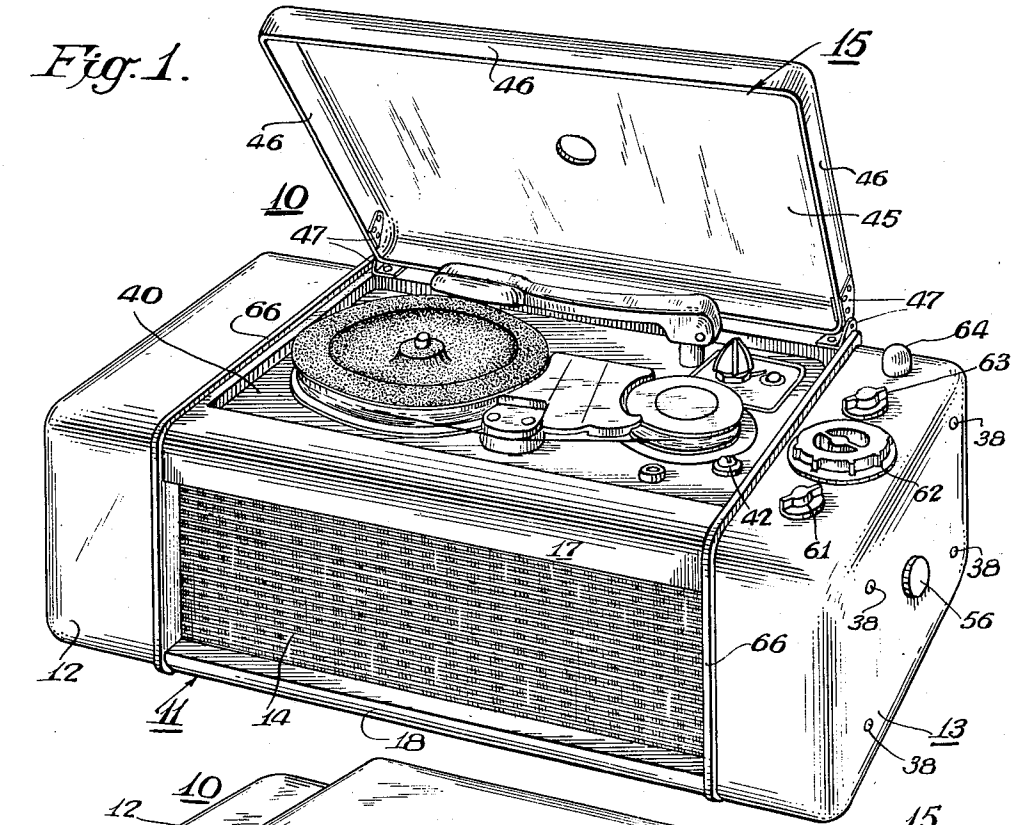
June 19, 1951 V. I. ZELOV 2,557,244

KNOCKDOWN RADIO CABINET

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Fig. 1.



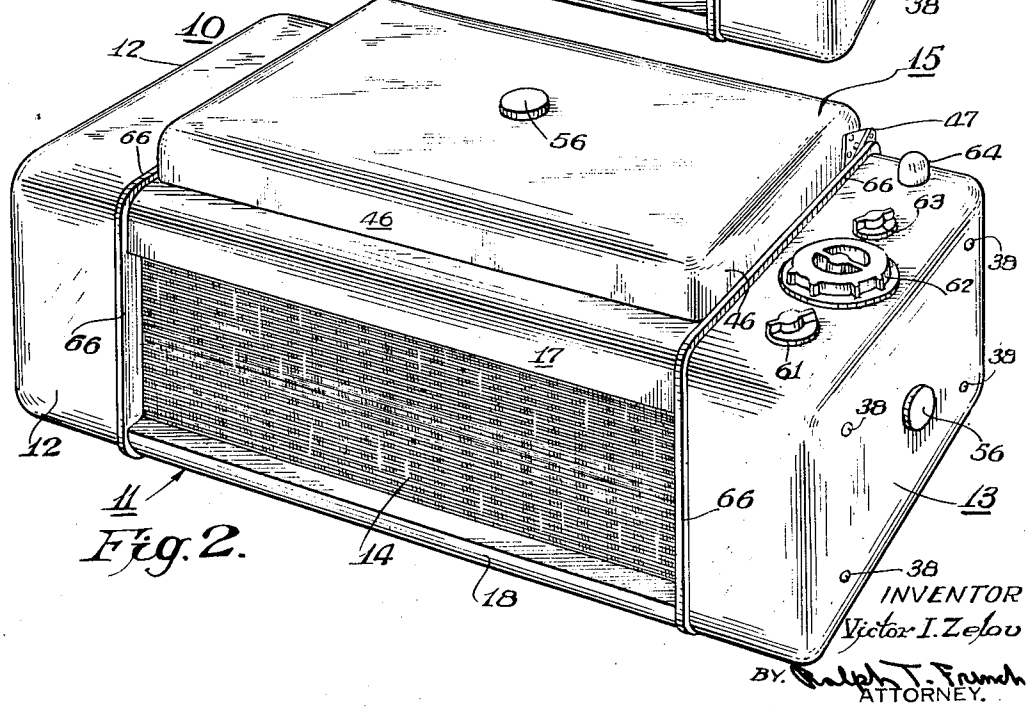




Fig. 2.

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KNOCKDOWN RADIO CABINET

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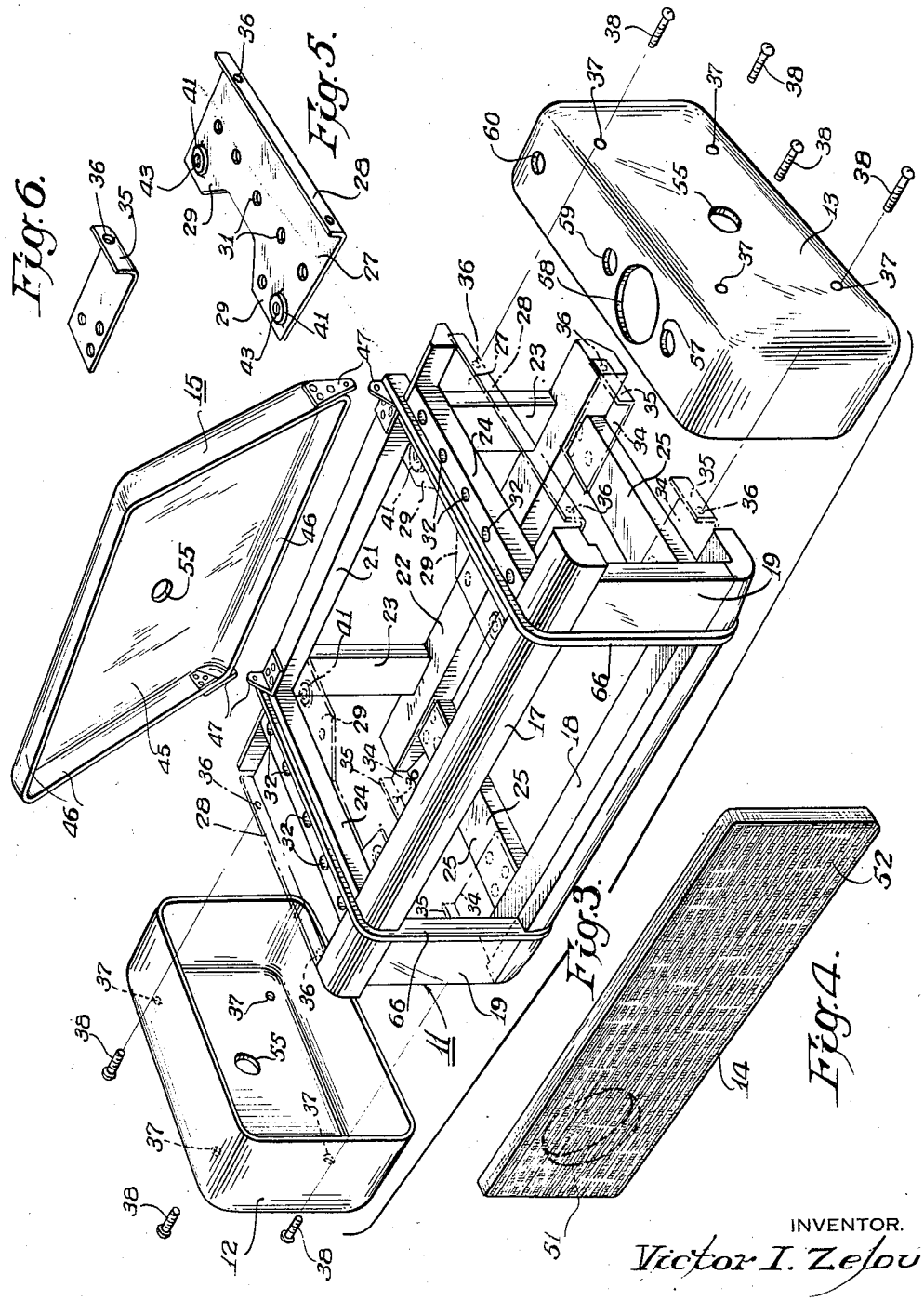


Fig. 6.

Fig. 5.

Fig. 3.

Fig. 4.

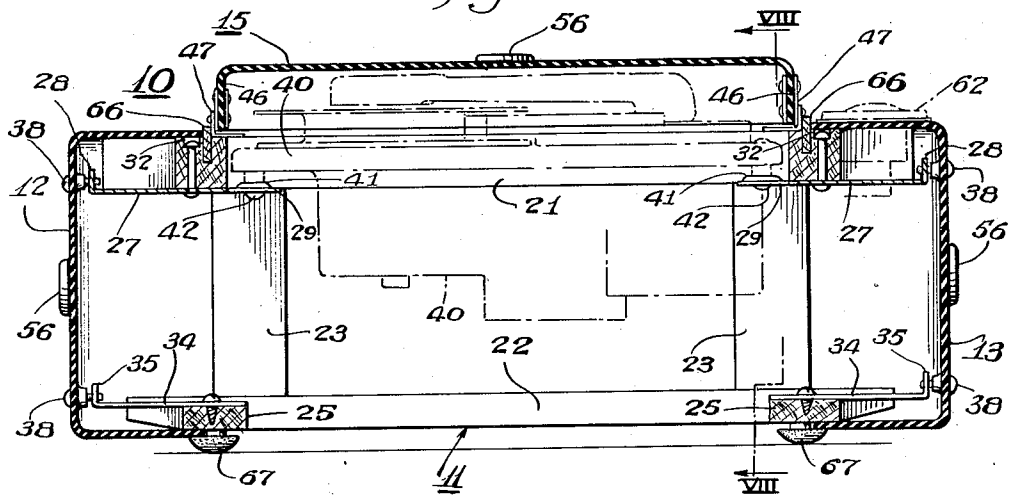
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KNOCKDOWN RADIO CABINET

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Fig. 7.



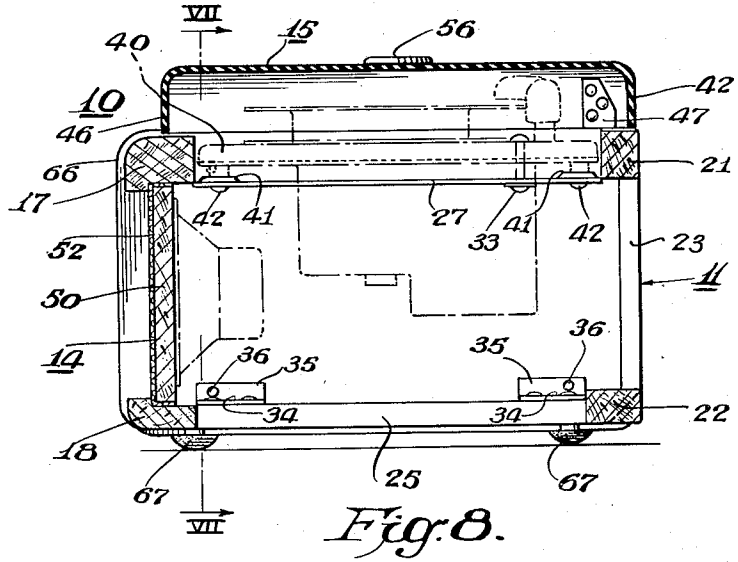




Fig. 8.

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Patented June 19, 1951 2,557,244

# UNITED STATES PATENT OFFICE

2,557,244

## KNOCKDOWN RADIO CABINET

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Application December 10, 1947, Serial No. 790,758

5 Claims. (Cl. 312—7)

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This invention relates to housings or cabinets, and has for an object to provide novel apparatus of this character.

Heretofore housings or cabinets for electronic apparatus such as radios, phonographs, television apparatus, magnetic recorders and reproducers, etc., have usually been constructed entirely of wood or metal. Where the apparatus involved is intended primarily for use in homes and offices, as is the case with the devices mentioned above by way of example, wood cabinets have been preferred because of the finer finishes and decorative effects obtainable with woods and their grained surfaces. This has been particularly true with respect to the large table models and the even larger console models, usually containing combinations of radios, phonographs, magnetic recorders and reproducers, and television receivers.

During recent years the industries involved turned to the use of plastics in addition to wood in the cabinets. However, it soon was found to be impractical to use this material for any but the smaller table model sizes. One of the principal difficulties was the high degree of accuracy required in making the tools for molding the larger sizes cabinets. When the tools were made sufficiently accurate to produce commercially satisfactory cabinets, the tooling costs were exorbitant.

Another primary difficulty was the wastage resulting from having to scrap an entire cabinet due to the existence of a defect in one part thereof only.

A further difficulty in the use of plastic cabinets has been the lack of rigidity and stability necessary when several components are mechanically and electrically related, as for example, in radio-phonograph combinations.

To overcome the above and other difficulties, it is herein proposed to utilize an open framework, preferably of wood, and to close the openings therein with separate panels of plastic, metal, composition board, or other manufactured material having the desired characteristics. By supporting the apparatus to be housed directly from the framework, such apparatus can be rendered accessible for repair or inspection by the removal of appropriate panels.

Therefore, an object of the invention is to provide a cabinet fabricated of a novel combination of wood and a manufactured material such as plastic, metal, etc.

A further object of the invention is to provide a cabinet which can be made with relatively low

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tooling costs, is rugged, and is of pleasing appearance.

An additional object of the invention is to provide a cabinet having a partially exposed frame of wood and surface panels of manufactured material.

Yet another object of the invention is to provide, in a cabinet for housing electronic equipment, a wooden frame and plastic wall members cooperating with the frame to effect an insulating housing for the electronic equipment, which housing may have desired acoustical characteristics by variations in the shape, thickness or material of the plastic wall members.

These and other objects are effected by the invention as will be apparent from the following description and claims, taken in accordance with the accompanying drawings, forming a part of this application, and in which;

Fig. 1 is a perspective view of a cabinet constructed in accordance with the present invention, with the cover raised;

Fig. 2 is a view similar to that of Fig. 1, but showing the cover in closed position;

Fig. 3 is an exploded perspective view of the structure shown in Figs. 1 and 2;

Fig. 4 is a perspective view of the front panel or wall of the cabinet;

Fig. 5 is a perspective view of an upper supporting bracket, shown in phantom in the exploded view of Fig. 3;

Fig. 6 is a perspective view of a lower supporting bracket, shown in phantom in the exploded view of Fig. 3;

Fig. 7 is a longitudinal sectional view through the cabinet, taken along the line VII—VII of Fig. 8, looking in the direction indicated by the arrows; and,

Fig. 8 is a transverse sectional view through the cabinet, taken along the line VIII—VIII of Fig. 7, looking in the direction indicated by the arrows.

Referring now to the drawings more in detail, the reference character 10 indicates, in its entirety, a cabinet constructed in accordance with the present invention, and shown, for purposes of illustration, as housing a combination radio, record player, and wire recording and reproducing apparatus.

The cabinet 10 comprises a composite frame, indicated generally by the reference character 11; left and right end closures 12 and 13, respectively; a front panel or wall 14; and a top closure or cover 15, movable between an open position

shown in Fig. 1, and a closed position shown in Fig. 2.

The composite frame 11 has herein been illustrated as constructed of wood, although it will be apparent that other materials may be used, for example, plastic, metal, composition materials, etc. In the preferred form, herein illustrated, the frame 11 comprises a pair of vertically-spaced upper and lower horizontal front members 17 and 18, respectively, maintained in their spaced relation by a pair of vertical front posts 19, and a corresponding pair of vertically-spaced upper and lower horizontal rear members 21 and 22, respectively, maintained in their spaced relation by a pair of vertical rear posts 23. Longitudinally-spaced pairs of upper and lower transverse members 24 and 25, respectively, retain the upper and lower front members 17 and 18 spaced forwardly of the upper and lower rear members 21 and 22.

It will be apparent that the above-described frame provides a box-like construction of extreme ruggedness and simplicity, open at all six sides.

It will be noted from consideration of Figs. 3 and 7 that the rear posts 23 and the upper and lower transverse members 24 and 25 are positioned inwardly with respect to the terminal portions of the horizontal front and rear members 17, 18, 21 and 22, with the result that they tend to divide the framework lengthwise into end portions and an intermediate portion therebetween.

The left and right ends are covered by closure members 12 and 13, respectively, formed of manufactured material, for example, plastic, metal, glass, solidified plastic-impregnated fabrics, or various composition boards, etc. The end closure members preferably are of box-like construction, disposed in telescopic relation to the end portions of the frame and providing housings for electronic equipment, for example, tubes, condensers, resistors, etc., requiring more frequent repair or replacement than other parts of apparatus of the character previously mentioned.

Secured to the under side of each of the upper transverse members 24 is a bracket 27 (Figs. 3 and 5) having an upturned flange 28 at its outer edge and a pair of spaced ears 29 at the opposite ends of its inner edge, these ears 29 being disposed inwardly of the transverse members 24, and the upturned flanges 28 being disposed outwardly of the ends of the frame. Preferably, the brackets 27 have a plurality of openings 31 therethrough underlying alined openings 32 in the transverse members 24, and two or more of these pairs of alined openings in each bracket and associated transverse member may be used for the passage of means such as screws or bolts 33 (Fig. 8) for securing the brackets to the associated transverse members.

Secured to the upper surfaces of each of the lower transverse members 25 are a pair of arms 34 (Figs. 3 and 6) having upturned flanges 35 at their outer ends, these flanges lying in the same vertical planes that contain the flanges 28 of the brackets 27. The flanges 28 and 35 have openings 36 therethrough, alined with openings 37 in the end closure members 12 and 13, for the passage of bolts 38, or other suitable securing means, by which the end closure members are detachably connected to the frame 11.

As previously mentioned, when the cabinet is used to house electronic apparatus, parts most likely to require repair or adjustment may be located within the end portions of the frame where they can be readily rendered accessible by removal of one or both of the end closure members 12 and 13, through withdrawal of the securing bolts or screws 38.



Where the cabinet contains a phonograph and/or a magnetic recorder and reproducer, the intermediate portion of the cabinet could well house the phonograph turntable motor, loud speaker, play and rewind motors for magnetic recording and reproduction, and associated mechanism. The phonograph panel 40, shown in full lines in Fig. 1 and in phantom in Fig. 7, which carries the turntable and tone arm thereabove and the motor and associated mechanism therebelow, may be spring-supported at its four corners on the four ears 29 of the brackets 27. Coned coil springs (not shown) may be disposed between the ears and the under surface of the panel, being retained in position by the bosses 41 on the ears 29, and by bolts or screws 42 extending through the panel 40 and alined openings 43 at the centers of the bosses 41 on the ears.

The top closure member 15, preferably of manufactured material, is dish-shaped with a substantially flat top 45 and side flanges 46 depending therefrom. Hinges 47 provide for movement of the cover 15 from the open position, shown in Fig. 1, to the closed position, shown in Fig. 2. As best illustrated in Figs. 1, 2, 7 and 8, the lower edges of the cover flanges 46 rest on the frame members 17, 24 and 21 when the cover is in closed position. The height of the flanges is sufficient to provide space therebetween for the phonograph turntable and tone arm and any other devices positioned above the phonograph panel 40.

As indicated in Fig. 8, the loud speaker may be mounted in the inner surface of the cabinet front wall or closure member 14, this closure member comprising a panel 50 of wood, plastic, metal or other suitable material having an opening 51 therein alined with the front of the speaker, and the entire panel being covered with suitable fabric or other woven material 52 providing a porous covering for the opening 51.

In the cabinet herein illustrated, the end and top closure members 12, 13 and 15, respectively, have been shown as made of plastics, and incident to molding these parts, sprues are formed at the centers which must be removed, leaving openings 55 to be closed by plugs 56. The use of plastic wall members, in a cabinet housing sound-reproducing equipment, makes obtainable optimum acoustical characteristics, by variations in the shape, thickness or material of the plastic.

Where radio apparatus is housed within the righthand end closure 13, openings 57, 58, 59 and 60 may be provided in the top thereof for passage of mechanical connections between control knobs 61, 62 and 63 and elements of the radio mechanism, and between the bulb 64 and its associated electrical circuit.

In the preferred construction illustrated, portions of the frame members 17, 18, 19, 24 and 21 are exposed between adjacent edges of the various closure members or panels, and these frame members may be variously shaped to produce a pleasing appearance, for example, the wooden bead 65 may be formed on, or set into, certain of the frame members, and the members 17 and 18 may be formed as quarter rounds.

It will be apparent that with the exposed portions of the wooden frame members properly finished, and the top and end closure members made of suitably colored materials, extremely handsome and attractive cabinets will result.

While in the construction herein illustrated, the back and bottom of the cabinet have been left open, it will be apparent that they may be closed by members similar to those disclosed in connection with the cabinet ends, top or front.

If desired, feet 67 of rubber or other material may be provided beneath the four corners of the cabinet (Figs. 7 and 8), and a handle (not shown) may be secured to the cabinet to facilitate carrying it, when it is intended for portable apparatus.

While the invention has been illustrated and described in connection with a cabinet housing radio, phonograph and magnetic recording and reproducing apparatus, inasmuch as the insulating qualities of the wood and plastic combination have special utility with such apparatus, it is believed obvious that the present invention will be found useful in many other fields and arts, and consequently, it is desired that the invention be limited only to the extent specified in the claims or required by the prior art.

What is claimed is:

1. In a radio cabinet, a frame comprising vertically-spaced upper and lower front members, vertically-spaced upper and lower rear members positioned rearwardly of said front members, and strut members connecting said front members and said rear members; box-like plastic closure members telescoped over the ends of the frame with the bottoms of the box-like members constituting end walls of the cabinet and the sides of the box-like members constituting portions of the cabinet top, bottom, front and rear walls, one of said box-like plastic closure members constituting an electrically-insulated housing for radio apparatus; and a woven member and supporting means therefor cooperating with the frame and the sides of the box-like members which constitute portions of the cabinet front wall to provide the cabinet front, said woven member constituting a porous screen for the radio speaker.

2. In a cabinet for a combination radio and record player, a fabricated box-like wooden frame defining end portions for housing radio apparatus and an intermediate portion for housing record-playing apparatus, box-like closure members of manufactured material disposed in telescoping relation to said frame end portions and constituting the exterior walls of the corresponding end portions of the cabinet, and a cover member of manufactured material disposed in overlying relation to the intermediate portion of the frame and constituting the exterior top of the corresponding portion of the cabinet, said cover being movable between open and closed positions and having the general shape of an inverted box, with the top surface of the cover which corresponds to the bottom of the box disposed materially above the uppermost portion of the frame, whereby the space between the cover side walls when the cover is closed accommodates record-playing apparatus which is accessible when the cover is in open position.

3. In a cabinet for a combination radio, record player and magnetic recorder and reproducer; a fabricated box-like frame defining end portions for housing electronic apparatus and an intermediate portion for housing record-playing apparatus and magnetic recording and reproducing apparatus including a speaker; box-like closure members of manufactured material enclosing said end portions of the frame; a woven member and supporting means therefor cooperating with the frame and the end closure members to provide the cabinet front wall, said woven member constituting a porous screen for the speaker; and a closure member of manufactured material covering the intermediate portion of the box-like frame and including a top portion and side flanges depending therefrom, the bottom edges of said flanges resting on the frame when the cover member is in cabinet-closed position, with the space between said flanges accommodating record-playing apparatus and magnetic recording and reproducing apparatus and magnetic recording and reproducing apparatus which is accessible when the cover is in cabinet-opening position.



4. In a cabinet or the like, a fabricated frame including vertically-spaced upper and lower front members, vertically-spaced upper and lower rear members spaced rearwardly of said front members, longitudinally-spaced pairs of upper and lower transverse members joining said front and rear members, and vertical posts joining the upper and lower members in their vertically-spaced relation; a pair of end closure members of manufactured material carried by said frame and having continuous integral flanges constituting portions of the corresponding exterior surfaces of the cabinet; and a cover of manufactured material closing the space between the upper front and rear wooden members and having a continuous integral peripheral flange constituting portions of the exterior portion of the cabinet; the longitudinally-spaced pair of upper transverse members which join the front and rear members being disposed inwardly of the ends of said front and rear members, and the end closure members having vertical end walls positioned outwardly of the ends of said front and rear members and integral top flanges extending to and overlapping said upper transverse members.

5. Structure as specified in claim 4, wherein the upper and lower front members and the upper transverse members are wooden and the side edges of the cover are spaced inwardly of the adjacent edges of the top flanges of the end closure members, whereby portions of said wooden transverse members are exposed between said cover and flanges.

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