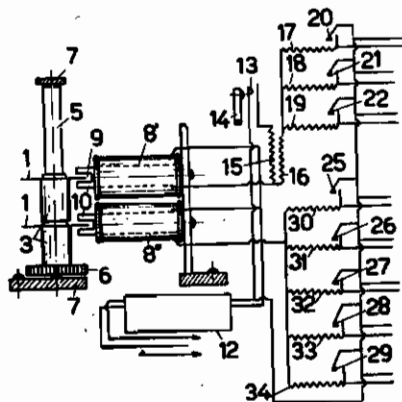
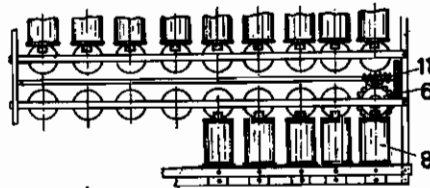
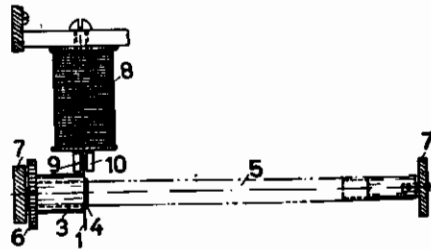
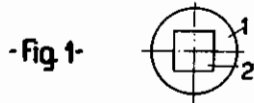


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# ALIEN PROPERTY CUSTODIAN

## ELECTRO-MAGNETIC ORGAN

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Alien Property Custodian.

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The present invention relates to an organ based on the principle of the electro-magnetic recording and reproduction of sounds.

The sounds are recorded on appropriate recorders, constituted of discs or of closed ribbons of magnetizable material. Each sound recorder is magnetized according to a certain sound.

The sound recorder rotating in a fissure of the core of a coil, or in the space included between the poles of the cores of two coils, generates in the coil, or in the coils, a current which on the closing of the respective circuit, or circuits, is transmitted to the amplifier, and therefore to the loudspeaker.

The closing of the various circuits is effected by means of the key-board, which, in its resting position, keeps them all open; a potentiometer allows of the graduation of the intensity of the sounds coming in or out of the pre-amplifier. It will be possible, however, to graduate the sounds by means of potentiometers.

In a second form of embodiment, on a portion of the sound recorder the fundamental notes are recorded, while on others are recorded their harmonics or higher tones in general. The connecting circuits are made in such a way that it is possible to combine a fundamental note with higher tones independent of one another, or to reproduce certain combinations of notes so as to obtain a given sound, or even combinations of sounds already fixed.

Besides, each fundamental note, by means of resistances differently graduated, may give origin to harmonics which can be fused with other harmonics or with different fundamental notes so as to originate complex sounds.

In the annexed drawing, given only as an example without limitations:

Fig. 1 is a front view of a disc on which a certain sound is recorded electro-magnetically;

Fig. 2 is a side view of a distancing sleeve of prismatic shape, on which a disc is mounted as shown in Fig. 1;

Fig. 3 is a view of a prismatic shaft on which are mounted the distancing sleeve and the disc referred to in Fig. 2, the latter being able to rotate in a fissure of the core of a coil;

Fig. 4 represents a practical embodiment of the mechanism of the organ;

Fig. 5 represents a second form of embodiment of the invention with the diagram of the electric connections.

With reference to the said drawing, and particularly to Figures 1 to 4, the electro-magnetic

organ according to the invention is made as follows:

(a) Of a series of discs 1, each magnetized according to a determined sound and provided with a central hole 2, preferably of a square shape;

(b) Of a series of prismatic distancing sleeves 3, on collar 4 of each of which can be fitted and conveniently secured a disc 1;

(c) Of a series of prismatic shafts 5, each of which is divided into sections and bears a series of distancing sleeves 3, there being provided at the end of each section a ring or other fitting to hold the distancing sleeves in position, each shaft being further provided with a toothed wheel or another appropriate device to transmit the rotation movement to said shaft, the latter being placed between two supports 7, to which it is secured by means of removable pivots borne by the shaft;

(d) By a coil 8 in relation to each disc 1, disc 1 rotating through fissure 8 of its core 10, it being preferable that instead of only one coil 8 two coils be used in accordance with the more recent system of magnetic detection, in which case each disc 1 will rotate, instead of in a fissure of the core, between the two cores of the coils relating thereto, one of said coils being eventually removed;

(e) By means, as for instance a worm 11, apt to keep in continuous rotation the series of prismatic shafts and therefore all the disc 1;

(f) By a key-board (not shown in the drawing) for the opening and closing of the circuits relating to each note or sound;

(g) By a potentiometer for each disc, or for each group of discs, or even one for each organ, apt to graduate the intensity of the current and, consequently, the intensity of the sounds.

As already stated, each disc 1 is magnetized according to a different sound. It is not to be excluded that on the same disc several concentric frequencies may be recorded, detected through separate detectors.

The prismatic shafts 5 and therefore the discs 1 are made to rotate continually by means of worm 11 before the production of the sounds is started and are kept in rotation for the whole time, at least, of the duration of the production of the sounds.

Discs 1, by rotating in a fissure of the core of a coil, or between the two poles of the cores of two coils, owing to their magnetization, generate currents which, as the circuits are open, cannot reach the amplifier.

The organist by pressing on the keys closes the

respective circuits of the keys. The currents, then, will proceed from the coils to an amplifier, which, by means of a loudspeaker, will reproduce the sounds properly strengthened.

An organ mase as is previously shown has, however, the disadvantage of having a considerable number of sound recorders, in order to present that variety and completeness of sounds which are the privilege of pipe organs.

In order to obviate this inconvenience provision is made for a second form of embodiment of the invention illustrated in Fig. 5. In this form one has likewise the discs 1, the distancing sleeves 2, the prismatic shafts 3, the coils 4. Discs 1, however, are magnetized partly according to fundamental notes and partly according to their harmonics or higher tones in general. To simplify matters, with reference always to Fig. 5, we will indicate by 1' the disc magnetized according to a fundamental note and by 1'' the disc magnetized according to a harmonic or higher tone whatsoever. Likewise, with regard to the coils: 4' will indicate the coil relating to disc 1' and 4'' will indicate the coil relating to disc 1''.

The current generated by disc 1' in coil 4' is sent to pre-amplifier 12 by closing switch 13 by means of key 14, a resistance 15 being inserted in the circuit so as to send to pre-amplifier 12 a fraction of the current produced. Instead of passing through switch 13 the same current may

be sent through resistance 16 and one of resistances 17, 18, 19 and this by closing one of the switches 20, 21, 22. Through any one of these switches there is sent to the pre-amplifier a fraction of the current produced because resistances 17, 18, 19 are a different values, or wholly or partly equal among themselves; it is thus possible to obtain harmonics of the fundamental note or higher tones in general, which can be secured independently or in combination with one another.

It is possible to send to pre-amplifier 12 any number whatever of higher tones already combined and fused with the fundamental note, namely, to utilize an already combined sound.

The current generated by disc 1'' originates, through coil 4'', a number of higher tones corresponding to the resistances put in parallel on the electric conductor which from coil 4'' conveys the current to the pre-amplifier 12. The said resistances 30, 31, 32, 33, 34 can be taken independently by means of switches 25, 26, 27, 28, 29 or already combined with other higher tones and other fundamentals.

Resistances 17, 18, 19, 30, 31, 32, 33, 34 may also be variable by means of a Wheatstone bridge or other suitable means, for the purpose of having a much greater number of higher tones at one's disposal.

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