PATENT SPECIFICATION

Inventors: SIEGFRIED KAHN, FRANCIS JOHN PRIOR and WERNER ALTON

767,059

Date of filing Complete Specification: January 21, 1955

Application Date: November 18, 1954 *No. 33474/54*

Complete Specification Published, January 30, 1957

Index at acceptance:—Classes 13, C(1: 3B); and 132(3), S21.

International Classification:—A63h. G08f.

COMPLETE SPECIFICATION

Improvements in or Connected with Magnetic Sound Generators

We, TRIX LIMITED, of 11, Old Burlington Street, London, W.1, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

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 a 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 drawing, in which:—

Figure 1 is a sectional elevation of the sound generator. Figure 2 is a plan and Figure 3 an under 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 9.

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 plastic, with an insulating 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 the diaphragm 11, the other end of the spring 14 being secured to a screw 15 passing through the base 1 to which one end of the electro-magnet winding is connected, the other end being connected to a source of supply which is also connected to the tag terminal of the self-interruptor spring 4.

Owing to the small permissible diameter, the diaphragm 11 is made of laminated plastic which has a sufficiently 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.

What we claim is:—

1. A magnetic sound generator comprising 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 a contact rivet at the centre of the diaphragm, and a hole or aperture in the sound chamber.

2. A magnetic sound generator as claimed in Claim 1, wherein the diaphragm is made of plastic.

3. A sound generator constructed substantially as described with rsference to the accompanying drawing.

H. GARDNER & SON,
Chartered Patent Agents,
65—66, Chancery Lane, London, W.C.2,
Agents for the Applicants.

[*Price*

Improvements in or Connected with Magnetic Sound Generators

PROVISIONAL SPECIFICATION

We, TRIX LIMITED, of 11, Old Burlington Street, London, W.1, a British Company, do hereby declare this invention to be described in the following statement:—

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, the 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 a contact rivet at the centre of the diaphragm and a hole or aperture in the sound chamber.

The invention can be carried into effect in various ways as to detailed construction, and as one example the magnetic sound generator comprises a circular solid base of insulating material having a circular recess in one face leaving a circular upstanding flange around the base and in the base is secured a self-interrupter contact spring. One end of the spring is secured to the base by a bolt carrying a tag terminal on the outside with the end of the spring carrying a contact in the centre of the recess. An adjusting screw and a central contact screw are provided in the base.

On the base is a hollow metal sound chamber in the form of a tubular body closed at the top and formed with an extending flange around the open end, a hole or aperture being formed in the wall of the chamber near the closed end. On the flange of the base is a diaphragm, preferably of laminated plastic, with insulated material washers on each side and secured thereon is the sound chamber by screws passing through the base, washers and diaphragm into the flange of the sound chamber.

In the sound chamber and secured to the closed end wall is a straight core electro-magnet with a suitable yoke and on the diaphragm is secured an iron armature piece by a rivet which also secures a contact plate on the other side of the diaphragm. 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.

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

H. GARDNER & SON,
Chartered Patent Agents,
65—66, Chancery Lane, London, W.C.2,
Agents for the Applicants.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1957.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

767059
1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale

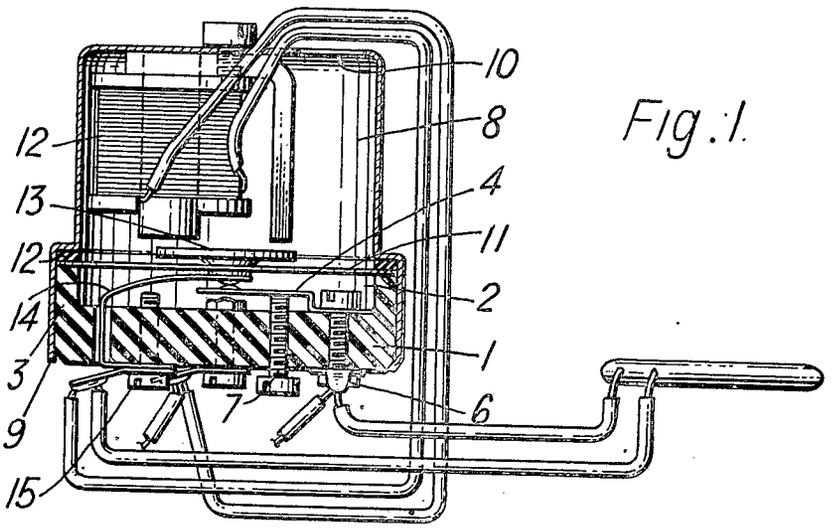

Fig. 1.

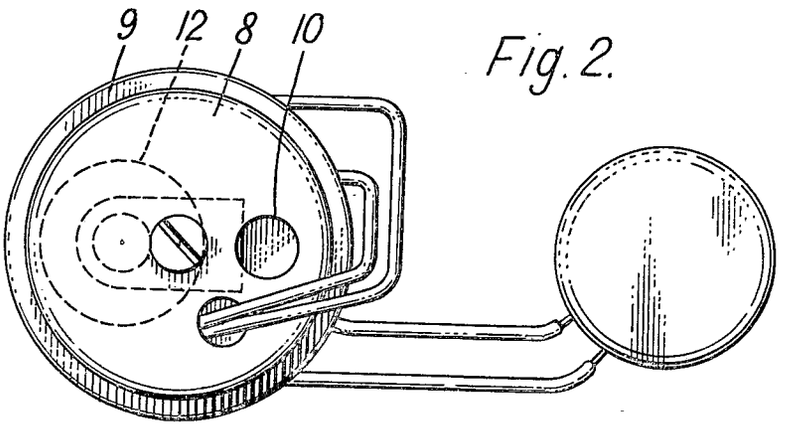

Fig. 2.

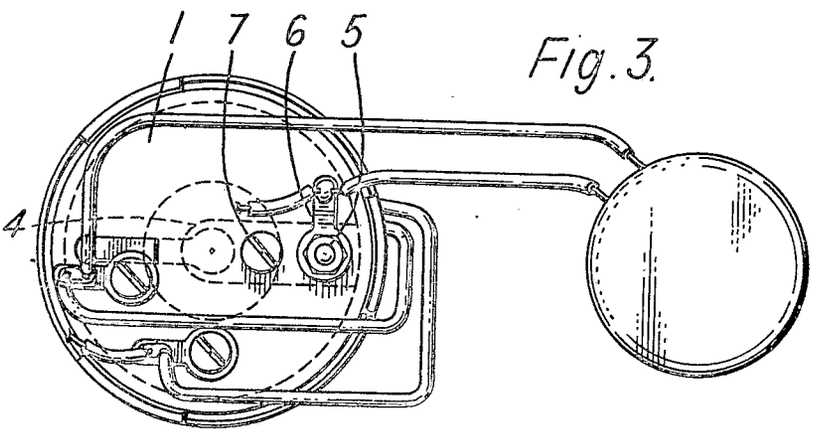

Fig. 3.