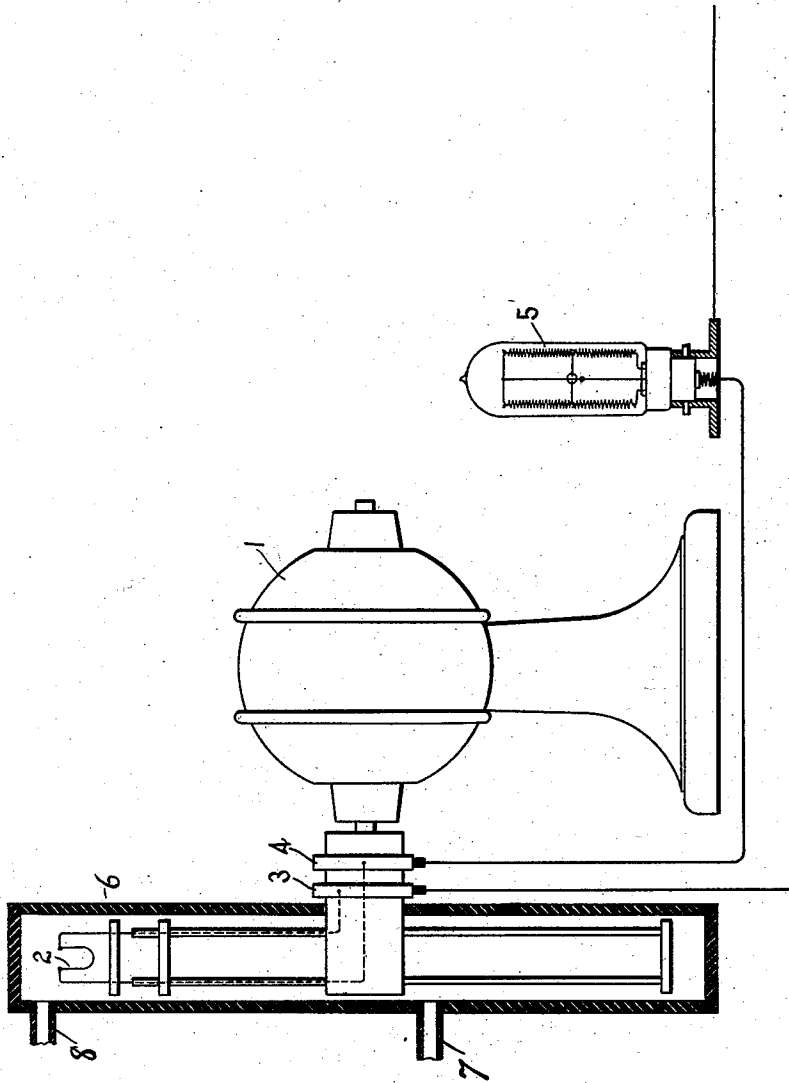


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APPARATUS FOR PRODUCING OZONE.
APPLICATION FILED JULY 20, 1907.

982,227.

Patented Jan. 17, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

LUDWIG GLASER, OF PANKOW, GERMANY, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

APPARATUS FOR PRODUCING OZONE.

982,227.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed July 20, 1907. Serial No. 384,778.

To all whom it may concern:

Be it known that I, LUDWIG GLASER, a subject of the Grand Duke of Saxe-Coburg-Gotha, residing at Pankow, Germany, have invented certain new and useful Improvements in Apparatus for Producing Ozone, of which the following is a specification.

Incandescent bodies made from conductors of the second class cause an ozonizing of the air when a strong current of air is blown upon the bodies, or when the bodies are quickly moved through the air, and the strength of the ozone formation is dependent upon the temperature of the lighting bodies. By means of these air currents, however, a considerable decrease in conductivity of the incandescent body takes place, and with strong currents of air the cooling may become so great that the conductivity is entirely destroyed, that is, the lighting bodies are blown out. The reason for this lies in the fact that with increased cooling the resistance of the incandescent body rises. With constant impressed potential, the current strength and the energy transformed into heat by the lighting body, and therefore the temperature, will fall more and more until finally the current is so low that it can no longer maintain the incandescent body in a conductive condition.

According to this invention, an incandescent body cooled in the manner above set forth is maintained normally conductive by the use of a resistance connected in series, this resistance having a high positive temperature coefficient and consisting preferably of an iron resistance wire inclosed in an atmosphere of hydrogen. By this means the potential applied to the incandescent body is automatically increased on cooling in such a measure that the current consumption remains about the same. This arrangement requires an increase in the supply of energy, in consequence whereof the temperature does not drop so much and is less dependent upon irregularities in the strength of the air current. The incandescent body is thus prevented from losing its conductivity, and a uniform and certain operation of the ozone device is effected.

An apparatus suitable for producing the above mentioned result is illustrated diagrammatically in the accompanying drawing. This drawing illustrates an electric motor 1 and a lighting body or conductor

of the second class 2, mounted on the shaft of the motor and arranged to rotate or move rapidly through the air. The rotating parts may be inclosed in a casing 6 having suitable inlets and outlets 7 and 8 for the gaseous elements under treatment. The motion of the rotating member within the casing 6 may serve to set up the circulation of air in which case the air may enter the passage 7 and pass out of the passage, such as 8, or, if desired, the air may be caused to flow through the casing, by other means, either in the same or in the opposite direction as desired. Suitable slip rings 3 and 4 are provided for conducting current to the lighting body while in motion. In circuit with this lighting body 2 is a resistance 5 which consists of an iron wire inclosed in a hydrogen atmosphere. When the apparatus is at rest, the lighting body consumes 120 volts while 100 volts are absorbed by the resistance. If on the other hand, the lighting body is set in rotation by the motor, the potential at the terminals of the lighting body rises to 180 volts, while that across the terminals of the resistance falls to 40 volts; but the current strength of the circuit is not substantially altered.

It will be noted that when the air and resistance body are not in relative motion, the resistance absorbs a large portion of the potential, while the incandescent body itself burns with apparently low potential. With increased cooling, the potential at the binding posts of the incandescent body increases, while that at the terminals of the resistance decreases in the same proportion, without thereby essentially altering the current strength,—a method of operation which results from the high temperature coefficient of the iron wire inclosed in an atmosphere of carbureted hydrogen. Finally, it should be noted that iron wire resistances have been connected in series with incandescent bodies made from conductors of the second class and employed as sources of light, the resistance being used in order to make the conductors less sensitive to variations in the potential of the system and to prevent burning through when the potential is too high. In the present instance, on the contrary, such incandescent bodies are concerned as are cooled by strong air currents, and the incandescent body is prevented from becoming currentless by means of the resistance.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. A device for producing ozone comprising a conductor of the second class which is cooled by strong air currents, and a resistance with high positive temperature coefficient connected in series with said conductor to prevent said conductor from losing its conductivity because of the cooling action of said strong air currents.

2. A device for producing ozone comprising a conductor of the second class, means for causing air to pass with high velocity

against said conductor of the second class, and a resistance with high positive temperature coefficient inclosed in an atmosphere of hydrogen and connected in series with said conductor to prevent said conductor from losing its conductivity because of the cooling action of said strong air currents.

In witness whereof, I have hereunto set my hand this third day of July, 1907.

L. GLASER.

Witnesses:

HANS GALLUS,
GUSTAV MATTHIS.