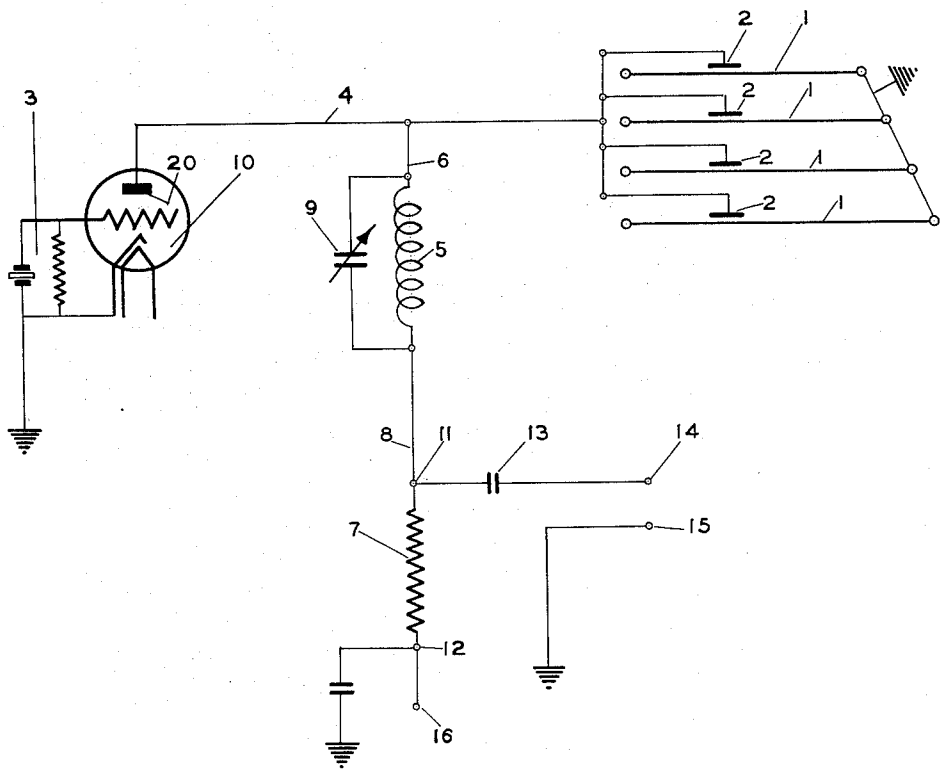
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TRANSLATION SYSTEM

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TRANSLATION SYSTEM

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3 Claims. (Cl. 84—1.14)

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This invention relates to conversion of mechanical movements of objects into a corresponding change of electrical energy which may be converted into a corresponding sound energy from said mechanical movements.

My invention is particularly adapted to be used in connection with musical instruments, microphones and the like, and the primary object of my invention is to provide a new means of translating movements or vibration of objects such as strings, reeds, diaphragms, tone wheels and the like into sound of corresponding proportions.

A further object of my invention is the method of translating of the movement of objects for producing sound or varying electrical energy that requires a minimum of space accommodating its installation.

Referring to the drawing, I illustrate a diagrammatical layout of my invention, in this drawing I have not shown the amplifier circuit but have indicated where the same would be connected.

I have indicated in the drawings the strings of a piano, guitar or other musical instrument, although these moving objects may be diaphragms in microphones, reeds or tone wheels of musical instruments.

In the carrying out of my invention I mount electrostatic capacity plates 2 adjacent the strings 1 by any suitable mounting means. A standard piezoelectric crystal oscillator circuit 3 is illustrated in conjunction with my invention and is connected with the capacity plates 2 by the conductor 4. However, a master oscillator circuit may be employed.

An inductance coil 5 is connected to the conductor 4 by the wire 6 and to the resistor 7 by the conductor 8. A variable condenser 9 is connected in parallel with the coil 5. This condenser is used to form a tuned circuit in conjunction with coil 5 and capacity plates 2, the combination of which will electrically resonate with the oscillator circuit 3.

I will now describe the operation of my means for producing sound from mechanical movements. When the strings 1 are at rest the combination of capacity between the strings 1 and the plates 2, together with condenser 9, will resonate coil 5 with the frequency of the oscillator circuit 3, which will allow a minimum of current flow in the plate circuit of the oscillator tube 10.

When the strings 1 are moved away or towards the plates 2 by vibration this creates an off resonance effect of coil 5 and condenser 9 with respect to the oscillator circuit 3, causing a corresponding change of current flow in the plate circuit of tube 10. The change in the current flow in the plate circuit of the tube 10 causes a corresponding change in voltage drop between the terminals 11 and 12 across resistor 7. This variation of voltage drop across resistor 7 causes a

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corresponding alternating current voltage to appear at the terminals 14 and 15 which is connected to an amplifier not here shown.

From the above description it can be seen that the movement of the strings 1 relative to the plates 2 will produce an alternating current component between the terminals 14 and 15, which will be at the same frequency as the movement of the strings. Direct current for the plate circuit of the tube 10 enters through the terminal 16, resistor 7, conductor 8, coil 5, conductors 6 and 4 to the plate 20. The filament circuit supply is derived from the usual sources.

What I claim is:

1. A translation system for reproducing sounds from the strings of musical instruments, comprising electrostatic capacity plates to be respectively arranged responsively adjacent to the strings of a musical instrument, an oscillator having an output plate in electrical connection with the plates, an inductance coil in circuit with the connection between the oscillator and said capacity plates, a variable condenser in parallel with the coil, a resistance in circuit with the coil and having terminals separated by said resistance, and amplifier circuit terminals, one of said last-mentioned terminals being connected to one of said resistance terminals and the other amplifier circuit terminal being connected to ground.

2. A translation system for reproducing sounds from the vibrations of musical instruments comprising vibratory sound producing means, grounded at one end, plate means each adjacent one of the vibratory means and constituting therewith a condenser, an oscillator including an output plate connected to the plate means, tuning means at one end connected to the plate means and oscillator, a resistance having one of its terminals connected to the other end of the tuning means and the other terminal to ground, and terminals connected to an amplifier, one of said amplifier terminals being connected to the first resistance terminal and the other amplifier terminal being connected to ground.

3. The system according to claim 2 and wherein the oscillator is of the piezo-electric crystal type.

JACK R. ZECKMAN.

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