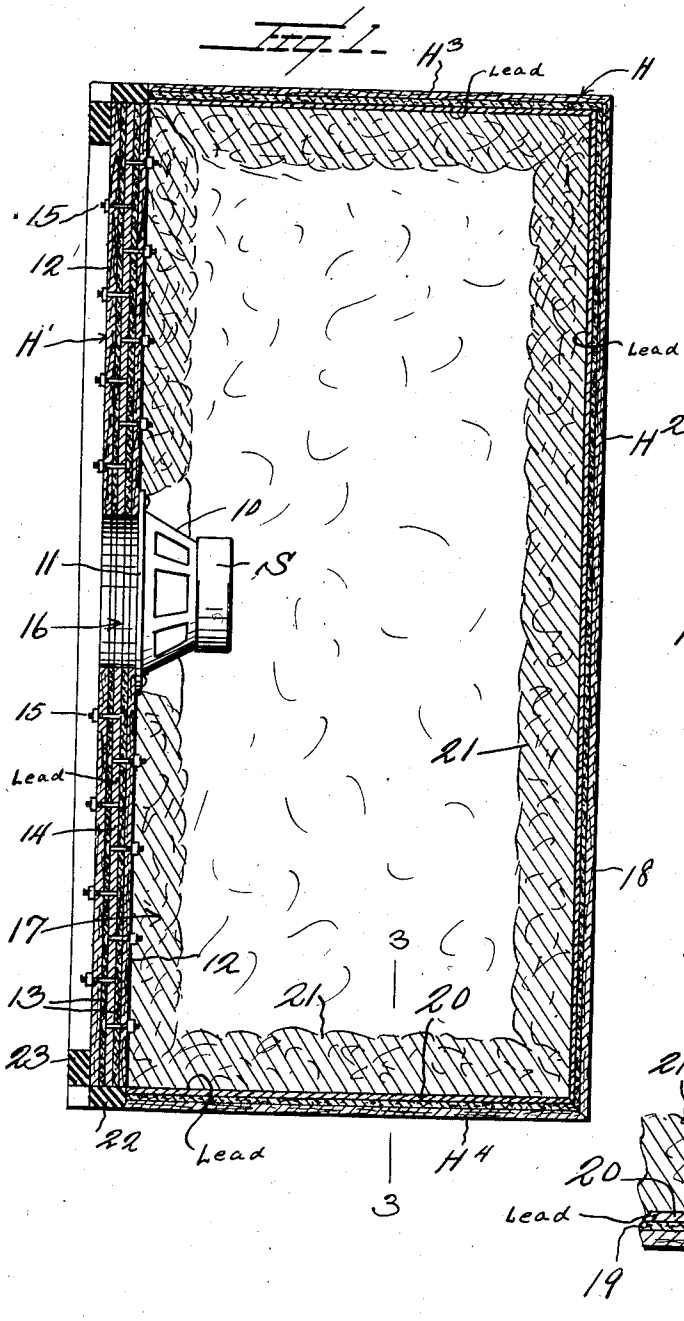
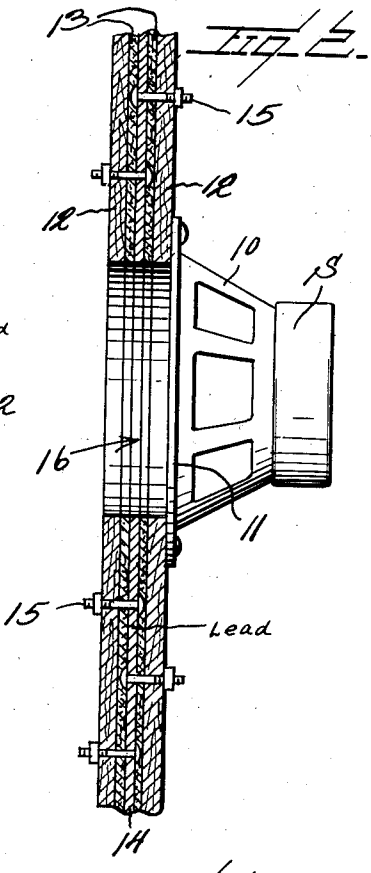
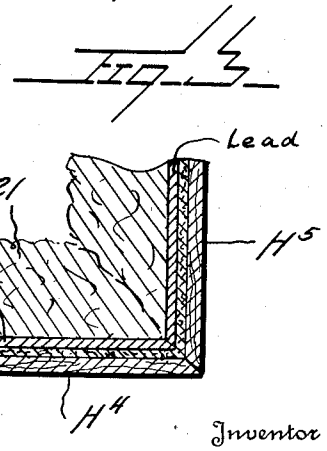
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RADIO SPEAKER UNIT SUPPORT

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RADIO SPEAKER UNIT SUPPORT

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6 Claims. (Cl. 181—31)

This invention relates to the class of recording and reproducing, and pertains particularly to improvements in mountings for loud speakers.

The principal object of the present invention is to provide an improved radio loud speaker mounting board or baffle board by means of which baffle board and cabinet resonance is reduced to a minimum.

Another object of the invention is to provide an improved radio loud speaker support which is so designed that the air pressure upon the back of the loud speaker cone is maintained at all times at substantially the same pressure whereby there is obtained elimination of cabinet boom and hollowness or barrel effect which is so common to structures in which the reproducer unit is mounted in an ordinary wooden cabinet.

Another object of the invention is to provide a support and housing for a loud speaker unit in which the unit is enclosed within a sound absorbing chamber and in which a wall of the chamber is provided with an opening over which the speaker cone of the unit is secured, the said wall being of novel construction to absorb vibration and thereby reduce resonance produced noises.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing, it being understood, however, that the invention is not to be considered as limited by the specific illustration or description but that such illustration and description constitutes a preferred embodiment of the invention.

In the drawing:

Figure 1 shows a vertical longitudinal section through a loud speaker baffle board support and housing constructed in accordance with the present invention;

Figure 2 is a fragmentary section on an enlarged scale through a portion of the center of the baffle board; and

Figure 3 is a fragmentary section taken on the line 3—3 of Figure 1, and on an enlarged scale.

Referring now more particularly to the drawing, the radio loud speaker unit is indicated generally by the reference character S. This unit includes the usual frame 10 of open form and conical design, having at the larger end thereof the annular mounting flange 11.

In accordance with the present invention the speaker unit S is enclosed within a sound absorbing box or housing H. This housing comprises a front wall or baffle board H^1 upon which the speaker unit is mounted as hereinafter described, a back wall H^2 and top, bottom and side walls designated respectively H^3, H^4 and H^5.

The front wall of the housing or baffle board is made up in laminated form and has outer layers of veneer wood 12. The inner face of each of these veneer wood layers has placed thereagainst a sheet or layer 13 of heavy felt paper and interposed between the felt paper sheet or layer is a sheet 14 of lead preferably of 16 gauge or heavier thickness.

The several laminations making up the baffle board H^1 are secured together by bolts 15 which, as clearly shown in Figure 2, do not extend entirely through the board but secure the inner and outer veneer wood layers and felt paper to the central lead sheet. In other words, some of the bolts pass through the lead sheet inwardly through the inner paper layer and inner veneer wood board while others pass through the lead sheet and outwardly through the outer paper layer and outer veneer wood board.

At the center of the baffle board there is formed the opening 16 and the annular frame portion 11 of the speaker is secured to the inner side of the baffle board concentric with this opening.

The inner side of the baffle board is also covered with a relatively thick layer of rock wool or other suitable sound absorbing materal such as jute and the like. This layer of sound absorbing material which overlies the inner side of the baffle board is indicated by the numeral 17.

The top, bottom, side and back walls of the housing are also of laminated construction and are made up of an outer section or layer of wood veneer 18, the inner face of which is covered with a sheet of heavy felt paper 19. Overlying each sheet of paper 19 and thus covering each of the top, bottom, back and side walls is a sheet of lead 20 of the same weight as the lead sheet 14 which is used in the baffle wall. Each of these walls is also covered with the relatively thick layer or bat of rock wool or other suitable sound absorbing material, these layers being indicated by the numeral 21.

Extending around the edge or periphery of the baffle wall is a rubber shock absorbing band or strip 22 which may be secured in any suitable manner to the edge of the baffle wall and it is also secured to the adjacent edges of the top, bottom and side walls so that the baffle wall is integrally connected in the housing structure. The face of the baffle wall is also outlined by the rubber gasket 23 which engages the inner side wall of the cabinet, not shown, in which the present speaker housing structure may be mounted.

With the present speaker housing structure the tone quality of the speaker is very greatly improved over speakers mounted in the customary manner directly to a radio cabinet wall and not having an enclosing sound absorbing casing or housing. The speaker efficiency is greatly improved and the power handling ability is greatly increased.

By arranging the securing bolts in the baffle wall structure in the manner shown and described there is obtained a neutralizing effect on any motion set up by the movement of the speaker cone and, therefore, there is obtained a complete elimination of baffle resonance.

While the dimensions of the sheet or walls of wood veneer and of the other materials may be varied as desired, it is preferred that the veneer be of approximately one-quarter inch thickness and that the inner wall layers of rock wool be approximately two inches thick.

By the provision of the rubber strips around the baffle board, there is provided for the baffle board a floating connection with the rest of the speaker unit enclosing structure.

With this radio speaker unit support or non-resonant speaker baffle the air pressure or loading of the speaker is kept directly on the front of the speaker cone instead of the cabinet or baffle, since any motion of the speaker baffle or cabinet sets up air movements that are not in accord with the movements of the speaker cone, and these extraneous cabinet or baffle movements or vibrations cause serious distortion in the original reproduced speech or music. The present type of baffle eliminates this source of distortion almost entirely.

I claim:

1. A radio loud speaker support comprising a baffle board of laminated construction and having at least three laminations, the board having a central lamination of soft metal, said board having an opening over which a loud speaker cone is positioned, and a sound absorbing housing connected with one side of the baffle board and enclosing the speaker unit.

2. A radio loud speaker unit support comprising a housing having one wall provided with an opening and constituting a baffle board, said opening being designed to have a speaker unit secured thereover upon the inner side of the board, said baffle board being of laminated construction and having at least three laminations and including a central lamination of sheet lead, and a relatively thick layer of a fibrous sound absorbing material overlying the interior surface of the housing.

3. A radio loud speaker unit support comprising a housing, one wall of said housing constituting a baffle board and having an opening over which a speaker unit may be secured, said baffle board comprising a central layer of sheet lead and inner and outer layers of wood, securing members connecting said lead layer with the outer wood layer, each of said securing members extending only from and through the lead layer toward and through one wood layer, and a relatively thick layer of fibrous sound absorbing material overlying the inner surfaces of the housing.

4. A radio loud speaker unit support comprising a housing, one wall of which constitutes a baffle board having a central opening over which the unit is secured, said baffle wall being of laminated construction and including a central layer of sheet lead and inner and outer layers of wood, securing elements extending from said lead layer inwardly to and connected with the inner wood layer, securing elements extending from the lead layer outwardly to and secured to the outer wood layer, the housing having top, bottom, side and back walls, a sheet of lead covering each of said last mentioned walls, and a relatively thick layer of fibrous sound absorbing material covering the inner wall surfaces of the housing.

5. A radio loud speaker unit support as set forth in claim 4 in which said top, bottom, side and back walls are exteriorly formed of wood veneer, and a covering over the inner faces of said last mentioned walls of felt paper which is interposed between the wood veneer and the lead sheet.

6. A radio loud speaker unit support comprising a laminated board having a central opening over which the unit is secured, said board comprising a central lamination of sheet lead, a layer of felt paper disposed over each face of the lead sheet, and a relatively thin wood sheet covering each paper layer, and a plurality of securing elements, certain of which are connected with and extend from the lead sheet in one direction therefrom to the adjacent wood layer and the others of which extend from and are connected with the lead sheet to and have connection with the other wood layer.

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