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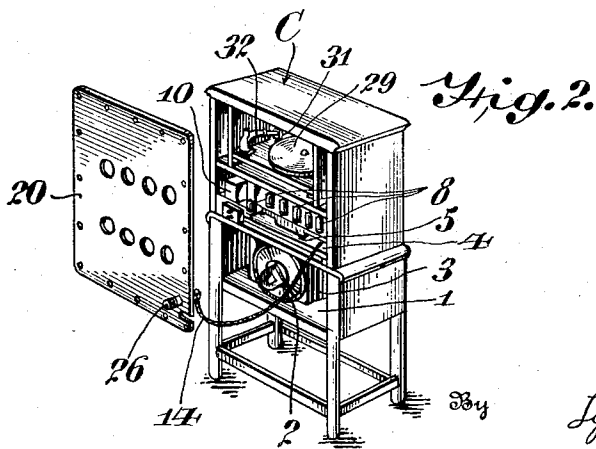
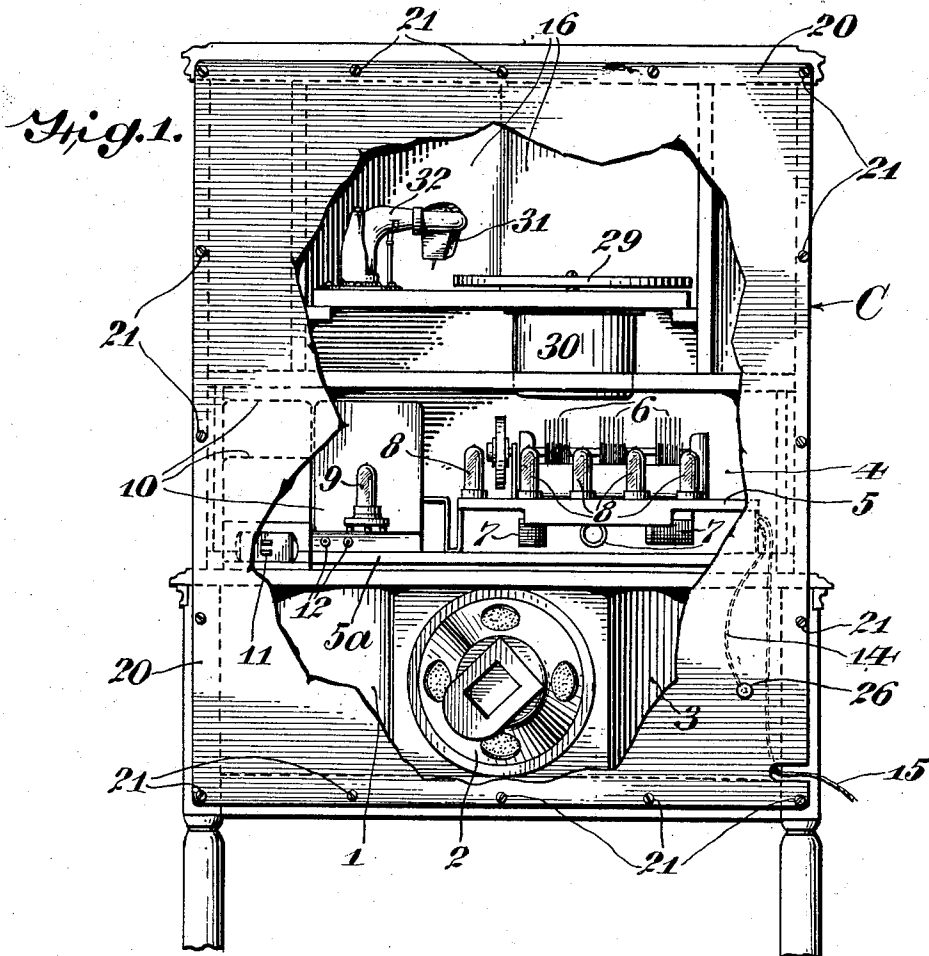
C. A. CLARKE

1,807,386

CABINET FOR RADIO RECEIVING APPARATUS

Filed Oct. 10, 1928

2 Sheets-Sheet 1



Inventor

Carole A. Clarke,

Lyman D. Oberlin

his Attorney

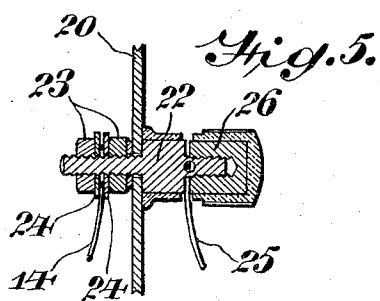
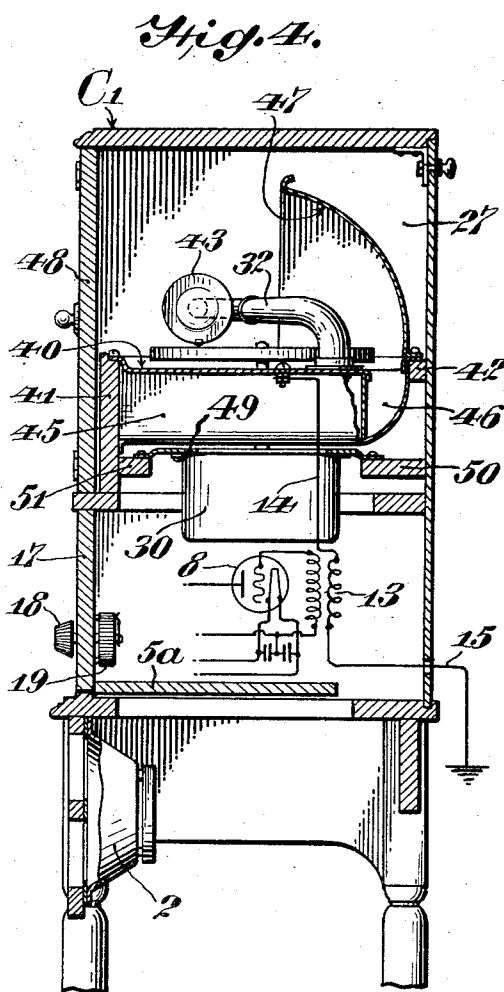
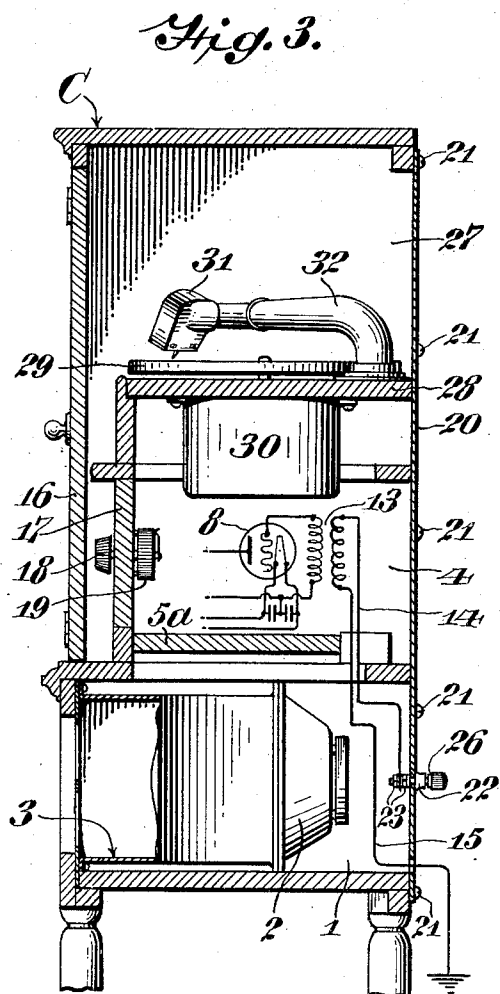
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CABINET FOR RADIO RECEIVING APPARATUS

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Inventor

Carole A. Clarke,

By

Lyman D. Oberlin

his Attorney

UNITED STATES PATENT OFFICE

CAROLE A. CLARKE, OF MOORESTOWN, NEW JERSEY, ASSIGNOR TO VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY

CABINET FOR RADIO RECEIVING APPARATUS

Application filed October 10, 1928. Serial No. 311,516.

My invention relates to a casing, cabinet or housing containing radio receiving apparatus, the aforesaid casing, cabinet or housing also serving as a closure structure for talking machine mechanism, if desired.

In accordance with my invention, radio receiving apparatus of any desired character is disposed in a casing comprising a metallic wall functioning as an absorber or a collector of electro-magnetic waves, electro-radiant energy or radio signals for said radio receiving apparatus.

Further in accordance with my invention, the aforesaid metallic wall may be one which divides the casing into compartments or one which constitutes an exterior casing wall.

More particularly, in accordance with a preferred form of my invention, the aforesaid metallic wall is of sheet material, generally rectangular in configuration and serves as the rear vertical wall of a casing containing radio receiving apparatus and, if desired, talking machine mechanism.

Further in accordance with my invention, the rear, vertical, metallic wall of a casing containing radio receiving apparatus, has the dual function of serving as a collector of electro-radiant energy for said radio receiving apparatus and as a closure member for the rear of said casing, and particularly, the compartment or chamber containing said radio receiving apparatus.

My invention resides in the casing or cabinet, arrangement of parts, and features of construction of the character hereinafter described and claimed.

For an illustration of some of the forms my invention may take, reference is to be had to the accompanying drawings in which:

Figure 1 is a rear elevational view, partly broken away, of a casing constructed in accordance with my invention.

Fig. 2 is a perspective view of the casing shown in Fig. 1.

Fig. 3 is a transverse vertical sectional view of the casing shown in Fig. 1.

Fig. 4 is a transverse vertical sectional view of a casing illustrative of another embodiment of my invention.

Fig. 5 is a detailed view of the antenna binding post.

Referring to Figs. 1, 2, and 3, C is a casing, cabinet or housing generally rectangular in configuration and hence comprising spaced, parallel side walls, top and bottom walls, and front and rear walls.

In the example illustrated, the aforesaid casing comprises a lower compartment 1 receiving a sound-amplifying or -producing device 2 transmitting sound waves, in the example shown, to the front of the casing C through suitable horn structure 3.

Overlying the compartment 1 is a second compartment 4 containing, in the example shown, radio receiving apparatus of any suitable or desired character. As structurally indicated in Fig. 1, said radio receiving apparatus is supported on a shelf 5, supported by a base member 5a, and having a plurality of tuning condensers 6 disposed thereon, the rotors of which are mounted on a single shaft adapted for manual operation, as well understood in the art. As illustrated, base member 5 also supports a plurality of radio frequency transformers 7 and a plurality of vacuum tubes 8 functioning in any well known or desired manner for receiving and amplifying electro-radiant energy.

Disposed to one side of the compartment 4 is a suitably supported rectifying vacuum tube 9 with which is associated apparatus such as fixed condensers, choke coils, a power transformer, etc., all of the latter being disposed within suitable containers 10. A switch 11 is provided for controlling the passage of alternating current to the aforesaid power transformer while a pair of jacks 12 are provided for connection to conductors, not shown, which lead to the sound-producing device 2.

As diagrammatically illustrated in Fig. 3, the aforesaid radio receiving apparatus comprises a coupling transformer 13, one winding of which has terminals to which are connected, respectively, an antenna conductor 14 and a ground conductor 15. The other winding of transformer 13 is connected in the input circuit of one of the vacuum tubes 8 which, as shown, constitutes the first stage

tube for amplifying radio frequency energy. The output circuit of the aforesaid tube 8 is related to the other tubes of the vacuum tube system in any suitable manner, not shown.

5 In the example illustrated, the front of casing C comprises one or more hinged doors 16 which, when opened, permit access to a panel or wall 17 containing suitable knobs or operating members for controlling the radio receiving apparatus, only one knob 18 being shown on the drawings. Panel 17, ordi-
10 narily, supports suitable parts of the radio receiving apparatus of which a rheostat 19 is shown on the drawings.

15 In accordance with my invention, the wall structure of casing C and particularly that of the radio compartment 4 thereof comprises a plate 20 of sheet metal, as steel, which is secured, preferably detachably by screws
20 21, to the adjacent wooden or non-metallic casing walls. By preference, plate 20 is generally rectangular in configuration and forms the rear wall of casing C. To said plate 20 is suitably secured the aforesaid
25 antenna conductor 14, the plate 20, therefore, having the dual function of serving as a closure member for the casing C and its radio compartment 4, and as a collector of electro-radiant energy for the radio receiving
30 apparatus, the conductor 15 of which may be passed to ground through a suitable passage or opening in said plate 20.

As illustrated particularly in Fig. 5, binding post structure may be utilized for connecting the antenna conductor 14 to the plate
35 20, said binding post structure comprising a metallic member 22 disposed on the exterior surface of the wall 20 and having a threaded shank projecting interiorly of the casing
40 C, said shank having metallic nuts 23 threaded thereto between which are disposed metallic washers 24 having the conductor 14 fitted therebetween. The member 22 may also
45 comprise a second threaded shank preferably drilled for the reception of a conductor 25 which may lead to some other collector of electro-radiant energy, as an antenna, not
50 shown, of the usual character. Conductor 25 may be held in the position shown in Fig. 5 by a nut 26 threaded to said second shank of member 22.

If desirable, the casing C may comprise a third compartment 27, containing talking machine mechanism and bounded in part by
55 a motor-board 28 supporting a turntable 29 and its operating motor 30. Coacting with a talking machine record disposed on the turntable 29 is a suitable pick-up device 31 carried for oscillatory movement by an arm
60 32. A varying electrical current produced in the pick-up device 31 may be suitably amplified and utilized to actuate the sound-producing device 2.

With a construction of the character last
65 described, the aforesaid metallic plate 20, be-

sides serving as a closure member for the radio compartment and as a collector of electro-radiant energy for the therein-contained radio apparatus, has the additional function of serving as a closure member for that compartment within which the talking machine mechanism is disposed.

Referring to Fig. 4, there is illustrated another form of my invention wherein a metallic wall or member, serving as a collector of electro-radiant energy is disposed within, or transversely of, the casing or cabinet rather than in its exterior wall structure.

Thus, in Fig. 4, the rear wall of casing C1 is formed of wood or non-metallic material the same as are the other walls of said casing C1 while disposed transversely thereof and forming the lower wall of chamber 27 is a member 40 supported by the members 41 and
85 42. In accordance with my invention, member 40 is formed of sheet-like metallic material and serves as a turntable support and also as a collector of electro-radiant energy for the radio receiving apparatus, the antenna conductor 14 of which is suitably connected thereto as indicated.

In the example illustrated, the oscillatory arm 32 is hollow and transmits sound waves from the acoustical sound box 43 to horn structure 45 positioned beneath the motor board 40. The sound waves then pass along a passage 46 and are directed by horn structure 47, positioned above the member 40, through the compartment 27 from which they emerge through the doors 48 when the latter are open.

In the example shown, the horn structures 45 and 47 are formed of suitable sheet metal, such as steel, conductively related to the member 40. This arrangement is desirable since the efficiency of the member 40 as a collector of electro-radiant energy is thereby increased.

With the construction illustrated in Fig. 4, the turntable operating motor 30 is supported, not by the member 40, but by a supplementary plate 49, bridged across members 50 and 51 carried by the walls of casing C1.

In Fig. 4, it will be observed that the panel 17 is positioned differently than in Fig. 3, since, in said Fig. 4, the panel 17 forms a part of the front wall structure of the casing C1. Moreover, with an arrangement of the character illustrated in Fig. 4, the sound-producing device 2 is positioned, not in a separate compartment, but below the bottom casing wall.

In Fig. 2, the metallic plate 20 forming the rear wall of casing C is shown as detached from the other casing walls, the antenna conductor 14 being connected thereto. If desired and as illustrated in Fig. 2, the plate 20 may be perforated in a plurality of regions to thereby ventilate the casing C and particularly the radio compartment 4 thereof.

If desired, the plate 20 may be covered on

its exterior surface with a thin sheeting or veneer of material simulating the appearance of the other walls of casing C.

In accordance with my invention, a metallic plate, or equivalent, constitutes (1) a structural part of a casing or cabinet containing radio receiving apparatus inasmuch as it serves either as a part of the casing or cabinet wall structure, as a support for mechanism contained within said casing or cabinet, or as a wall dividing said casing or cabinet into compartments, and (2) a collector of electro-radiant energy for radio receiving apparatus disposed within said casing or cabinet. With an arrangement of the character described, satisfactory radio reception is obtained, particularly with respect to the so called "local" stations.

My invention, therefore, is not to be restricted to the exact embodiment shown in the accompanying drawings and foregoing specification since the apparatus of my invention is capable of other and varied applications which will be apparent to those skilled in the art to which it pertains. My invention, therefore, is not to be limited except insofar as is necessitated by the prior art and by the spirit of the appended claims.

What I claim is:

1. The combination with radio apparatus of a casing therefor, the wall structure of the casing including a metallic plate constituting the coupling between said apparatus and an electro-radiant energy transmission medium and acting as a closure member for said casing.

2. The combination with radio receiving apparatus, of a casing for said apparatus, the wall structure of said casing comprising a detachable metallic plate serving as a collector of electro-radiant energy for said radio receiving apparatus and as a closure member for said casing.

3. The combination with radio receiving apparatus, of a casing comprising fixed vertical side walls for said apparatus, and a vertical metallic plate detachably secured to said side walls, said plate serving as a collector of electro-radiant energy for said receiving apparatus and as a closure member for the rear of said casing.

4. The combination with radio receiving apparatus, of a casing for said apparatus, a portion of the wall of said casing being constituted by a metallic plate, and binding post structure carried by and conductively related to said metallic plate, said binding post structure being connected to the antenna circuit of said radio receiving apparatus and comprising means for connection to an antenna.

5. The combination with radio receiving apparatus and a casing for said apparatus, of a metallic plate constituting one of the walls of said casing, said plate being detachably secured to said casing whereby it con-

stitutes a movable closure therefor, and means connecting an input terminal of said radio apparatus to said plate whereby it serves as a collector of radiant energy for said apparatus.

6. The combination with radio receiving apparatus and a casing for said apparatus, of a metallic plate constituting one of the walls of said casing, said plate being detachably secured to said casing whereby it constitutes a movable closure therefor, and connecting means secured to said plate and extending on opposite sides thereof, an input terminal of said apparatus being connected to the inner end of said connecting means whereby said plate constitutes a collector of radiant energy for said apparatus, the outer end of said connecting means being adapted for the connection of an antenna to said plate.

In testimony whereof I have signed this specification this 8th day of October, 1928.

CAROLE A. CLARKE.