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MAGNETIC SOUND GENERATORS

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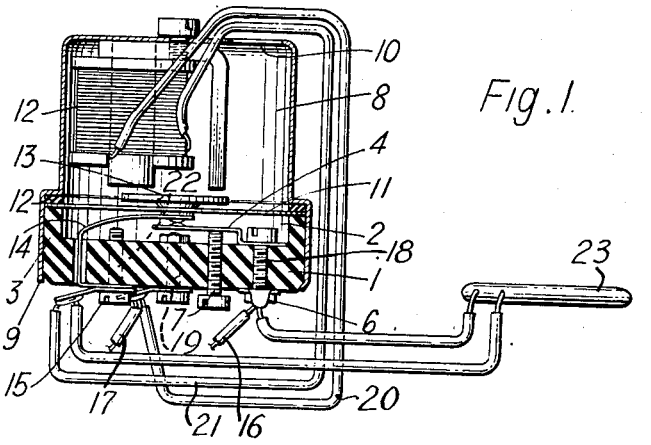

Fig. 1.

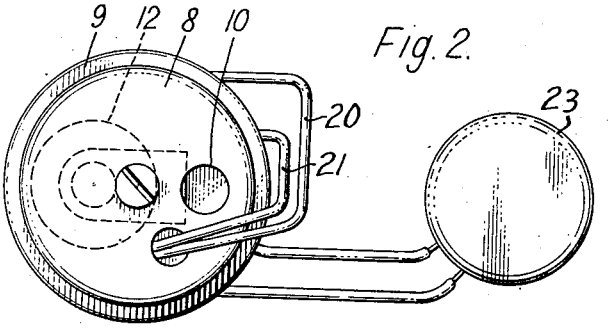

Fig. 2.

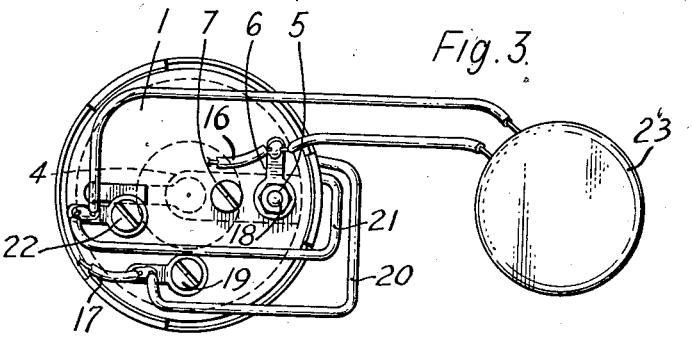

Fig. 3.

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MAGNETIC SOUND GENERATORS

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1 Claim. (Cl. 340—388)

This invention relates to magnetic sound generators and has for its object to provide a sound generator which provides a chord-like note in the lower speech frequency range which is especially suitable for use as a whistle or hooter for a toy electric railway train, but can be used for other purposes.

According to this invention, a magnetic sound generator comprises a diaphragm mounted on a solid base, a hollow sound chamber secured to the base over the diaphragm, a magnetic system located inside the sound chamber, a self-interrupter contact spring fitted opposite the diaphragm in a recess in the base adapted to make contact with the contact rivet at the centre of the diaphragm and a hole or aperture in the sound chamber.

The invention will be clearly understood from the following description aided by the accompanying drawings, in which:—

Figure 1 is a sectional elevation of the sound generator. Figure 2 is a plan view and Figure 3 a bottom plan view of same.

The invention can be carried into effect in various ways as to detailed construction.

In the example shown in the accompanying drawings, the magnetic sound producer comprises a circular solid base 1 of insulating material having a circular recess 2 in one face leaving a circular upstanding flange 3 around the base 1 and in the base 1 is secured a self-interrupter contact spring 4. One end of the spring 4 is secured to the base 1 by a bolt 5 carrying a tag terminal 6 on the outside with the end of the spring 4 carrying a contact in the centre of the recess 2. An adjusting screw 7 is provided on the base 1.

On the base 1 is a hollow metal sound chamber 8 in the form of a tubular body closed at the top and formed with an enlarged diameter portion 9 which engages over the base 1 and can be secured thereto by burring over the edge of the portion 2. A hole 10 is formed in the end

wall of the chamber 8. On the flange 3 of the base 1 is a diaphragm 11, preferably of laminated Bakelite, with an insulated material washer 12 on the upper side, the diaphragm 11 being clamped between the shoulder formed by the enlarged diameter portion 9 and the flange 3 of the base 1.

In the sound chamber 8 and secured to the closed end wall is a straight core electro-magnet 12 with a suitable yoke, and on the diaphragm 11 is secured an iron armature piece 13 by a rivet which also secures a light spring 14 to a contact 15 passing through a base 1. One end of the electro-magnet winding is connected to the diaphragm armature and the other end to the source of supply which is also connected to the tag terminal of the self-interrupter spring 4.

Owing to the small permissible diameter, the diaphragm 11 is made of laminated Bakelite which has sufficient low natural frequency. Harmonics are set up in the diaphragm 11, and the size of the hole 10 or aperture in the sound chamber 8 at the opposite end to the diaphragm determines which of the harmonics should be selected to generate the desired chord.

The leads 16 and 17 are connected to a source of supply and switch, not shown. The lead 16 is connected by means of a screw 18 to the self-interrupter contact spring 4. The lead 17 is connected by means of a screw 19 and conductor 20 to one side of the electromagnet 12, the other side of the electromagnet 12 being connected by a conductor 21 to a screw 22 of the contact 15 through the light spring 14 to the diaphragm 11.

The circuit is traced from the source of supply through the lead 16 to the self-interrupter contact spring 4 and from the source of supply through the lead 17 through the electromagnet 12 to the diaphragm 11.

23 represents a suppressor connected across the leads 16 and 17 to prevent interference with television receivers.

What we claim is:

A magnetic sound generator comprising a base member having a recess therein, a diaphragm having a contact therein and mounted on the base, a hollow sound chamber secured to the base over the diaphragm, a magnetic system located inside the sound chamber, and a self-interrupter contact spring fitted opposite the diaphragm in the recess in the base adapted to make contact with the contact at the center of the diaphragm, said base having an aperture therein through which the spring passes to the contact at the center of the diaphragm.

References Cited in the file of this patent

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