

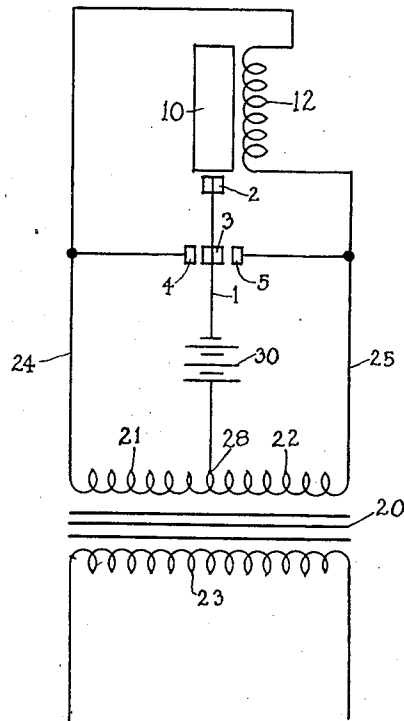
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VIBRATOR

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VIBRATOR

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2 Claims. (Cl. 175—365)

This invention relates to vibrators and partic-
ularly to vibrators for use in connection with au-
tomobile radios. Vibrators are used in this case
to interrupt the direct current from the automo-
bile 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 posi-
tive 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 diagram-
matic 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 struc-
ture 10 having a pole piece in proximity to arma-
ture 2 is provided. To energize magnetic struc-
ture 10 a field winding 12 is provided. The free
ends of winding 12 are connected respectively to
fixed contacts 4 and 5.

A transformer 20 having a primary divided into
two parts 21 and 22 both co-operating with a sec-
ondary 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
mid-point 28 of the primary is connected to a bat-
tery 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 dis-
closed 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 po-
sition. 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
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 con-
tacts on opposite sides of said reed cooperating
with said movable contact, a magnetizing struc-
ture having a pole piece in proximity to the free
end of said reed, said pole piece being symmet-
rically disposed with respect to the reed when
said reed is midway between said two contacts, a
winding for energizing said magnetic structure,
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 ter-
minal of said battery and the outer connections
of said work circuit connected to said fixed con-
tacts.

2. The structure of claim 1 wherein said work
circuit comprises a transformer having a divided
primary with the mid-point of said primary con-
nected 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
of said energizing winding.

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