Aug. 31, 1926. 1,597,829

H. J. ROUND

OSCILLATION GENERATOR

Filed June 12, 1922

Fig. 1

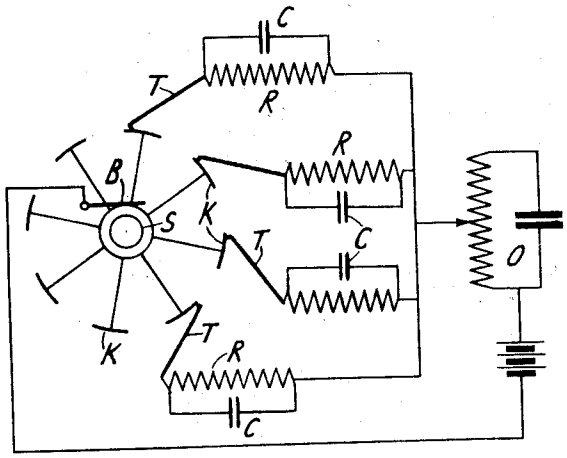
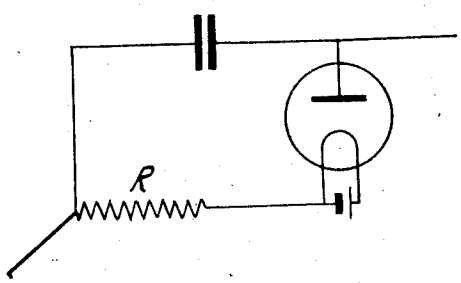


Fig. 2



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OSCILLATION GENERATOR.

Application filed June 12, 1922, Serial No. 567,509, and in Great Britain June 16, 1921.

This invention relates to means for producing alternating currents of the type in which oscillations are produced by means of a rotary commutator having alternate conducting bars and insulators and a brush contact. It is well known that an oscillatory circuit can be maintained in oscillation if the commutator bars are caused to pass beneath the brush contact at a frequency which is either the same as the natural frequency of the circuit or is some sub-multiple thereof. The use of such an apparatus, is however, limited by the sparking and arcing which occur at the brush. Should an attempt be made to overcome this difficulty by simply employing a number of brushes arranged in parallel there is a tendency for the currents to distribute themselves unevenly between the brushes and consequently it is not possible to produce large oscillatory currents by this means.

According to this invention I overcome the difficulties by employing a number of brushes arranged in parallel and connecting in series with each brush a resistance sufficiently large to ensure an even distribution of current between the brushes. I am thus enabled very greatly to increase the power available in the oscillatory circuit. The number of brushes may be increased up to any practicable limit and the current through each one may be kept at such a low value that the wear due to sparking is negligible.

The invention is illustrated by the accompanying drawing, in which Fig. 1 is a diagrammatic representation of an embodiment and Fig. 2 is a detail view.

Referring to the drawings O is an oscillatory circuit connected to a number of resistances R, R, and to one pole of a battery, the other pole of which is connected to a brush B bearing on a slip ring S connected to a number of conducting bars K on which bear brushes T, T each brush being connected to one of the resistances, R. In some cases it is preferable to shunt each resistance by a condenser C. The resistances may include vacuum valves V or similar devices which will tend to prevent back surges of the current as shown in Fig. 2. Preferably each brush T is formed of a single wire of tungsten, molybdenum or other hard and difficultly oxidizable material. The conducting bars K may be of similar material to the brushes and the insulators between them may be of glass, porcelain or other strong non-burning material, or the bars may have air gaps between them.

The apparatus may be constructed to generate currents of a sinusoidal form or of square form such as is referred to in my application Serial No. 370,174, now Patent No. 1,564,627 dated Dec. 8, 1925. Such apparatus usually produces strong harmonics and therefore if it is used for transmitting in wireless signalling it is advisable to employ either harmonic filters or a loose coupling to prevent these harmonics from being radiated.

Having described my invention what I claim is:

1. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, and means for periodically connecting and disconnecting said circuit and said source, comprising a rotary commutator having a plurality of segments, a plurality of brushes connected in parallel and spaced to simultaneously contact with different segments of said commutator, and a number of resistances, one being in series with each brush.

2. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, means for periodically connecting and disconnecting said circuit and said source comprising a commutator having a plurality of segments and a plurality of brushes in parallel, spaced to simultaneously contact with different segments of said commutator, and means for equalizing the currents in said brushes.

3. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, and means for periodically connecting and disconnecting said circuit and said source, comprising a rotary commutator having a plurality of segments, a plurality of brushes connected in parallel and spaced to simultaneously contact with different segments of said commutator and

a separate resistance in series with each brush.

4. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, and means for periodically connecting and disconnecting said circuit and said source, comprising a rotary commutator having a plurality of segments, a plurality of brushes connected in parallel and bearing on different segments of said commutator, a separate resistance in series with each brush, and condensers in parallel with said resistances.

5. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, and means for periodically connecting and disconnecting said circuit and said source, said means comprising a rotary commutator, a plurality of brushes bearing on said commutator and a rectifier in series with each brush.

6. In means for producing alternating currents of a frequency suitable for wireless signalling, the combination of an oscillating circuit, a source of electromotive force for exciting said circuit, and means for periodically connecting and disconnecting said circuit and said source, comprising a rotary commutator, a plurality of brushes bearing on said commutator and a separate resistance including a rectifier in series with each brush.

7. In a rotary commutator generator of alternating currents of a frequency suitable for wireless signalling, a plurality of brushes bearing on the commutator a separate resistance in series with each of said brushes, means to join the resistances in parallel and an electron valve rectifier in series with each resistance.

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