June 20, 1933. H. BERGHANE 1,915,177

RADIOCABINET

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Fig. 1.

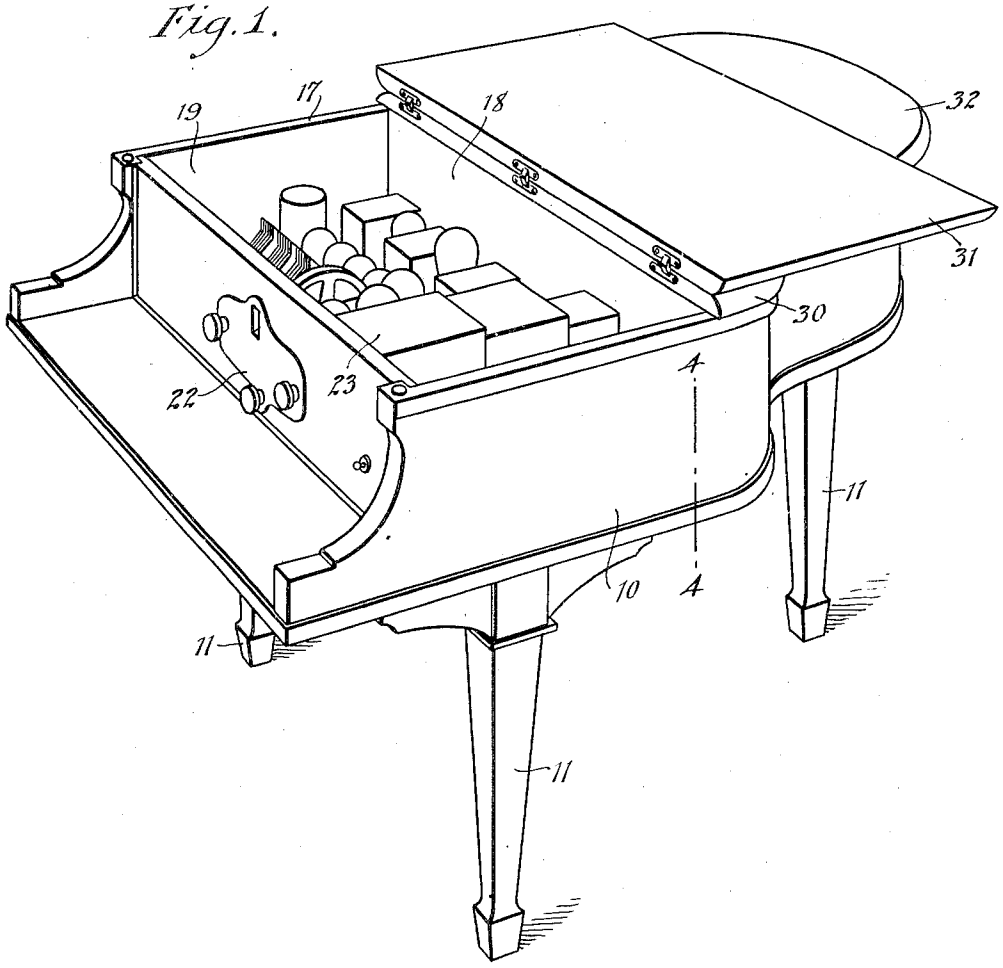
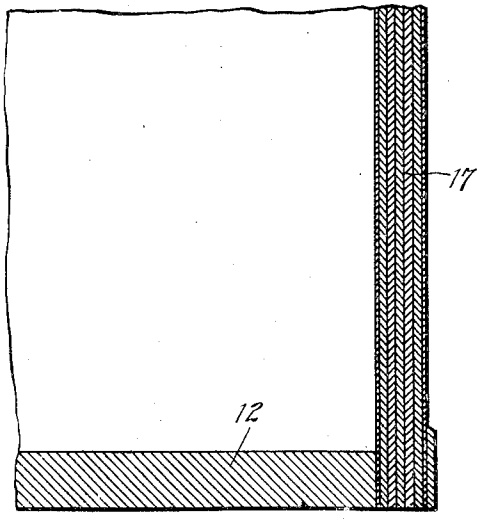


Fig. 4.



WITNESSES

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Fig. 2.

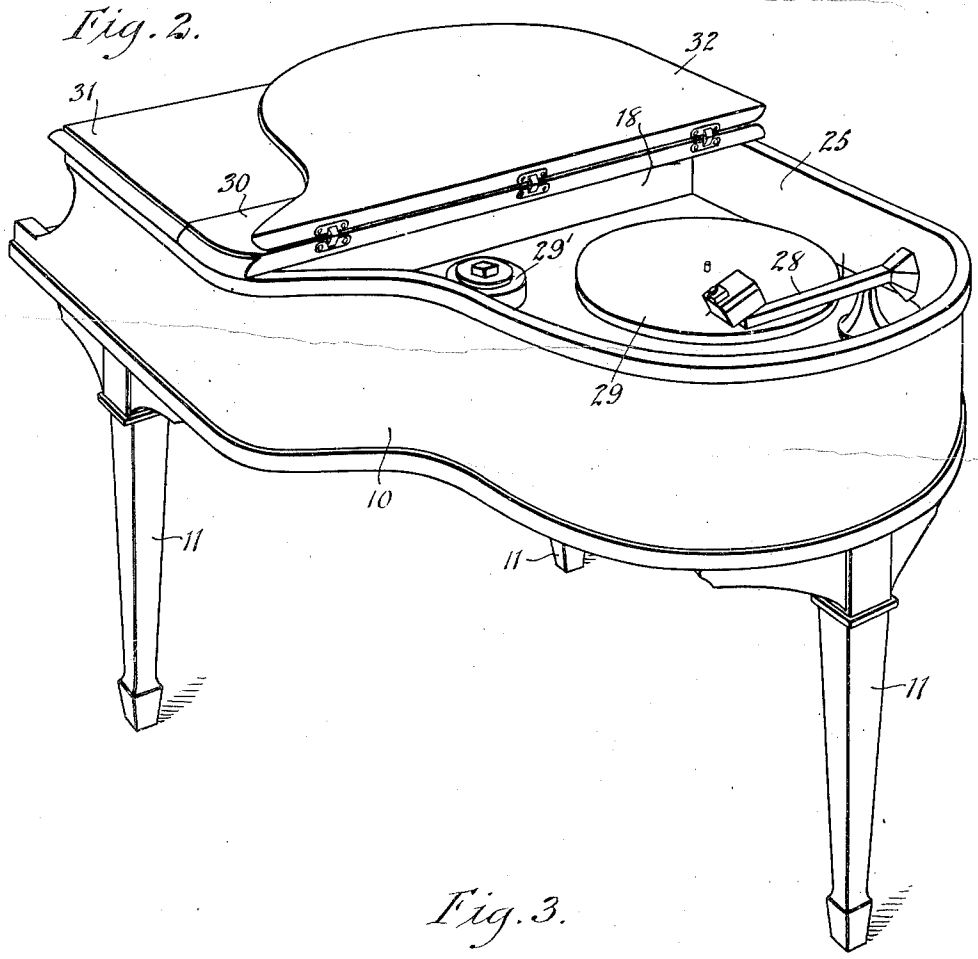
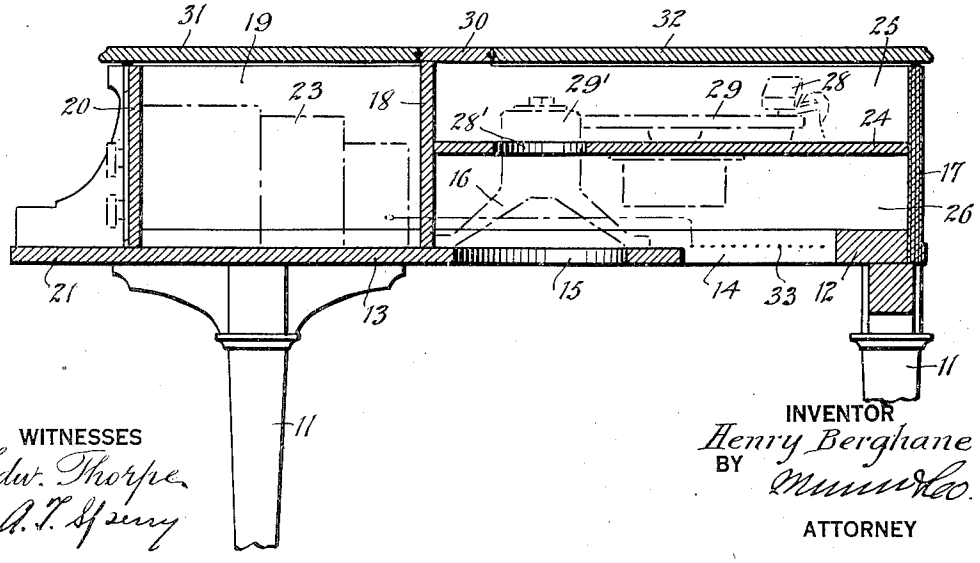


Fig. 3.



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UNITED STATES PATENT OFFICE

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RADIOCABINET

Application filed March 7, 1930. Serial No. 434,049.

This invention relates to radio cabinets.

It is among the objects of the present invention to provide a novel and improved radio cabinet which by the cooperation of novel structural features will provide for a cabinet of novel artistic design and which further provides a cabinet having novel sound-propagating characteristics.

A further object of the present invention is to provide a combined radio and phonograph cabinet similar in appearance to a grand piano.

A further object of the present invention is to provide a radio cabinet having a body formed of ply wood whereby the cabinet will have resonant qualities adapted to co-operate with the propagation of sound from a conventional cone or the like.

A further object of the present invention is to provide in a horizontally disposed cabinet conforming to the shape of a grand piano, a radio receiving circuit, a phonograph turntable and motor, and a sound propagating cone, the arrangement being such that the motor board of the phonograph assembly constitutes a baffle board for the propagating cone.

A further object of the present invention is to provide a radio cabinet conforming to the general shape of a baby grand piano, in which the usual key space is used for a hand rest and ledge while the vertical portion of the front constitutes a tuning dial for the radio receiver.

Other objects of the present invention include the provision of a novel important structure in which the combination and interrelation of parts provide novel, important and unexpected results by which an artistic phonograph and radio assembly is provided, which has improved sound propagating characteristics and is designed to meet the demands of economic manufacture.

Further objects of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawings, in which

Figure 1 is a perspective view showing one form of the present invention, with the front portion of the lid raised, showing the radio receiving equipment;

Fig. 2 is a rear perspective view with the back raised, showing the phonograph assembly and sound propagating unit;

Fig. 3 is a horizontal longitudinal section through the cabinet shown in Figs. 1 and 2, and

Fig. 4 is a detail section taken on the line 4—4 of Fig. 1.

Referring more particularly to the drawings, it will be seen that the present invention comprises a cabinet having a cabinet body 10, the general configuration of which is in conformance with the general configuration of a grand piano. The cabinet 10 is supported upon the conventional three legs 11 and includes a base frame structure 12 having a bottom 13. The bottom 13 extends from the forward edge of the body and terminates short of the rear edge, thus providing a space, indicated at 14 in Fig. 3, which is adapted to provide for a supplementary sound outlet, as will hereinafter be described. The bottom 13 is apertured, as at 15, the apertured portion being adapted to receive thereover a conventional sound propagating diaphragm 16. The sides 17 of the body are supported in conjunction with the frame 12 and are formed of ply wood in conformity with the conventional methods of forming grand piano cases. The laminations of the ply wood sides 17, as indicated in Fig. 4, are preferably less in number than those conventionally used in piano case manufacture. They are, however, steamed and glued into the desired shape, whereby they provide a laminated ply wood case having resonant characteristics similar to those of a piano case, whereby the case will resonate with the sound propagated from the cone 16 to amplify such sound and to provide harmonic stresses and tone qualities not otherwise attainable and not heretofore provided in conjunction with an electrical sound propagating instrument.

Within the confines of the sides 17, a transverse vertical wall 18 is provided, forming a radio apparatus compartment 19, the front of which is formed by a control panel 20 con-

stituting the front vertical portion of the cabinet. The bottom 13 extends forwardly thereof to provide a ledge 21 conforming to the forward extension of the key-board of the piano, but providing in this case a conventional hand rest and ledge for co-operation with the tuning dial 22 of the radio receiver. The radio apparatus is generally indicated as at 23 within the compartment 19.

Associated with the wall 18, a horizontal rearwardly extending shelf 24 is provided, dividing the rear portion of the cabinet into horizontal parallel chambers 25 and 26. The upper chamber 25 has mounted therein a turntable 29 and conventional pickup device 28, both of which are mounted on and supported by the shelf 24, which forms a motor board for the phonograph assembly. The shelf 24 is apertured, as at 28′, to provide for the mounting therethrough of the head 29′ of the sound propagating instrument 16. In the instance here shown and as preferable, the instrument 16 is of the conventional dynamic cone-like speaker type.

From the structure herein illustrated, it will be seen that the shelf 24 provides not only a motor board for the phonograph assembly, but its lower surface provides a baffle surface or baffle board for the loud speaker unit. As hereinbefore described, the unit is supported over the aperture 15 of the bottom 13. The space 14 between the bottom 13 and the frame 12 provides for the passage of sound waves from the baffle board directly to the room, while, at the same time, sound waves are propagated through the aperture 15 of the bottom. This combination provides unusual and unexpected efficiency in the propagation of sound waves and the relation of parts is such that the sound waves may impinge directly upon the inner face of the sides 17. The baffle board being directly connected at its rear and side edges with the sides 17, provides for sound vibrations therethrough to the sides 17, whereby the laminated structure thereof will result in tonal characteristics of the sound propagated conforming with the natural propagation from a stringed instrument, within a laminated casing such as a grand piano.

In order to provide a self-contained loop aerial within the cabinet, aerial wires 33 are provided in the space 14 shown in Fig. 3. The arrangement of such wires will be seen to provide a conventional loop aerial which forms a part of the apparatus, and will also be understood to be conveniently arranged, readily accessible and open to the surrounding air, and will not interfere with the sound reproduction. The invention is obviously not confined to this arrangement of the aerial, and, if desired, the conventional outdoor aerial may be used.

The structure is completed by the provision of a central fixed cover strip 30, with which hinged forward and rear sections 31 and 32 respectively are associated, the arrangement being such that the cover sections may be independently moved to provide extreme facility in the manipulation of the radio receiving apparatus 23 and for the operation of the phonograph assembly.

From the foregoing it will readily be seen that the present invention provides a novel, artistic radio cabinet, the general outlines of which are characteristic of those of a grand piano, the sides of which are formed of laminated material to provide characteristic sound propagation therefrom, and the inner arrangement being such that ample room is provided for a conventional radio receiving apparatus and for a conveniently accessible phonograph assembly. The inner arrangement further provides for the use of the motor board of the phonograph assembly as a baffle board for a dynamic speaker. The vertical partition 18 further provides for the prevention of vibration being received in the radio receiving apparatus compartment 19, whereby injury might result to the tubes thereof and distortion of the music thereby. It further provides for the direct impingement of sound waves from the propagating diaphragm to the laminated walls and provides a double sound outlet for the cone of the loud speaker.

The present invention thus provides a novel combination and interrelation of parts, it being understood that the invention is not specifically confined to the structural details herein presented, but that numerous changes, modifications and the full use of equivalents may be resorted to without departing from the spirit or scope of the invention as outlined in the appended claims.

What is claimed is:

1. A radio cabinet, comprising a body having side walls formed of laminated wood, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, a sound propagating instrument associated with said shelf, and an apertured bottom for said cabinet, said sound propagating instrument being associated with the aperture thereof, whereby sound waves may be propagated therethrough.

2. A radio cabinet, comprising a body having side walls formed of laminated wood, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, a sound propagating instrument associated with said shelf, and an apertured bottom for said cabinet, said sound propagating instrument being associated with the aperture thereof, whereby sound waves may be propagated therethrough, said bottom terminating short of one wall of said cabinet, whereby sound waves may be de-

flected between said side walls and the terminal edge of said bottom.

3. A cabinet internally divided by a horizontal phonograph motor board, a propagating unit mounted on the motor board, a radio apparatus in the body, there being two openings in the cabinet, one disposed opposite the propagating unit and one disposed opposite the motor board, and aerial wires mounted on the cabinet across the second mentioned opening and being connected with the radio apparatus.

4. A radio cabinet comprising a body having side walls formed of laminated wood, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, there being an opening in the shelf, a sound-propagating instrument disposed through the opening and associated with the shelf, an apertured bottom for said cabinet, the aperture in the bottom being disposed opposite the opening in the shelf, the said sound-propagating instrument being associated with the aperture whereby sound waves may be propagated therethrough, said bottom terminating short of one wall of said cabinet to form an opening in the bottom whereby sound waves may be deflected through the said opening in the bottom, a radio apparatus in the body, and aerial wires connected with the radio apparatus and being mounted on the cabinet across the opening in the bottom of the cabinet.

5. A radio cabinet comprising a body having side walls, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, a sound propagating instrument associated with said shelf, the cabinet having an apertured bottom, said sound propagating instrument being associated with the aperture whereby sound waves may be propagated therethrough.

6. A radio cabinet comprising a body having side walls, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, a sound propagating instrument associated with said shelf, the cabinet having an apertured bottom, said sound propagating instrument being associated with the aperture whereby sound waves may be propagated therethrough, said bottom terminating short of one wall of said cabinet whereby sound waves may be deflected between the side walls and the terminal edge of said bottom.

7. A cabinet internally divided by a horizontal phonograph motor board, a propagating unit mounted on the motor board, the motor board forming a resonator for the propagating unit, there being two openings in the cabinet, one disposed opposite the propagating unit and one disposed opposite the motor board.

8. A radio cabinet comprising a body having side walls, a horizontal shelf within said cabinet, a phonograph assembly mounted on said shelf whereby said shelf constitutes the motor board thereof, there being an opening in the shelf, a sound propagating instrument disposed through the opening and being associated with the shelf, the cabinet having an apertured bottom, the aperture in the bottom being disposed opposite the opening in the shelf, the said sound propagating instrument being associated with the aperture whereby sound waves may be propagated therethrough, said bottom terminating short of one wall of the cabinet to form an opening in the bottom whereby sound waves may be deflected through said opening in the bottom.

HENRY BERGHANE.