

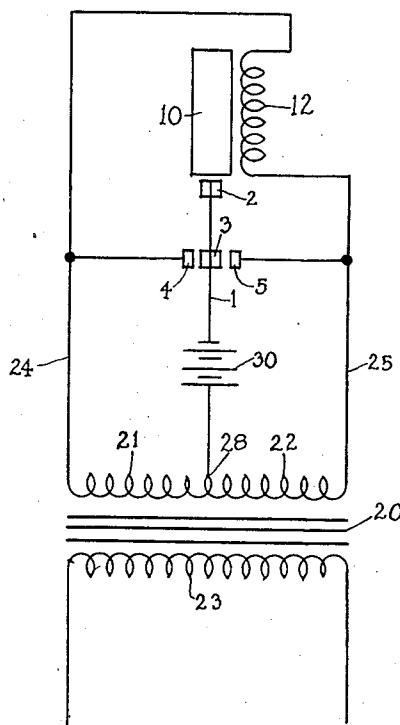
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VIBRATOR

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VIBRATOR

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2 Claims. (Cl. 175—365)

This invention relates to vibrators and particularly to vibrators for use in connection with automobile radios. Vibrators are used in this case to interrupt the direct current from the automobile storage battery so that a transformer action may be obtained to step up these currents to be finally rectified and filtered.

Vibrators of this type must be cheap and positive in operation. An object of this invention is to devise a vibrator which will satisfy the above conditions.

The single figure in the drawing is a diagrammatic representation of the invention.

Referring to the drawing the vibrator which may have the detailed mechanical structure shown in my application Serial No. 758,924, filed December 24, 1934, is provided with a vibratable reed 1 carrying an armature 2 at its free end, the other end being rigidly held by suitable means. Reed 2 carries a movable contact 3 and is adapted to vibrate between fixed contacts 4 and 5 and in the normal operation of the device to alternately make contacts therewith.

In order to energize the reed, a magnetic structure 10 having a pole piece in proximity to armature 2 is provided. To energize magnetic structure 10 a field winding 12 is provided. The free ends of winding 12 are connected respectively to fixed contacts 4 and 5.

30 A transformer 20 having a primary divided into two parts 21 and 22 both co-operating with a secondary 23 is provided. The outer ends of primary windings 21 and 22 are connected by wires 24 and 25 to fixed contacts 4 and 5 respectively. The 35 mid-point 28 of the primary is connected to a battery 30, the other terminal of which is connected to reed 1.

Reed 1 may be given an initial impulse in any suitable manner or may be constructed as disclosed in my application Serial No. 730,938, filed June 16, 1934 with a weak spring section so that the reed tends to fall against one of the two fixed contacts.

Assuming that reed 1 has been given an initial impulse so that one contact is made, it is evident that winding 12 will be energized tending to draw armature 2 from its extreme position. In this way a push-pull action is obtained with the reed being positively attracted from each extreme position. It will be understood, of course, that the resistance of winding 12 is great in comparison to that of primary windings 21 and 22 since the 10 demagnetizing action of current thru winding 12 in the idle half of the transformer primary should be negligible.

Having disclosed my invention what I claim is as follows:

1. A vibrator including a reed rigidly secured at one end and adapted to have a free end vibrate, a contact carried by said reed, a pair of fixed contacts on opposite sides of said reed cooperating with said movable contact, a magnetizing structure having a pole piece in proximity to the free end of said reed, said pole piece being symmetrically disposed with respect to the reed when said reed is midway between said two contacts, a winding for energizing said magnetic structure, 25 said winding having its terminals connected to said pair of fixed contacts, a battery having one terminal connected to said reed, a work circuit having its midpoint connected to the other terminal of said battery and the outer connections 30 of said work circuit connected to said fixed contacts.

2. The structure of claim 1 wherein said work circuit comprises a transformer having a divided primary with the mid-point of said primary connected to said battery and the outer ends of said primary connected to the fixed contacts and wherein the impedance of each said primary windings is low in comparison to the impedance 40 of said energizing winding.

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