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METHOD AND APPARATUS FOR PLURAL RECORDING AND REPRODUCING OF SOUNDS

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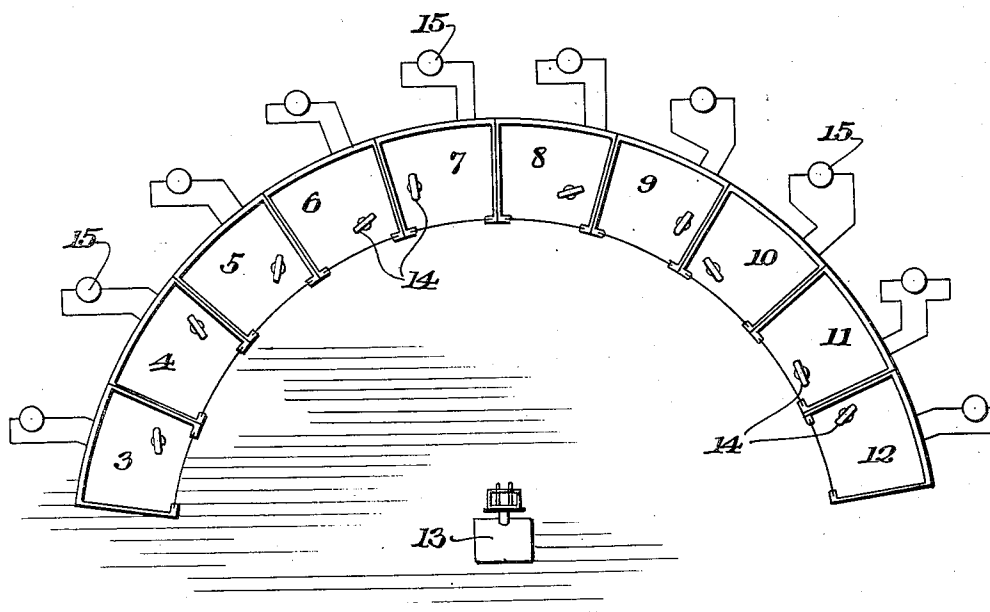


Fig. 1.

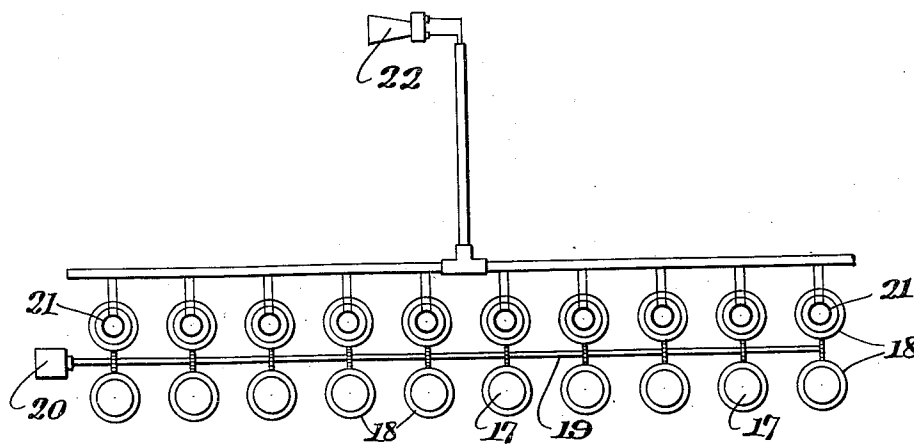


Fig. 2.

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METHOD AND APPARATUS FOR PLURAL RECORDING AND REPRODUCING OF SOUNDS.

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This invention relates to improvements in the method and apparatus for making and reproducing plural sound records, one object of the invention, being the provision of a method, whereby as for instance, each instrument in an orchestra will be so isolated from the other instruments that a record of each instrument will be made although all of the instruments will be played in synchronism or in consonance so that when the same number of completed records are actuated upon a plural sound reproducing machine, an harmonic result will be obtained. It is a known fact that where the record is made of two or more instruments that the diaphragm is actuated primarily by the sound wave of the greatest intensity and that therefore, the desired harmonic result can not be obtained, whereas by employing the method of this invention, a record is made from each instrument and which with the operator or artist is included with the microphone in a sound-proof glass case or cabinet, the front of the cabinet, being of glass, so that the artist can see the orchestra leader and whereby all the artists play their respective instruments exactly the same way as they would without the cabinets, but to affect only its respective microphone. Each microphone is electrically connected to its respective recording element and in that manner, a record is made of each instrument or artist. The reproducing record which is then made from each of these, or all of such reproducing records will be in complete sets of two or more, are then placed upon their respective rotary sound reproducing machines, all of which are preferably operated from a single shaft so as to be in exact synchronism. It will thus be seen that the various records will then give forth the music from its respective instruments in its exact quality and value and harmony, thus producing an orchestration of unsurpassed harmony and elegance.

In order that the method may be more fully understood, attention is invited to the accompanying drawings in which:

Figure 1 is a diagrammatic view of the recording scheme, and

Figure 2 is a diagrammatic view of the reproducing scheme.

Referring to the drawings and more particularly to Figure 1, the numerals 3 to 12 indicate the glass sound-proof cabinets which are so arranged as to be visible to

and from the position 13 of the leader. In each cabinet is located a microphone 14 which is electrically connected to the electrical sound recording apparatus 15, one for each booth or cabinet.

It is a well known fact that up to the present time, though highly desirable, it has been impossible to combine drums and similar noises with the music of a band or orchestra without undesirable effects, the sound waves and air waves from the drum or drums affecting the microphone or diaphragm to such an extent as to drown out or distort the sounds from the harmonious assemblage; but with the present invention the disadvantage is removed, and it is now possible to make a concurrent, synchronous, individual sound record of the drum or drums while the orchestra or band minus the drum or drums is being recorded upon many separate or a single separate record. That is each instrument of the orchestra or band, or all of the instruments of the orchestra or band, except the drum or drums, are recorded separately or in unison, while the drum or drums are recorded upon a separate record simultaneously with the recording of the orchestra or band.

It will thus be seen that the leader can conduct all of the artists in their respective cabinets so that each will play their respective part in the concert and in a similar manner as if the cabinets were absent, but that each instrument will have an individual recordation and its quality thus be preserved. The records thus made will be made in sets and will in turn be the masterpiece for the sound reproducing records or discs 17 as shown in Figure 2. These discs are mounted upon respective rotary platforms 18 driven from a common shaft 19 and motor 20. The electrical transmitter 21 is employed with each recording platform and each is connected to its respective individual electrical amplifier or reproducer, one for each reproducing platform or turntable.

From the foregoing description, it is evident with the method and apparatus herein set forth, that the finest results can be obtained in the reproduction of all harmonic sounds consisting of various musical instruments, the accompanying of various voices and the combination of instruments and a voice or voices, giving to each the desired quality and value which has never yet been obtainable with a single microphone used in

recording two or more instruments or with two or more reproducers leading to a single reproducer as is the present practice.

What I claim as new is:

- 5 1. A method of recording and reproducing of a plural number of sounds, which consists in intercepting sound waves at a plurality of different sound isolated points, converting said sound waves into electrical waves, re-
10 cording simultaneously and independently the effect of said sound waves, converting said recorded sound waves into electrical waves, and reproducing simultaneously and individually the various sounds.
- 15 2. A method of recording and reproducing of a plural number of sounds, which consists in intercepting sound waves at a plurality of different enclosed sound excluding points, converting said sound waves into electrical
20 waves, recording simultaneously and independently the effect of said sound waves, converting said recorded sound waves into electrical waves, and reproducing simultaneously and individually the various sounds.
- 25 3. A method of recording and reproducing of a plural number of sounds, which consists in intercepting sound waves at associated non-interfering points, converting said
30 sound waves into electrical waves, recording simultaneously and independently the effect of said sound waves, converting said recorded sound waves into electrical waves, and reproducing simultaneously and individually the various sounds.
- 35 4. A method of recording and reproducing of a plural number of sounds, which consists in intercepting sound waves at a plurality of different associated but isolated points by means of electrical translators, converting
40 said sound waves into electrical waves, recording simultaneously and independently through the medium of electrically actuated styli and records, one stylus and one record

to each electrical translator, employing a plurality of styli operated electrical pick- 45 ups, one to each record, to convert said recorded sound waves into electrical waves, and reproducing simultaneously and individually the various sounds through a plurality of electrically actuated sound amplifiers. 50

5. A system for recording a plurality of various and isolated sounds, including a plurality of electrical transmitters, a sound-proof cabinet, a portion of which is transparent, one cabinet to each transmitter, said 55 cabinets being arranged in groups, a plurality of electrical recorders, one to each transmitter, and a plurality of records, one to each recorder, and whereby each transmitted sound is individually and simultaneously 60 recorded.

6. A system for the recording of a plurality of different and isolated sounds including a plurality of electrical transmitters, a sound-proof cabinet encasing each transmitter, said 65 cabinet being completely or partially transparent, a plurality of electrical sound recorders, one for each transmitter, and under the influence of its respective transmitter, and a plurality of sound records one to each trans- 70 mitter and recorder, whereby a plurality of independent individual sound records are simultaneously and synchronously produced.

7. A system for the recording of a plural- 75 ity of different and isolated sounds, including a plurality of electrical transmitters, a sound proof cabinet encasing each transmitter, said cabinets each being completely or partially transparent, a plurality of electrical sound recorders, each comprising 80 a stylus recorder, a plurality of records, one to each recorder, and a plurality of record turntables, one to each record.

In testimony whereof I affix my signature.

HARRISON W. ROGERS.