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GENERATOR OF ELECTRIC RELAXATION OSCILLATIONS

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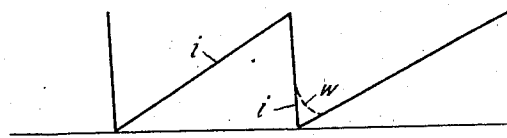


Fig. 1

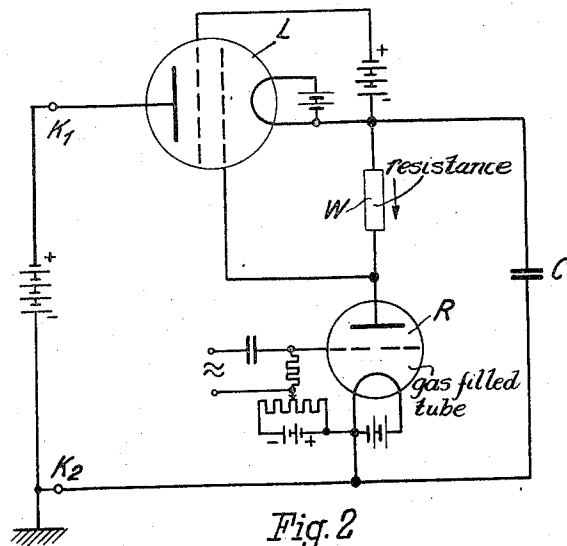


Fig. 2

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GENERATOR OF ELECTRIC RELAXATION
OSCILLATIONS

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3 Claims. (Cl. 250—36)

The invention relates to devices for generating electric relaxation oscillations, that is, oscillations of the kind having a saw-tooth shaped current curve. Devices of this nature are used in television systems and are necessary also in connection with certain measuring equipments.

Such oscillation generators have the disadvantage that their saw-tooth curves are round at their lower angles while they should be acute or pointed there.

In the accompanying drawing:

Fig. 1 shows a saw-tooth curve in its ideal and also in its real appearance. Fig. 2 is a wiring diagram of an embodiment of the invention.

In Fig. 1 the ideal saw-tooth curve is designated *i*. The lower angles of this curve are acute while the curve really obtained is round at these angles as indicated by the dotted curve *w*. As a result the return movements of the beam of electrons are retarded in such a manner that there will be no image reproduction at a certain edge of the picture. In the case of measuring equipments this drawback acts to impair the oscillographic representation.

Careful researches have shown these roundings to be due to the fact that the condenser of the oscillation generator becomes recharged by the current source while still becoming discharged. The invention therefore proposes to block up the charging circuit of the condenser during the discharge thereof. Preferably this is performed with the aid of an electron tube that serves to charge the condenser and is controlled by the discharge current thereof.

The condenser is designated C in Fig. 2. The electron tube R, for instance a "Thyratron", is the tube of the relaxation circuit. The voltage for charging the condenser C is supplied at terminals K1, K2. The mode of taking or deriving the relaxation oscillations is not of interest here. The customary circuit arrangement may serve this purpose. In the feed line to the relaxation circuit, that is, the line connected to K1, a charging tube L is included which by preference is a

high vacuum multiple grid valve. A resistance W and the internal resistance of the tube R constitute the ohmic resistance of the relaxation circuit, the frequency of this circuit being determined by the product of the capacitive resistances by the ohmic ones. The control grid of the tube L is connected to the relaxation circuit at a point between resistance W and tube R.

It is well known to employ charging tubes, such as L, in connection with relaxation devices. It is not known, however, to employ the charging tube for interrupting the flow of current during the discharge of the condenser. When the condenser is discharging a current flows in the direction of the arrow. As a result a drop of potential across resistance W occurs and thus a negative bias is produced that acts on tube L. The conditions are so chosen that the tube L will be blocked by this negative potential as long as a current is flowing through resistance W, that is to say, as long as condenser C is discharging. As soon as such discharging is finished, the negative potential ceases to exist, the current immediately ceasing to flow, and the condenser is now recharged. Saw-tooth curves obtained with the aid of an arrangement of this special construction present the ideal appearance of the curve *i* in Fig. 1.

What is claimed is:

1. In a generator of electric relaxation oscillations, a condenser, a circuit for charging this condenser, a circuit for discharging it, and means to block up such charging circuit during the discharge of said condenser.

2. In a generator of electric relaxation oscillations, a condenser, a circuit for charging this condenser, a circuit for discharging it, an electronic charging tube included in such charging circuit, and means to control this tube by the discharge current of said condenser.

3. An arrangement according to claim 2, wherein the said charging tube is a multiple grid valve.

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