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RADIO DOLL

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Fig. 1.

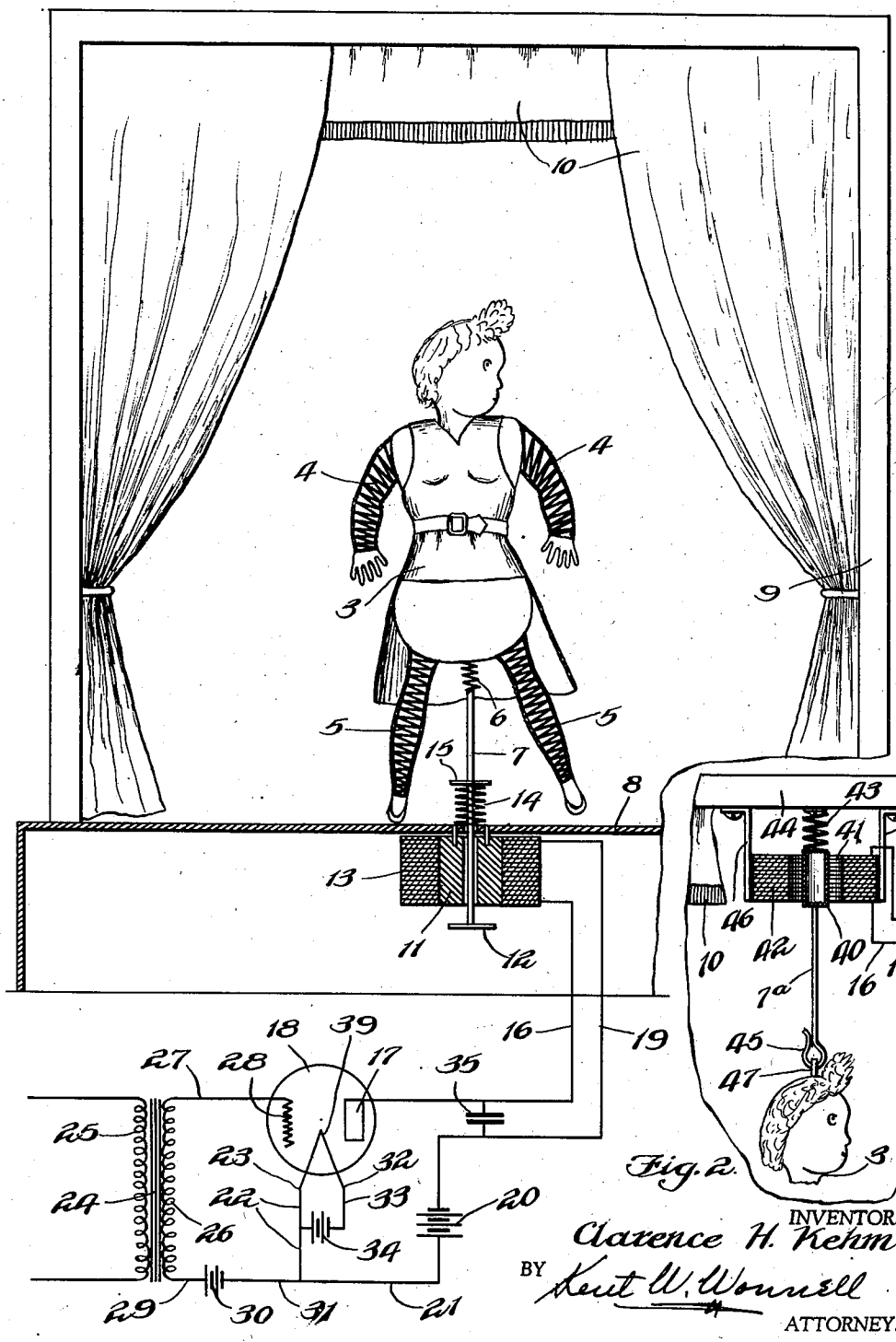


Fig. 2.

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RADIO DOLL

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3 Claims. (Cl. 46—138)

This invention relates in general to a flexibly or loosely mounted object, such as a doll, adapted to be vibrated or moved in accordance with an impulse received by radio.

A further object of the invention is in the provision of a flexibly mounted doll or the like adapted to be oscillated or moved in accordance with sound signals such as music, to simulate dancing.

A further object of the invention is in the provision of a radio circuit induced by sound impulses in which the plate current of a radio tube is increased when the grid voltage is increased by shunting an inductance in the plate circuit with a condenser having a certain capacity.

Other objects of the invention will hereinafter appear, a preferred embodiment of the invention being illustrated in the accompanying drawing, in which

Fig. 1 is a view partly diagrammatic and partly in section illustrating a dancing figure magnetically energized by a circuit from a radio output transformer as used in connection with radio receiving sets; and

Fig. 2 is a sectional view of a modified form of the energizing magnet and armature as shown in Fig. 1.

In carrying out this invention a figure such as a dancing doll, a flying bird, or any other object having parts or projections which may be shaken or vibrated, is suitably mounted upon a small stage or platform to receive impulses from an output transformer of an ordinary radio receiving set, including a radio tube in a circuit with an inductance and a condenser in such a manner that the plate current of the radio tube is increased when the grid voltage is increased, thereby causing an excitation or movement of the doll or figure when a louder sound is received on the radio.

Referring now more particularly to the drawing, a doll 3 having arms 4 and legs 5 made of springs, or loosely jointed, and suitably clothed, is attached by a spring 6 to a rod 7 which supports it above a plate or platform 8 in such a manner that the movement or vibration of the rod causes the legs and arms to be agitated or vibrated, simulating dancing, or other action, depending upon the figure used. The figure may be mounted on the top of a plate or may be partially enclosed in a stage setting 9, including curtains or drapes 10, or it may be suspended from the top of the stage, as in Fig. 2.

To operate the figure the rod 7 extends through a magnet 11 and has an armature 12 attached thereto. The magnet is energized by a winding 13 and a spring 14 is interposed between the platform 8 and a collar 15, and surrounds the rod 7 to exert an upward pressure upon the doll, thereby balancing its weight and allowing the spring 6 to give a lateral movement and more vibration to the arms, legs and other projections of the vibrating figure.

To energize the magnet winding a conductor 16 is connected to a plate 17 of a radio tube 18, and the other conductor 19 is connected to one side of a battery 20, or other suitable source of current supply, and thence through conductors 21 and 22 to one terminal 23 of the tube filament 39, thus completing the magnet circuit through the radio tube.

A transformer 24 has a primary winding 25 which is connected preferably to the output transformer (not shown) of a radio set which causes an alternating voltage to be induced in a secondary winding 26 of the transformer connected by a conductor 27 with a grid 28 of the radio tube. The connection, however, may be made with any other sound source for causing the excitation of the secondary winding of the transformer. The other terminal of the secondary winding is connected by a conductor 29 through a battery 30, or other source of electrical supply, and by conductors 31 and 22 to one terminal 23 of the filament 39 of radio tube, thus completing the secondary circuit for the transformer through the tube 18.

The other terminal 32 of the radio tube filament 39 is connected by a conductor 33 with one side of a battery 34, or other suitable source of current supply, the other side of which is connected to the conductor 22, thus representing the power circuit for the tube filament.

A condenser 35 having a suitable capacity is shunted across between the conductors 16 and 19 to bypass current pulsations in the circuit including the electro-magnet, thereby causing a variation of impulses to the magnet with the corresponding variation of plate current.

When the transformer is connected to the output transformer of a radio set, an alternating voltage will be induced in the secondary winding 26 in accordance with the impulses received by the radio set. This will cause the grid 28 of the radio tube to receive more or less voltage and the grid is so biased that only a small amount of plate current will flow through the plate 17 with a condition of no signal. As the condenser 35 bypasses the current pulsations received by the plate it causes the plate current to increase

with the grid voltage increase. Thus with variations of grid voltage it will be seen that the winding 13 of the magnet will receive a corresponding variation of plate current which in turn will cause a corresponding vibration of the magnet armature and of the figure attached thereto.

Instead of the plate armature 12 as shown in Fig. 1, a hollow magnetic metal armature 40 as shown in Fig. 2 may be attached to a similar rod 7a and moved more or less into a recess 41 of a magnet winding 42 to cause the vibration of the doll or other movable figure. This may be applied to a structure as shown in Fig. 1 or to a suspended type as shown in Fig. 2, in which the winding 42 is supported by brackets 46 and the armature 40 is suspended by a spring 43 from the top 44 of the stage and the rod may have a bottom hook 45 for interchangeable engagement with an eye of a doll 3 or other vibrating figure.

Thus the tube 18 and transformer 24 together with the other associated parts shown in circuit in the drawing are integral parts of the invention which forms an attachment applicable to present day radio receivers. The tube is necessary as a further means of amplification and also to avoid changes in applying the attachment to present radio receiving sets. The transformer shown constitutes one means of connecting this attachment with a receiving set without interfering with its normal use, and magnet winding 13 is not intended to be connected directly to the tubes of the radio receiving set.

While the dancing doll or other movable figure shows a means for utilizing the impulses received from a radio set, it is an important feature of the invention that the plate current of a radio tube is increased by means of a condenser shunting a magnet in the plate circuit of a radio tube, whereby an increase in plate current is directly caused with an increase of grid voltage, and increased impulses are given to the magnet winding by increased sound signals from the radio.

I claim:

1. A dancing doll attachment for a radio receiving set, said attachment comprising an electronic relay, an electromagnet in series therewith, said magnet having an upright opening therethrough at the center thereof, a vertical armature fitting loosely in said opening and actuated by the magnet, a figure supported by the armature and bodily movable therewith and in the same plane, resilient means supporting the armature and the said figure and operating to counterbalance the weight of the figure and the armature, whereby the audio frequency current will be relieved of the inertia of the figure and will cause a maximum operation of the figure at a normal operation of the electrical sound source, the circuit including the relay and the magnet being varied by audible frequency currents from the radio receiving set.

2. A dancing doll attachment for a radio receiving set, said attachment comprising an electronic relay, an electromagnet in series therewith, said magnet having an upright opening therethrough at the center thereof, a vertical armature fitting loosely in said opening and actuated by the magnet, a figure supported by the armature and bodily movable therewith and in the same plane, resilient means supporting the armature and the said figure and operating to counterbalance the weight of the figure and the armature, whereby the audio frequency current will be relieved of the inertia of the figure and will cause a maximum operation of the figure at a normal operation of the electrical sound source, the circuit including the relay and the magnet being varied by audible frequency currents from the radio receiving set, the said armature being pendently supported by said resilient means and the said figure being in turn pendently supported from said armature.

3. A dancing doll attachment adapted for connection with a sound source, said attachment embodying an electronic relay, a magnet connected with said relay and also with a source of current, said magnet having an upright opening therethrough at the center thereof, a vertical armature fitting loosely in said opening and actuated by the magnet, a figure supported by the armature and bodily movable therewith and in the same plane, resilient means supporting the armature and the said figure and operating to counterbalance the weight of the figure and the armature, whereby the audio frequency will be relieved of the inertia of the figure and will cause a maximum operation of the figure at a normal operation of the sound source, the current including the relay and the magnet being varied by audible frequency emanating from the said sound source.

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