric tube.

In the drawings which illustrate my invention,

Figure 1 is a sectional elevation of an ozonizer constructed according to my invention with the electrical connections shown diagrammatically.

Figure 2 is a sectional end view of the device shown in Figure 1.

Figure 3 is a sectional side elevation showing a more detailed view of one of my ozonizing elements.

Figure 4 is an enlarged sectional end of a modified type of element.

Referring more particularly to the drawings, each element consists of a dielectric tubular member 12 surrounded by an electrode 13 which may be a metallic tube. In the preferred form shown in Figures 1 and 2, a central electrode 14 passes through the centre of the tubular dielectric. This member or electrode 14 is preferably made from a flat electrical conductor 15 twisted to form a spiral. The edges 16 of the conductor are spaced equidistant from the adjacent wall of the dielectric. These edges are preferably sharp

so that current fed into the electrode will discharge easily and evenly from the said edges. In the assembly, a plurality of elements are shown grouped together. It will be seen that the electrodes extend through the dielectric at one end and are connected in parallel by the wire 17 which is connected to a terminal 18 of a transformer 19. The outer electrodes are also connected in parallel by the wire 20 which is connected to the other terminal 21 of the transformer 19. The whole of the electrodes are mounted within a tube 22. The other coil 23 of the transformer 19 is connected to a source of electrical supply by means of the wires 23a and 24. In this construction, it will be seen that while the current is supplied to the device the spirally formed electrode discharges current from its knife edges towards the outer electrode or at right angles to the axis of the elements. The discharge current which is of the high tension type supplied by a transformer or induction coil transforms the oxygen of the air passing through the tube into ozone and induces same to flow rapidly therethrough on account of the higher density of ozone. The circulation of air charged with ozone is particularly rapid when the tube or tubes are placed in vertical position. The rapidly flowing air is brought into contact with the current flow and forms ozone. The flow of current at right angles to the central axis and from the edge of the spirally formed electrode ensures that all the air passing through the elements is brought into contact with the electric current passing between the electrodes. The flow of air is very rapid and the amount of ozone generated is considerably more per cubic foot of flow than with any of the ozonizers at present in use.

In the modification in Fig. 4, the central electrode consists of three radiating arms 25, the edges of which extend towards the dielectric tube 26, which is concentric with the radius of the arms. The current flows from the edges of the arms between the electrodes, generating ozone. The ozonized air flows rapidly through the dielectric and mixes with the air in the room.

The device is simple in construction, inex-

pensive to manufacture and the parts are easy to replace or repair.

Having thus described my invention, what I claim is:

5 An ozonizer including a dielectric tube having an air passage therethrough, an electrode surrounding said tube and a central longitudinally extending electrode passing through the tube, said central electrode comprising a
10 spirally twisted flat conductor presenting edges disposed in spaced parallel relation to the adjacent wall of the tube and bevelled to increase the effectiveness of the electrical discharge therefrom.

15 In witness whereof I have hereunto set my hand.

PAUL FRANÇOIS JOSEPH LÉBRUN.

20

25

30

35

40

45

50

55

60

65