April 22, 1941. W. P. GRAY 2,239,170

RADIO APPARATUS

Filed April 26, 1939

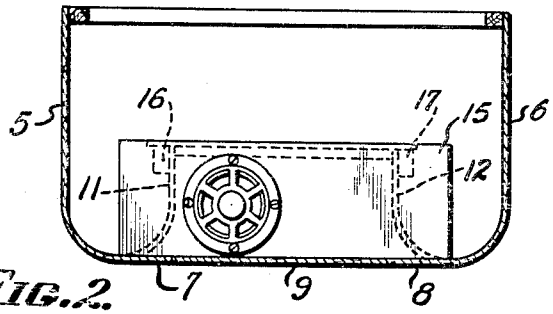


FIG. 2.

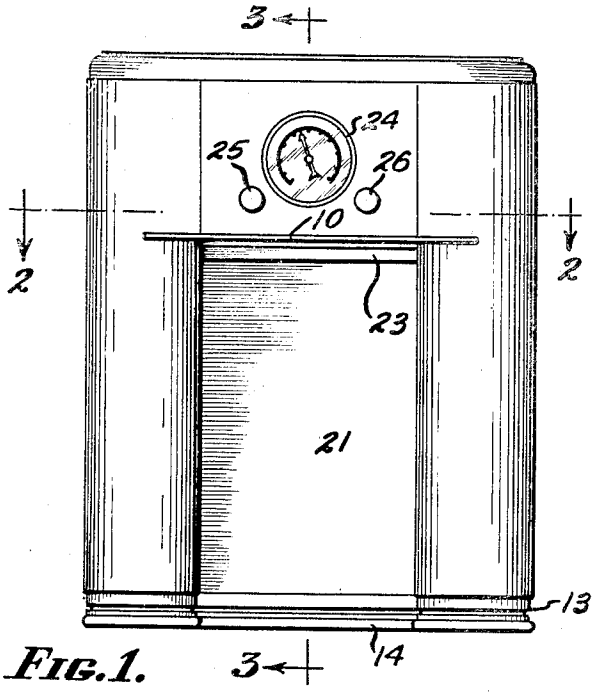


FIG. 1.

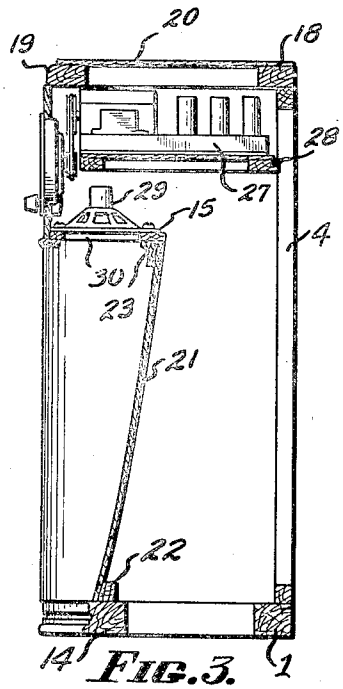


FIG. 3.

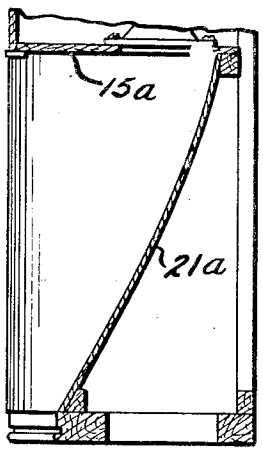


FIG. 4.

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UNITED STATES PATENT OFFICE

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RADIO APPARATUS

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Application April 26, 1939, Serial No. 270,169

4 Claims. (Cl. 181—31)

My invention relates to radio apparatus including reproducing means, and is particularly applicable to radio devices housed in cabinets of the so-called console type.

The fundamental object of my invention is the provision of a new type of cabinet which in conjunction with radio apparatus arranged in a certain way gives a superior reproduction of music and voice.

It is an object of my invention to provide in a radio cabinet means which enhances the faithfulness and quality of sound reproduction.

It is an object of my invention to provide a cabinet structure capable of being used with radio apparatus to attain the aforesaid effects which is both simple and inexpensive to construct and is decorative and pleasing in appearance.

These and other objects of my invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading this specification, I accomplish by that certain construction and arrangement of parts of which I shall now describe a preferred embodiment. For clearness reference is now made to the drawing wherein:

Figure 1 is a front elevational view of the exemplary form of my radio apparatus.

Figure 2 is a horizontal sectional view thereof taken along the line 2—2 of Figure 1.

Figure 3 is a vertical sectional view thereof taken along the line 3—3 of Figure 1.

Figure 4 is a partial vertical section showing a modification of the structure.

Briefly in the practice of my invention, I provide in a radio cabinet, preferably through not necessarily of the console type since my invention is applicable to smaller cabinets also, a structure in which a lower central portion of the radio cabinet is depressed with respect to the general level of the front of the cabinet and assumes a slanting position, approaching the said general level more nearly at the bottom of the cabinet than at the top of the recessed portion. The recessed panel terminates upwardly in a shelf-like structure which is horizontal or substantially so and to which the loudspeaker is mounted. The shelf is cut away in part at least over the area of the cone of the speaker, the speaker body extending above the shelf. In this way a combined chamber and baffle is provided at the front of the radio cabinet which has a peculiar effect in increasing the faithfulness and beauty of the reproduction of sound. Also since the aforesaid chamber begins at a point interspaced from the top of the cabinet, room is provided in the cabinet and above the said chamber for the chassis and appurtenances of the radio set proper, and on the front of the cabinet space is provided for the dial and controls of the radio set where this particular location of them is desired.

In the exemplary embodiment of my invention as shown in the several figures, I have shown a cabinet which not only is of simple and relatively inexpensive construction but also is beautiful and distinctly in the modern manner. The specific embodiment of my invention also is a cabinet which may be made, so far as the main exterior surfaces are concerned, substantially entirely of veneered plywood. It will be apparent, however, as the description proceeds that the particular style of cabinet which I have chosen as an exemplary embodiment does not constitute a limitation upon the fundamental aspects of my invention, and that certain novel features of my invention, as set forth in the appended claims may be embodied in cabinets of widely varying construction.

The cabinet as illustrated comprises a base frame 1 and a back frame 4, the relationship of which will be understood from the drawing. The sides of the cabinet and portions of the front are made of plywood elements 5 and 6 which are attached along one edge to the back frame, and extend forwardly about the base frame. In the top portion of the cabinet these plywood members approach each other as at 7 and 8 in the general plane of the front of the cabinet. Between them I insert another panel 9 to complete the top portion of the front of the cabinet. In the particular embodiment shown, this top portion of the front of the cabinets extends downwardly for between one-quarter and one-third of the total height of the cabinet, and terminates in a batten or molding member indicated at 10.

It will be evident that as a variant construction I may make the portions 5, 6 and 9 of a single piece of plywood, if desired. Thus the plywood may be split in the middle part way up from the bottom, and the material in the center may be curved backwardly to form the side portions of the recess.

Below this portion of the cabinet the ends of the plywood members 5 and 6 are bent inwardly as at 11 and 12. A cross sectional view of the cabinet in this portion (as indicated in dotted lines in Figure 2) would show a U-shaped configuration of the plywood members, each U having a shorter and a longer leg. Viewed from the front as in Figure 1, the two side portions of the front of the radio cabinet form interspaced

rounded columns. The base frame 1, which may be convoluted and finished to form an exterior base trim or molding as indicated at 13, will be recessed somewhat between the columns as indicated at 14. Surmounting the inwardly turned portions of the side pieces 5 and 6, I provide a shelf 15. The inwardly turned portions of the side members 5 and 6 may be fastened to frame members 16 and 17, which in turn are fastened at their lower ends to the base frame 1 and at their upper ends to the shelf 15, so as to retain the parts in the relationship shown.

In the particular exemplary embodiment I have provided a top frame 18 the edges of which are configured and finished to form an ornamental top edge molding 19, and which is surmounted by a panel of plywood or the like 20.

Examination of Figure 3 will show that the rear edge of the shelf 15 is further from the general plane of the front of the cabinet than is the recess 14 of the base frame. A panel 21 which again may be of plywood is carried downwardly from the rear edge of the shelf 15 to a point near the edge of the recess 14. At its lower edge it may be fastened to a batten 22 which in turn is fastened to the base frame and at its upper edge it may be fastened to a molding 23 which in turn is fastened to the under side of the shelf 15. Thus the panel 21 is not truly vertical but slopes backwardly at a substantial angle from its lower edge to its upper edge.

In its broadest aspect, my invention contemplates the provision of a recess in the cabinet which recess has vertically extending side members and a rear member sloping backwardly from the bottom toward the top, said back member terminating in a substantially horizontal shelf with respect to which, as has already been indicated, the loudspeaker is mounted. It will thus be evident that changes may be made in the cabinet construction without departing from the spirit of this broadest aspect of my invention. Thus the configuration of the side members of the cabinet, and whether they are round or rectangular or have other shapes in cross section, or are plain or configured or curved, does not form a limitation thereon. Also modifications may be made in the particular cabinet which I have illustrated, and which is one in which the dial 24 and the control members 25 and 26 are located on the front of the cabinet in the panel portion 9. Where it is desired to provide a cabinet in which the controls are concealed, or where it is desired to embody in the cabinet phonographic apparatus as well as radio apparatus, the top frame 18 or the top panel 20 may be hinged and the controls located in a hidden position.

Now since the recess referred to and the shelf 15 which surmounts it is located in the cabinet in a position interspaced from the top thereof, room is provided for the chassis and appurtenances of the radio set within the cabinet. I have shown the chassis 27 located upon a supplementary shelf-like frame 28 mounted in the cabinet sufficiently above the shelf 15 to permit a loudspeaker indicated generally at 29 being located therebetween. It is, however, within the scope of my invention to carry the shelf 15 across the horizontal section of the cabinet in such a way as to provide sufficient space to mount the radio chassis directly thereon. This is feasible especially since, as I shall presently point out, it is preferred to mount the loudspeaker off-center of the recess.

The loudspeaker 29 is as aforesaid located on the shelf 15 and fastened thereto; and the shelf 15 is cut away as at 30 over all or a portion of the area of the cone speaker. The speaker therefore speaks through the shelf and the shelf and the baffle 21 together with the side wall portions of the radio cabinet form an efficient baffle for the loudspeaker. Additionally, the shelf 15, the panel 21 and the adjacent side portions of the recess form a chamber which not only gives excellent propagation of the sound outwardly into the room, but also augments and renders more faithful the reproduction of the sound.

The degree to which the panel is tilted can be considerably varied. I have, for example, shown in Figure 4 a construction in which the shelf 15*a* is carried horizontally across the cabinet, and in which the panel 21*a* extends from near the front of the cabinet at its lower end to near the rear of the cabinet at its upper end, having a considerably greater angle to the vertical than that illustrated in Figure 3. For different circumstances different angularities of the panel seem to give the best results. I have found also that instead of centering the loudspeaker in the shelf, it is best to keep the loudspeaker well to one side of the recess and where the shelf is quite wide as in Figure 4 to keep it near the panel 21*a*.

Modifications may be made in my invention without departing from the spirit of it. Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a structure of the character described, a cabinet having side and top portions and a front portion extending across it near the top, said cabinet having in its lower portions, front parts at each side and inwardly extending parts defining the side portions of a recess, said recess having a back panel sloping rearwardly from bottom to top and terminating in a substantially horizontal shelf substantially at the base of said front portion which extends across said cabinet to support a loudspeaker mounted within said cabinet and on said shelf, said shelf being cut away over a portion at least of the area thereof covered by said loudspeaker whereby said speaker may speak through said shelf, the rear of said cabinet being open.

2. In a structure of the character described, a cabinet comprising base, top and back frames, panel members for said cabinet attached to said frame members and forming sides for said cabinet and portions of the front thereof, said panel members being inwardly turned at the front of said cabinet so as to approach the back frame thereof and so as to form the side walls of a recess therein, a shelf in said cabinet at the top of said recess and a panel closing the rear of said recess and extending from said shelf to said base frame at an angle to the vertical, said shelf being adapted to support a loudspeaker located within said cabinet, and said shelf being cut away in part at least over the area thereof covered by said loudspeaker.

3. In a structure of the character described, a cabinet comprising base, top and back frames, panel members for said cabinet attached to said frame members and forming sides for said cabinet and portions of the front thereof, said panel members being inwardly turned at the front of said cabinet so as to approach the back frame thereof and so as to form the side walls of a recess therein, a shelf in said cabinet at the top of said recess and a panel closing the rear of said recess and extending from said shelf to

said base frame at an angle to the vertical, said shelf adapted to support a loudspeaker located thereon within said cabinet and said shelf being cut away in part at least over the area thereof covered by said loudspeaker, said recess terminating short of the top of said cabinet, and a member bridging the space between said side members in the front area of said cabinet located above said recess.

4. A structure as claimed in claim 3 in which said panel forming the back of said recess slopes rearwardly from a position at the bottom near the front of said cabinet to a position at the top near said back frame.

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