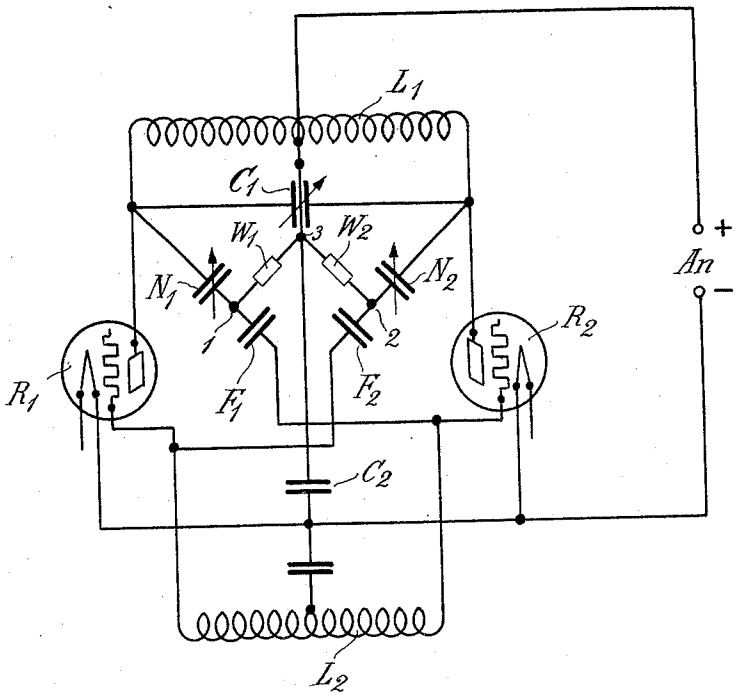
May 23, 1933. H. ROCHOW 1,910,814

NEUTRALIZED TUBE TRANSMITTING APPARATUS

Filed April 3, 1931



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Patented May 23, 1933 1,910,814

UNITED STATES PATENT OFFICE

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NEUTRALIZED TUBE TRANSMITTING APPARATUS

Application filed April 3, 1931, Serial No. 527,475, and in Germany April 28, 1930.

Neutralized tube transmitting apparatus often offer difficulties in that the neutralizing condensers fail in the requisite constancy of the capacity. As condensers of this type frequently oil condensers are used, the dielectric of which however appears to change permanently in consequence of the high frequencies, so that their magnitude of capacity will consequently vary. For that reason it was suggested to eliminate the oil condensers and employ air condensers. This latter class of condensers will not offer the described drawback owing to a variation of the dielectric, however in consequence of the high voltages occurring in them they are difficult to be properly and suitably dimensioned, since not only the anode voltage of continuous current but also the alternating current voltage is in eixstence. In order to attain as high a safety against sparking over as possible it is necessary to make use of great distances of the plates. But as through the great distance of the plates the magnitude of the capacity will be reduced, it is necessary for the sake of compensation to increase the superficial area of the plates. Through the increases of the surface of the plates, however, the capacity of space, that is the capacity between the plates and the remaining structure of the transmitting apparatus and earth respectively, will become very great at the same time.

But such increase must be avoided particularly with short waves in the interest of a faultless construction of the whole transmitting apparatus.

In order to avoid the deficiencies referred to according to the invention it is suggested to bridge the variable neutralizing condenser for the continuous current voltage by means of a resistance. In order to be able to carry through such arrangement it is also necessary to divide the neutralizing condenser into a stationary and a variable part and to connect the bridging resistance to the point of junction of the stationary and variable condenser.

A practical arrangement of the device according to the invention is shown by way of example in the diagrammatic drawing.

The idea of the invention may best be explained with reference to the drawing, illustrating diagrammatically by way of example a neutralized counter-time step. Both tubes or valves R_1 and R_2 are connected on the side of the anode with the inductance L_1, while the inductance L_2 is situated in their grid circuit. The anode oscillatory circuit is completed by the condenser C_1 having two stationary and one rotatable set of plates. The rotatable portion of the plates on the one hand is connected to the cathodes of the tubes by way of the condenser C_2 and on the other hand with a central tapping of the inductance L_1.

The neutralization is effected with the aid of both variable neutralizing condensers N_1 and N_2, connected in series with both stationary neutralizing condensers F_1 and F_2. Owing to this successive connection of the condensers N_1 and F_1 and N_2 and F_2 respectively the alternating current voltage will thus be divided in a corresponding manner. At the points 1 and 2 there is connected a resistance W_1 or W_2 respectively, one end of which leads to the point 3. The latter is in connection with the positive pole of the source An for the anode current. Disregarding the continuous current resistance of the inductance L_1 the point 3 shows the same potential of continuous current as the plates of the variable neutralizing condensers N_1 and N_2 at the side of the anode. As in the resistances W_1 and W_2 will flow no continuous current and in consequence no drop of voltage can be caused, the same continuous current voltage must prevail at the points 1 and 2 as at point 3 and the anodes. In this manner the arrangement according to the invention ensures, that the same continuous current voltage is present on both sides of the variable neutralizing condensers, in other words that these condensers are bridged for the continuous current voltage. The alternating current voltage present at such a condenser is at the same time reduced through the condenser F_1 or F_2 respectively likewise connected.

With this arrangement the variable condenser may be of small dimensions and the capacity of space can be rendered slight. The stationary condensers proper possess already a small capacity of space, since mica

may be selected for these, which material possesses a higher dielectric constant and resistance power against puncturing than air.

I claim:

1. Neutralized tube transmitting apparatus of the character described comprising in combination a variable neutralizing condenser and means for bridging the latter in respect of continuous current voltage.

2. Neutralized tube transmitting apparatus of the character described comprising in combination a variable neutralizing condenser, connected in series with a stationary condenser and means for bridging the said variable condenser in respect of continuous current voltage.

3. Neutralized tube transmitting apparatus of the character described comprising in combination a variable neutralizing condenser and a resistance adapted for bridging said variable neutralizing condenser.

4. Neutralized tube transmitting apparatus of the character described comprising in combination a variable neutralizing condenser, connected in series with a stationary condenser and a resistance adapted for bridging the said variable condenser.

In testimony whereof I affix my signature.

HANS ROCHOW.