

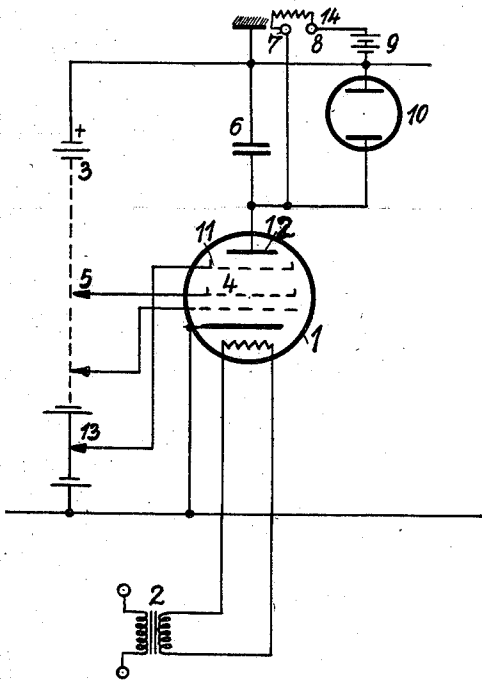
Sept. 8, 1936.

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2,053,536

TILTING APPARATUS

Filed July 11, 1933



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UNITED STATES PATENT OFFICE

2,053,536

TILTING APPARATUS

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Application July 11, 1933, Serial No. 679,866
In Germany July 15, 1932

3 Claims. (Cl. 250—36)

I have already shown previously that it is possible by the use of a screening grid tube to dispense with the charging tube with saturated emission and tungsten cathode otherwise unavoidable in connection with relaxation oscillation generator with time-linear condenser charge, and to perform complete house-circuit operation with the use of normal indirectly heated cathodes. The principle of this method resides in the fact that in the case of screening grid tubes, due to their particularly small anode reciprocal, the current flowing to the anode, i. e., in this case the charging current for the charging condenser, is to a considerable extent independent of the particular anode potential.

The figure serves to explain the present invention, which relates to a relaxation oscillation generator with exactly time-linear potential curve. The screening grid tube 1 may be heated by the A. C. supply through the medium of a transformer 2, and 3 is a D. C. potential source which may also be replaced by a public supply connection device with sufficient steadying. At the screening grid 4 there is adjusted a suitable and possibly variable potential with the assistance of the tapping 5. The condenser to be charged is designated 6. The withdrawal of the relaxation potential takes place at the terminals 7, 8 with the assistance of a counter-potential 9, which may naturally also be taken from the common potential source 3. As discharge element there is shown a gaseous conduction lamp 10, in place of which, however, there may be used with advantage a glow tube with hot cathode and control grid, more particularly as already set forth by me in my application No. 668,940, filed May 2nd, 1933.

By economy or efficiency of a relaxation oscillation generator of this nature there is understood the relaxation potential amplitude obtained between the terminals 7, 8 in relation to the direct potential 3 employed. This efficiency may be very considerable and readily exceed 90%, particularly in the case of grid glow tubes with hot cathode. A limit, however, is encountered by the fact that the anode potential of the screening grid charging tube 1, prior to commencement of the ignition, may become smaller than the potential of the screening grid 4. This case occurs very readily by varying the anode screen grid potential, which is in any case made to be adjustable by means of the tapping point 5 for the purpose of regulating the relaxation frequency. Shortly prior to the point of ignition the required constancy of the anode current then ceases; secondary electrons pass out of the anode and proceed to the screening grid, the charging current sinks, and the time-linear relaxation curve is flattened (ignition time delay).

To avoid this drawback a special and preferably

large-meshed intercepting grid is provided in accordance with the invention between the protective network 4 and the anode 12 of the charging tube 1, the potential of which grid may be suitably adjusted at 13, viz., within range of the cathode potential, in order to prevent the secondary emission even in the case of low anode potentials.

I claim:

1. A generator for producing relaxation oscillations of exactly straight line wave form comprising a direct current source, a charging condenser, a charging valve having a cathode, a first grid, a plate and a second grid acting as a screening grid, said condenser and said valve being connected in series across said source, a discharge device connected to the terminals of said condenser, said first grid being connected to potential between the positive and the negative terminal of said source, said screen grid being connected to a potential taken at said source lying somewhat below the maximum potential of said source, and means for preventing distortion of said generator relaxation potential, said distortion being caused by secondary emission of electrons from said anode of said valve.

2. A generator for producing relaxation oscillations of exactly straight line wave form comprising a direct current source, a charging condenser, a charging valve having a cathode, a first grid, a plate, a second grid acting as a screening grid and an intercepting grid, said condenser and said valve being connected in series across said source, a discharge device connected to the terminals of said condenser, said first grid being connected to potential between the positive and the negative terminal of said source, said screen grid being connected to a potential taken at said source lying somewhat below the maximum potential of said source, said intercepting grid being connected to a potential between said cathode potential and said potential of said first grid.

3. A generator for producing relaxation oscillations of exactly straight line wave form comprising a direct current source, a charging condenser, a charging valve having a cathode, a first grid, a plate, a second grid acting as a screening grid and a large-meshed intercepting grid, said condenser and said valve being connected in series across said source, a discharge device connected to the terminals of said condenser, said first grid being connected to the potential between the positive and the negative terminal of said source, said screen grid being connected to a potential taken at said source lying somewhat below the maximum potential of said source, said intercepting grid being connected to a potential between said cathode potential and said potential of said first grid.

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