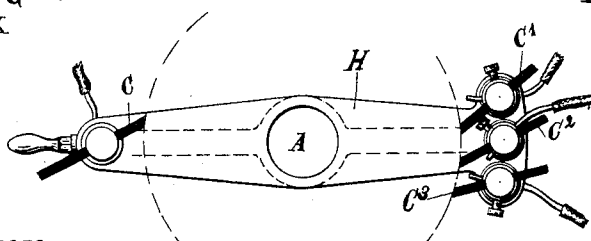
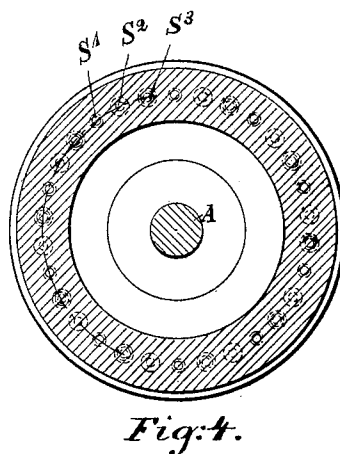
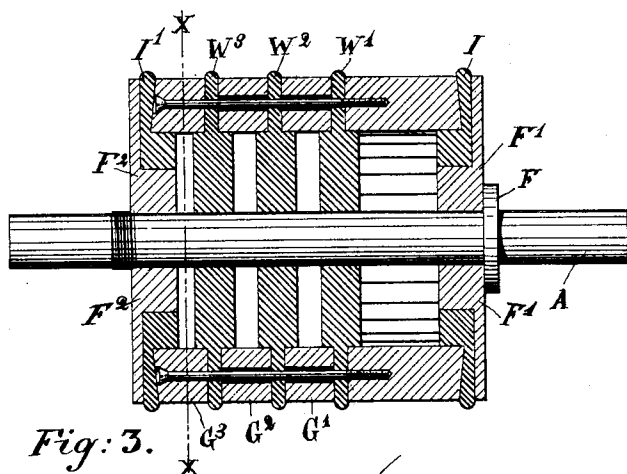
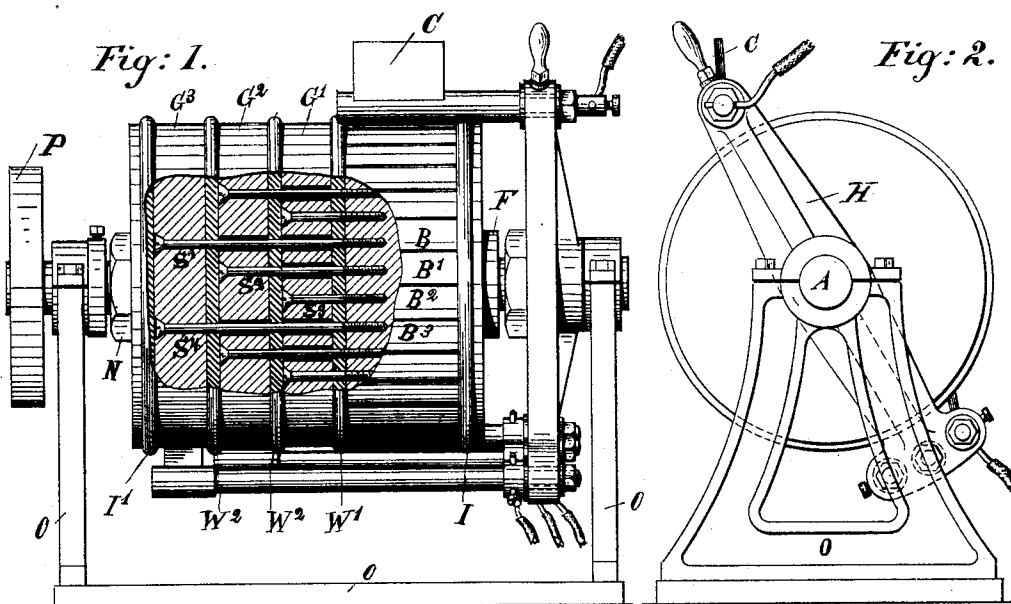


(No Model.)

G. J. ANDERSSON.
ELECTRICAL INTERRUPTER.

No. 537,595.

Patented Apr. 16, 1895.



WITNESSES:

Gust Schlichtberg
Edward von Leistner.

Fig. 5.

INVENTOR

Gustaf Johann Andersson

BY *L. H. Böhm.*

his ATTORNEY.

UNITED STATES PATENT OFFICE.

GUSTAF JOHANN ANDERSSON, OF BROOKLYN, ASSIGNOR TO THE OZONE COMPANY, OF SAME PLACE AND NEW YORK, N. Y.

ELECTRICAL INTERRUPTER.

SPECIFICATION forming part of Letters Patent No. 537,595, dated April 16, 1895.

Application filed February 18, 1895. Serial No. 538,883. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF JOHANN ANDERSSON, a subject of the King of Sweden and Norway, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electrical Interrupters, of which the following is a specification.

My novel electrical interrupter is operated by mechanical power and consists essentially of segments through which the electrical current is introduced and a number of metal rings all on one axis and insulated from each other. The current is conducted into the metal rings by means of screws some of which are not insulated and some of which are partly insulated. From the metal rings the current is taken off into as many circuits as metal rings are provided.

My novel interrupter is entirely sparkless since the current is taken off from continuous metal rings. It is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation partly opened. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is a longitudinal central section. Fig. 4 is a cross section on lines x, x ; and Fig. 5 illustrates the brush holder.

The interrupter is especially designed for use in ozone plants, but can be advantageously used for any other purpose where it is desired to send interrupted current successively into different circuits.

In ozone plants the interrupter is used in connection with induction coils. Heretofore these coils had each one electrical interrupter and the heavy currents of a dynamo necessary in the manufacture of ozone fuse the hammer and the contact pieces of the electrical interrupters of such induction coils. Further the required rapidity of interruption essential for obtaining commercial results cannot be obtained by means of the old well known electrical interrupters.

One of my novel interrupters run by mechanical power replaces in an ozone plant all the electrical interrupters of the induction coils.

My novel mechanical interrupter is mounted on an axis A. On the axis is a flange F, Figs. 1 and 3. Next to it is a circular iron piece

F'. Another like circular iron piece F² is provided on the opposite side Fig. 3. Between these circular iron pieces F' and F² are mounted the segments, the metal rings and the necessary insulating pieces. The whole arrangement is tightened by a nut N mounted on the shaft which is provided with a thread where the circular iron piece F² ends. On the shaft is further mounted at its end a pulley P Fig. 1 so that the whole interrupter can be revolved by mechanical power. On F' and F² are mounted respectively two insulating circular pieces I and I'. There are further mounted on the axis three insulating washers W', W² and W³. The segments B form a commutator through which the current is introduced. They are located between the insulating ring I and the insulating washer W'. The washers W', W² and W³ are thick around the axis and above the same but the outside ends are narrow Fig. 3 so that the thick inner portion acts as a support for the metal rings G. Three metal rings G', G² and G³ are illustrated in Figs. 1 and 3. The rings are perfectly insulated by the washers. Through the rings go the screws S of which some are not insulated and some are partly insulated, so that screw S' Fig. 1 connects electrically the metal ring G³ with the segment B of the commutator. Screw S² connects likewise the metal ring G³ with the segment B' of the commutator. Screw S³ which is not insulated connects the metal ring G' with the segment B². Screw S⁴ connects the metal ring G³ with the segment B³, &c. Thus the current which enters through the brush C Fig. 1 into the commutator is sent successively through the metal rings when the interrupter is revolved and in this way can be taken off into three circuits by means of three brushes C', C², C³, of any known construction which press each against one of the metal rings, Fig. 1. If two, four or more circuits are required then the number of the rings G is the same as the number of circuits, the screws S must be arranged and insulated accordingly and the number of segments must allow division by the number of circuits that are desired. The current of an ozone plant is preferably generated by a continuous current dynamo and this novel interrupter thus

allows an ozone plant to work with any number of ozone generators by means of one source of electricity. It is plainly understood that sparks can hardly occur on the brushes
 5 when it is considered that the current is conveyed to the brushes from solid continuous metal rings. I have found in the course of manufacturing ozone that by means of this novel interrupter a larger percentage of oxygen is ozonized than without it, because the
 10 interrupter can be run at a high speed without giving sparks.

When the interrupter is revolved then the current entering through the brush C goes,
 15 say through the segment B, through screw S' into ring G³; then the brush comes in contact with the segment B' and the current goes through the screw S² into ring G², leaving rings G' and G³ without current; then the
 20 brush comes in contact with B², the current goes through the screw S³ into G', leaving G² and G³ without current; then the brush meets segment B³, the current goes through screw S⁴ into ring G³ again, &c., being in this way
 25 interrupted by mechanical motion.

The whole interrupter is mounted on a substantial support O, Figs. 1 and 2.

The brush holder H consists of one continuous piece of metal Figs. 2 and 5. The top portion carries the brush C through which the
 30 current enters the commutator and in the lower end Fig. 5 are fastened metal rods which carry the three brushes which press against the metal rings. The rods carrying the
 35 brushes are insulated from the holder.

Thus a sparkless electrical interrupter is produced which is run by mechanical power and which is capable of furnishing interrupted currents successively for any number
 40 of circuits from one source of electricity and as described this sparkless interrupter run by mechanical power replaces any desired number of electrical interrupters in induction coils. It has further the advantage of obtaining a rapidity of interruption impossible
 45 with electrical interrupters.

Having thus described my invention, what I claim therein, and desire to secure by Letters Patent, is—

1. An electrical interrupter mounted on a shaft with pulley and operated by mechanical power consisting of a number of insulated segments, a number of insulated continuous metal rings, screws which connect electrically the metal rings with the segments in such a
 55 manner that upon revolving the interrupter the current passes successively into one ring after another, a brush on the segments through which the current is introduced and a number of brushes of which each presses against
 60 one metal ring so that the interrupted current is sent successively into various circuits substantially as described and for the purpose set forth.

2. In an electrical interrupter mounted on a shaft with pulley and run by mechanical power the combination of a number of insulated segments with a brush through which the current is introduced, metal rings in such a number as allows division of the number of
 70 segments, metal screws connecting electrically the metal rings with the segments and a number of brushes of which each presses against one metal ring substantially as described.

3. In an electrical interrupter mounted on a shaft with pulley the combination of a number of insulated segments with a brush through which the current is introduced, metal rings in such a number as allows division
 80 of the number of segments insulating washers separating the metal rings and the segments from the adjacent metal ring, metal screws connecting electrically the metal rings with the segments, a number of brushes of
 85 which each presses against one metal ring, a device for introducing current into the segments, and devices for sending the current into various circuits substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GUSTAF JOHANN ANDERSSON.

Witnesses:

GUST. EHRLICHER,

EDWARD VON LEISTNER.