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W. H. BRISTOL.
SOUND SELECTING APPARATUS.
APPLICATION FILED JUNE 22, 1920.

1,396,402. Patented Nov. 8, 1921.

Fig. 1.

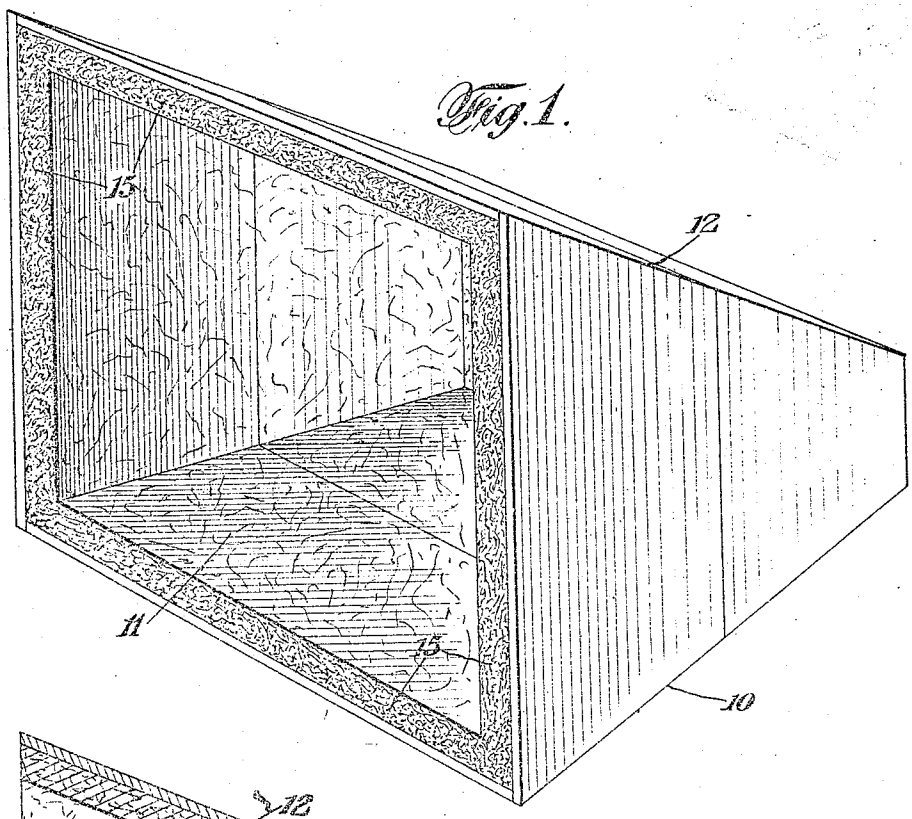
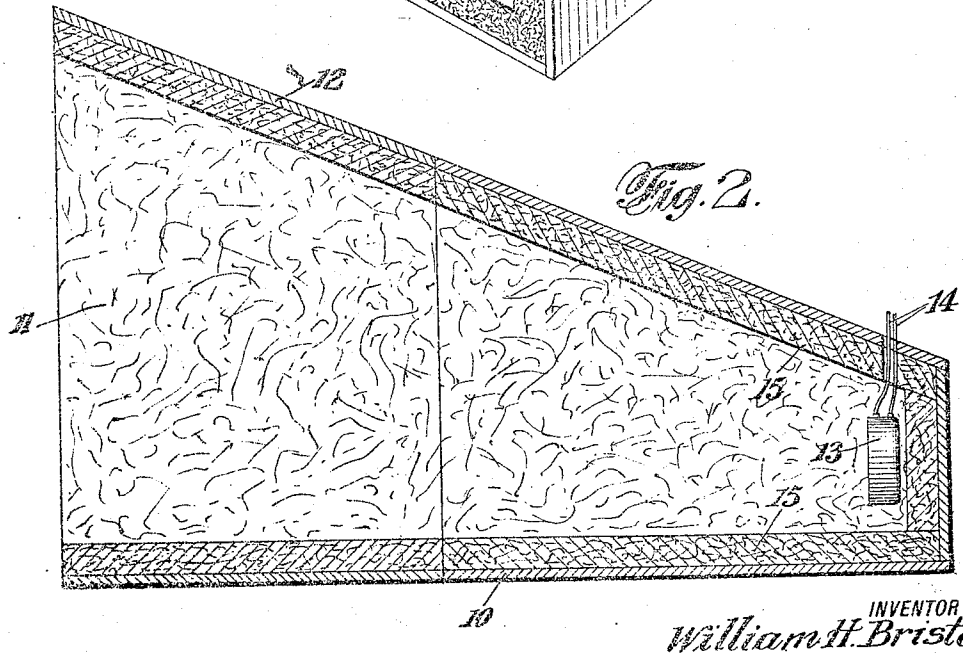


Fig. 2.



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SOUND-SELECTING APPARATUS.

1,396,402. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed June 22, 1920. Serial No. 390,910.

To all whom it may concern:

Be it known that I, WILLIAM H. BRISTOL, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Sound-Selecting Apparatus, of which the following is a specification.

The invention relates to the reproduction of sound, particularly when under amplification, and either directly or through the medium of a permanent record and a reproduction apparatus therefor.

The invention is concerned more especially with sound reproduction involving the use of super-sensitive devices such as thermionic and other amplifiers in combination with telephonic transmitting means, for example as more particularly set forth in my co-pending application Serial No. 330119. In the reproduction of sound in this manner, it becomes necessary as a result of the extreme sensitiveness of the amplifying means to exclude all extraneous sounds, echoes and reflections. To this end it has heretofore been found necessary to suitably pad the walls and ceiling of the room in which desired sound waves were produced for recording purposes. While this expedient may be satisfactory for some purposes, it of course excludes the making of records for example in auditoriums, churches, court-rooms and under various other conditions where it would be desirable to obtain a record of a speaker or speakers or of musical selections.

I have found that by locating the electrical transmitting mechanism employed at the rear of a suitable protector box, which is lined with sound deadening material, as heavy felt or like material, that the expensive and troublesome lining of the walls and ceiling, formerly necessary, may be dispensed with and the desired sounds selected so that entirely satisfactory records may be obtained under conditions which have heretofore precluded the making of such records.

The nature of the invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 illustrates in perspective a sectional protector box for the transmitting apparatus.

Fig. 2 is a vertical section thereof.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, 10 designates a suitably shaped receptacle, preferably tapering, and closed throughout except at the front 11 which is shown fully opened. This receptacle may be of various shapes, but I have found the flaring type herein illustrated particularly suitable for the purpose. Moreover, the box may be built up of removable sections, as illustrated, to readily accommodate the apparatus to different conditions by providing the size best suited thereto, it being understood that sections 12 are to be added or removed as required. As will be noted, the rear of the receptacle is closed; and substantially at this point and in the axis of the receptacle there is located telephonic transmitting apparatus 13 of any well-known or special type. From the telephonic apparatus 13 extend leads 14 to suitable amplifying apparatus (not shown) by which the intensity of the sound is magnified to the desired extent and either reproduced directly through suitable receivers or recorded on a phonographic disk or like member, as is well understood and which forms no particular part of the present invention. I am aware that horns and similar sound receiving devices have been employed for this purpose; but the present invention consists in the combination of a telephonic transmitter, employed in connection with super-sensitive amplifying apparatus, with a protector box or receptacle having a sound-deadening lining such as heavy felt or similar material 15, whereby extraneous sounds will be eliminated in the reproduction and only those desired reproduced. It is understood that the sounds to be reproduced will be directed more or less toward the opening of said receptacle, although the distance from same is, within reasonable limits, variable. I have found that suitable reproduction may be obtained at convenient distances ranging, for example, from 6 to 20 feet or more from the opening of the receptacle; and in this manner it is possible to reprodute or directly make records as of speeches, court proceedings, testimony and music in the regular rooms, halls and the like in which the same are produced and without in any way altering these places. In fact, the receptacle

11 is in the nature of a miniature room in which only the desired sound waves are permitted to strike the transmitter, the others either not entering the small opening 11 at all; or, if so, being not reflected toward the said transmitter owing to the nature of the inner surface of said receptacle. The articulation of speech or song or the reproduction of music will be perfectly natural and there will be no jumble of same with extraneous sound which, it will be understood, in the ordinary manner of reproducing would be also amplified in the reproduction and render same entirely unsuitable. This means of recording renders it possible, also, to readily obtain, simultaneous photographic reproductions of the scenes accompanying the sounds and thus admit of synchronized reproduction of both.

I claim:

1. Apparatus for use in phonographic recording, comprising a flaring receptacle open at the front and closed at the inner end, said receptacle being lined substantially throughout with material which will not reflect sound, and a telephone transmitter located at the inner end of said receptacle and acoustically independent thereof.

2. Apparatus for use in phonographic recording, comprising a flaring, built-up, sectional receptacle open at the front and closed at the inner end, said receptacle being lined substantially throughout with material which will not reflect sound, and a telephone transmitter located at the inner end of said receptacle and acoustically independent thereof.

3. Apparatus for use in phonographic recording, comprising a flaring receptacle open at the front and closed at the inner end, said receptacle being lined substantially throughout with material which will not reflect sound, and a telephonic transmitter located at the inner end of said receptacle, acoustically independent thereof and its diaphragm being of appreciably smaller area than the opening at the front of the receptacle.

Signed at New York, in the county of New York and State of New York, this 18th day of June, A. D. 1920.

WILLIAM H. BRISTOL.