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APPARATUS FOR REPRODUCING SOUND

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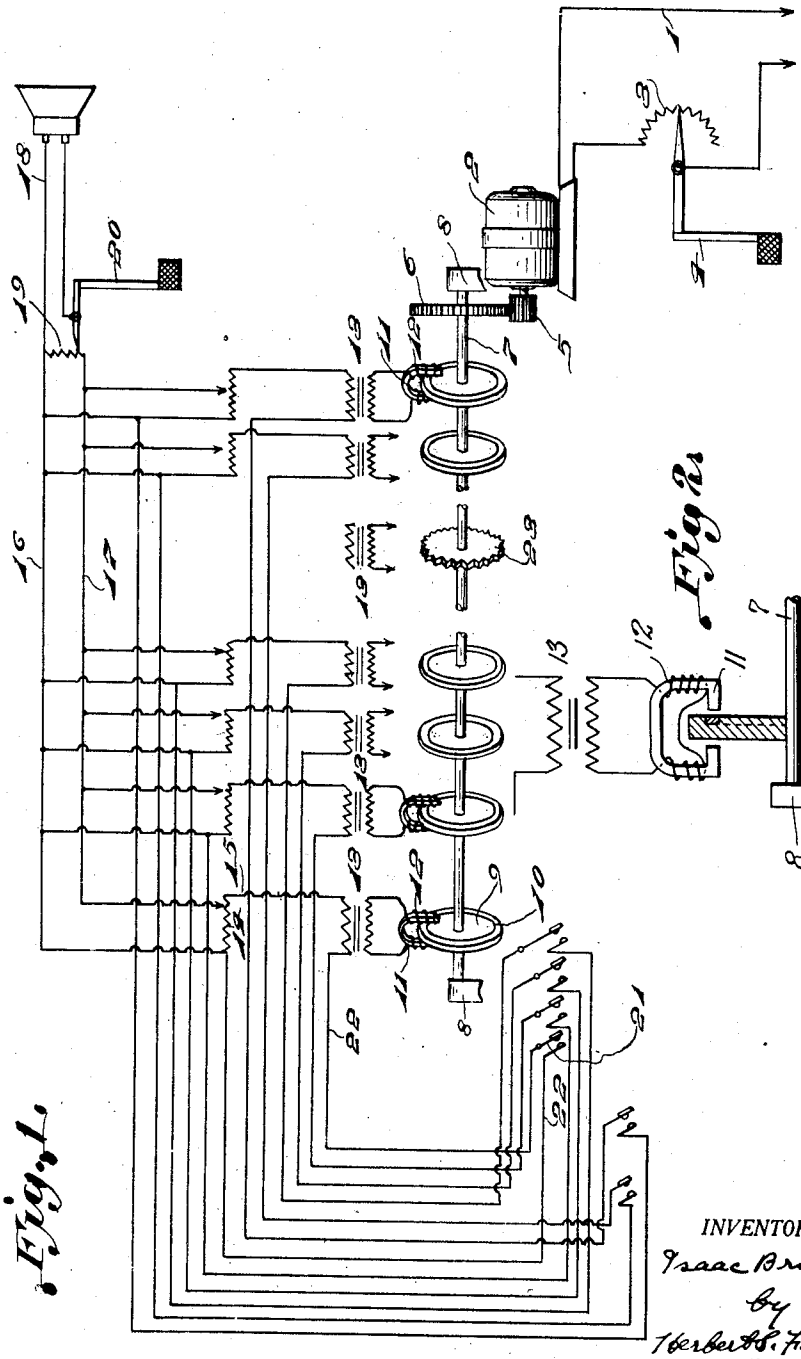


Fig. 1.

Fig. 2.

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APPARATUS FOR REPRODUCING SOUND

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6 Claims. (Cl. 84—1)

The object of this invention is to devise a novel apparatus for reproducing and simulating musical notes and instruments.

With the above in view my invention comprehends a novel apparatus of the character herein set forth wherein the fundamentals and overtones of notes or sound effects are carried by rotatable members, provision being made whereby they can be selectively reproduced at the will of the operator.

It further comprehends a novel apparatus as herein set forth wherein provision is made for selectively changing the pitch and tremolo effects and also the effective volume at the output of the device.

It further comprehends a novel apparatus for reproducing and simulating musical notes and instruments wherein the electric circuit for each rotatable member has a record of the fundamentals and overtones, selectively controlled by the operator.

Other novel features of construction and advantage will hereinafter more clearly appear in the detailed description and the appended claims.

For the purpose of illustrating the invention, I have shown in the accompanying drawing a typical embodiment of it, which, in practice, will give reliable and satisfactory results. It is, however, to be understood that this embodiment is typical only and that the various instrumentalities of which my invention consists can be variously arranged and organized, and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents diagrammatically a machine embodying the invention.

Figure 2 is a front elevation partly broken away to show the wire 10.

Referring to the drawing:—

1 designates the circuit of an electric supply for a constant speed motor 2. This circuit is provided with a variable resistance 3 which is under the control of the operator by means of a member 4 actuated by him, which, for purpose of illustration, is shown as a foot treadle. The shaft of the motor 2 is provided with a gear 5 which meshes with a gear 6 fixed to a shaft 7 suitably journalled in bearings 8 of any desired character. The shaft 7 has fixed thereto the revoluble members 9 which are in the form of discs. Each of these discs except the disc 23, has imbedded in it a wire 10 on which is magnetically recorded fundamentals and overtones of a note or some sound effect. When a disc is revolved its wire or equivalent on which is recorded the note or sound effect, passes between the poles of a magnet 11 causing a varying current in the pickup 12 and in the matching transformer 13 which, as illustrated, is in series with it. Each matching transformer 13 leads to a variable resistance 14 by means of a line 15. The variable resistance is a setting for volume for each note. A variable resistance 14 is connected by the lines 16 and 17 with the plug 18 which is adapted to be connected to the amplifier of a radio set or any other type of amplifier or loud speaker. These lines 16 and 17 are provided with a variable resistance 19 forming a volume control which is adjustable at the will of the operator by means of a member 20 which, as illustracted, is shown as a foot treadle.

The electrical circuit for the reproduction of each note is controlled by a manually actuated switch 21 in a line 22, for example, a hand switch or button or piano key.

In some cases it is advisable to employ a serrated disc 23 on which the note or sound effect is recorded as this provided for comparatively pure tones containing practically no overtones. It will, of course, be understood that this passes between the poles of its respective magnet 11 to vary the current in its pick-up coil 12.

The operation will be apparent to those skilled in the art from the following description.

By means of the controlling member 4 the pitch and tremolo effects can be varied at the will of the operator. Varying the rheostat varies the current which is employed, so that the rise and fall of the current produces a tremolo effect. By means of the switches 21 the operator can reproduce selectively different notes or sound effects and these will be reproduced and pass to the amplifier at the output end of the device. The variable resistance 19 is controllable at the will of the operator to vary the overall volume of the combination of notes and sound effects which is reproduced.

In accordance with this invention any notes and sound effects which have been recorded can be readily reproduced.

My present invention can be very economically manufactured as it embodies a minimum number of elements. Any desired number of discs may be employed and by substituting one set of discs for others having the desired records thereon, any record can be reproduced as will be apparent to those skilled in this art.

It will now be apparent that I have devised a new and useful apparatus for reproducing and simulating musical notes and instruments which

embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which will give in practice satisfactory and reliable results, it is to be understood that this embodiment is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In an apparatus for reproducing and simulating musical notes and instruments, a series of revoluble members each having a wire imbedded therein on which is electromagnetically recorded a fundamental and overtone of a note or sound effect, a reproducing and amplifying circuit for each member including an electro-magnet, a matching transformer, and a variable resistance, means to selectively control said circuits, and means to revolve said members at a desired speed.

2. In an apparatus for reproducing and simulating musical notes and instruments, revoluble members each having a metallic element imbedded therein formed to contain the electromagnetic recording of fundamentals and overtones of a note or sound effect, means to revolve said members at a desired speed, and a reproducing and amplifying circuit electro-magnetically and selectively, at the will of the operator, reproducing the record on said metallic elements.

3. In an apparatus for reproducing and simulating musical notes and instruments, a series of revoluble discs, a constant speed motor to revolve them, wires imbedded in each of said discs on which is magnetically recorded fundamentals and overtones of a note or sound effect, magnets between the poles of which said discs travel, a pick-up for each magnet, a matching transformer in series with each pick-up, an amplifier, lines connecting said amplifier with each transformer and in series with them, an individual switch for each line, and a volume control in the form of a variable resistance connecting said lines.

4. In an apparatus for reproducing and simulating musical notes and instruments, revoluble discs each having a metallic element imbedded therein on which is electromagnetically recorded fundamentals and overtones of a note or sound effect, a constant speed motor to revolve said discs, a manually controlled variable resistance for said motor, magnets between the poles of which said discs travel, a pick-up for each magnet, transformers in series with said magnets, a sound amplifier electrically connected with said transformers by lines, each of which are selectively controllable, and a manually actuated volume control controlling the output from said lines.

5. An apparatus for reproducing musical notes and sound effects and for simulating musical instruments, comprising revoluble members each having a metallic element which contains an electromagnetic record of a fundamental and overtone of a note or sound effect, means to revolve said members at a desired speed, and a reproducing and amplifying electromagnetic circuit selectively controllable at the will of the operator to reproduce aurally the wave form recorded on said metallic element.

6. In an apparatus for reproducing and simulating musical instruments and sound effects, revoluble members each having a metallic element which contains the electromagnetic recording of a fundamental and overtones of a note or sound effect, means to revolve said members at a desired speed, means to select the members desired, and reproducing means to give audible effect to the amplified electromagnetic pulsations from the recording on said metallic elements.

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