

Dec. 6, 1938.

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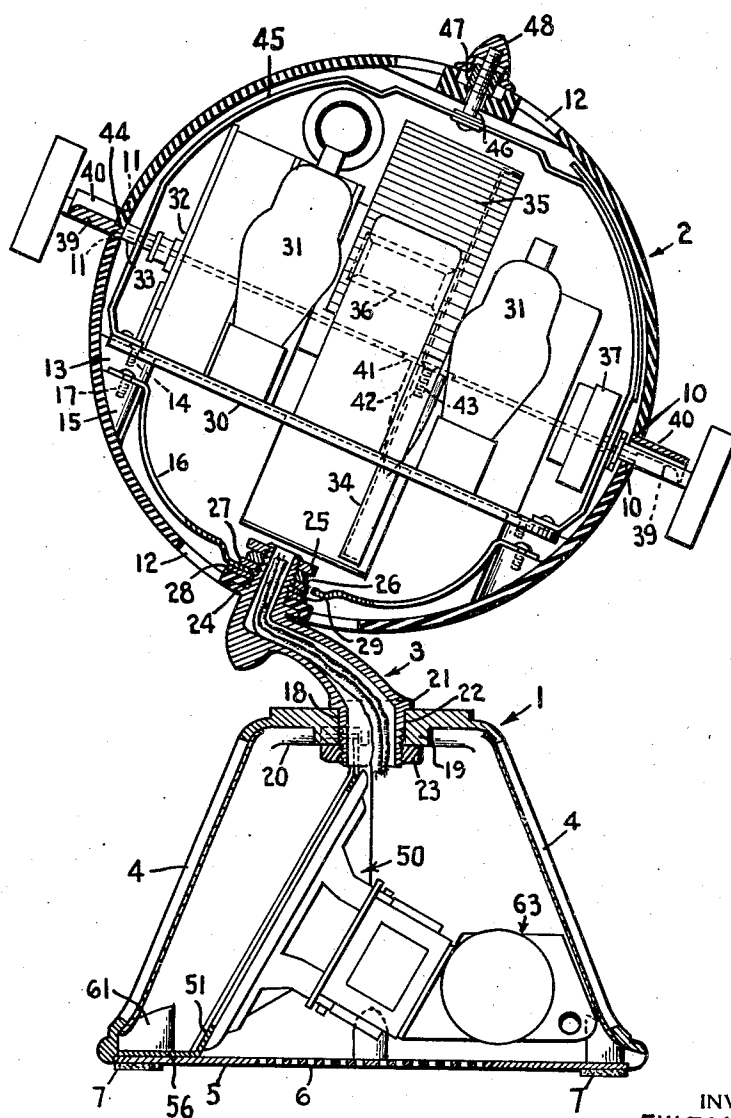
2,138,959

CABINET CONSTRUCTION FOR RADIO RECEIVERS

Filed March 13, 1934

2 Sheets-Sheet 1

FIG. 1



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2 Sheets-Sheet 2

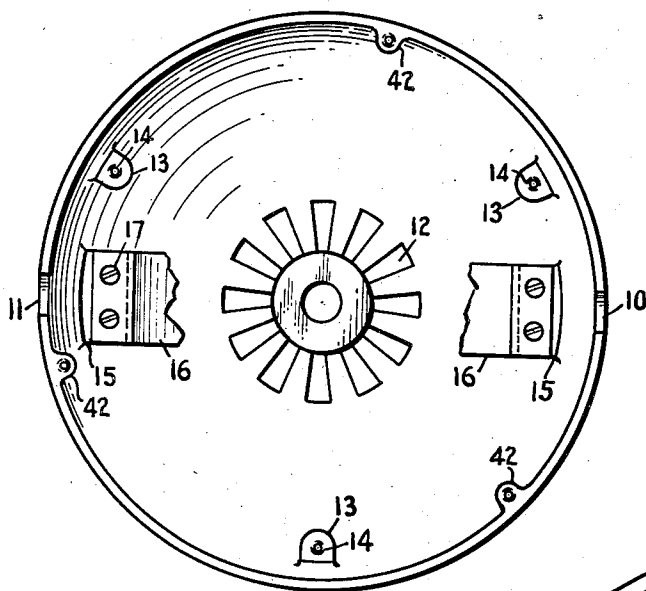


FIG. 2

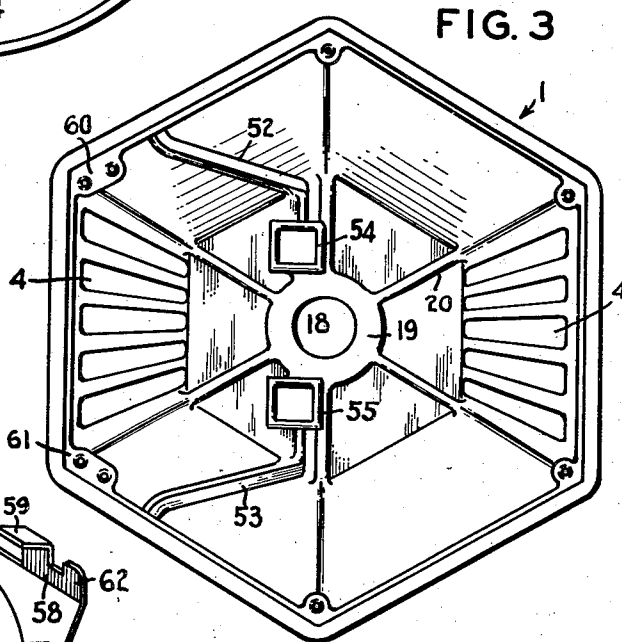


FIG. 3

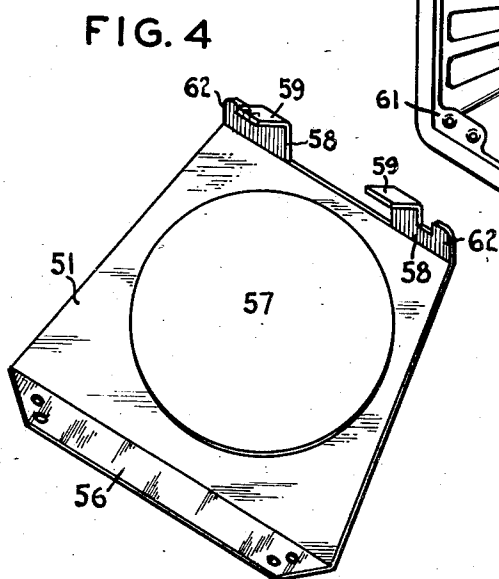


FIG. 4

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CABINET CONSTRUCTION FOR RADIO
RECEIVERSFulton Cutting and Howard A. Gates, Buffalo,
N. Y., assignors to Colonial Radio Corpora-
tion, Buffalo, N. Y., a corporation of New York

Application March 13, 1934, Serial No. 715,291

3 Claims. (Cl. 250-14)

This invention relates to the construction and mechanical arrangement of radio receiving apparatus and more particularly to the construction and arrangement of radio receiving apparatus within cabinets of unusual shape.

It is an object of this invention to provide apparatus of the class described which may be disposed within unusually shaped cabinets without interfering with the electrical operation and efficiency of the radio receiving apparatus.

It is a further object of this invention to provide apparatus which, although disposed in a cabinet of unusual appearance, is nevertheless relatively simple to manufacture and install and in which the various parts are readily accessible for inspection or replacement.

It is still a further object of this invention to provide apparatus of the class described in which the necessary operating controls extend out of the cabinet and are readily accessible for operation and easily and smoothly operable to control the apparatus with a high degree of precision.

Still other objects and advantages of our invention will be apparent from the specification.

The features of novelty which we believe to be characteristic of our invention are set forth with particularity in the appended claims. Our invention itself, however, both as to its fundamental principles and as to its particular embodiments will best be understood by reference to the specification and accompanying drawings, in which

Fig. 1 is a sectional view of one form of apparatus according to our invention;

Fig. 2 is a plan view of the lower half;

Fig. 3 is a bottom plan view of the base of the cabinet before the installation of any apparatus therein, and

Fig. 4 is a detail view showing one way of mounting a loud speaker in the base.

In accordance with one aspect of our invention, we provide a cabinet which may consist of two parts. According to another aspect of our invention the two parts are physically separate units mechanically interconnected and one may be supported for rotation upon the other.

In the form herein shown we have illustrated a cabinet such as that shown in Design Patent No. 90,586 in the form of a globe mounted upon a base on an axis inclined thereto, the globe being rotatable upon the axis. In this particular embodiment of our invention preferably part of the radio receiving apparatus is disposed within the globe itself and part within the base or pedestal and the necessary connection between the two portions of the apparatus is made by means

of leads which preferably are concealed within a hollow tubular support extending from the pedestal and supporting the globe for rotation.

We prefer to mount the radio receiving apparatus or chassis consisting of the signal selecting and amplifying apparatus at least in part or wholly within the globe with the controls extending out of the globe at the equator on opposite sides, the chassis being rigidly secured within the globe for rotation therewith and the loud speaker and part or all of the power supply apparatus being located within the pedestal.

Referring now more particularly to Fig. 1, reference number 1 designates the hollow base or pedestal, 2 the hollow globe, and 3 the support extending from the pedestal to the globe. The base may consist of a hollow generally pyramidal member of the desired shape which may be formed of any suitable material, but we prefer to utilize moldable material of the nature of phenol resins which may be readily molded to the desired shape and provided with an attractive finish and coloring.

Preferably the bottom of the pedestal is left open to permit of the installation of apparatus therein without requiring openings in the sides thereof for the purpose, and if sound reproducing apparatus is to be mounted within the pedestal, openings will be formed preferably on opposite sides thereof to permit free egress of the sound. For example, in the form shown, in which the base is a truncated hexagonal pyramid, vertical slots 4 may be provided on opposite sides of the pedestal.

The base of the pedestal after assembly may be closed by a cover plate 5 secured in position by suitable bolts engaging tapped holes in the pedestal and the base plate may be perforated as at 6 to provide for the circulation of air into the base, both for the purpose of cooling the apparatus therein and also for acoustic purposes.

In order to render these perforations effective, feet may be provided to support the base out of contact with the surface on which it rests and these feet may conveniently be small pads 7 of felt, rubber or similar material.

The globe itself is preferably formed in two parts corresponding respectively to the Northern and Southern Hemispheres divided along the Equator. Preferably diametrically opposed notches 10 and 11 will be formed in each hemisphere to assist in positioning the two hemispheres correctly with respect to each other. Also in the polar zone we prefer to provide a number of meridian openings or slots 12 to permit the free

circulation of air through the globe for cooling purposes.

In the formation of the hemispheres it is desirable to provide a number of supporting lugs 13, for example, three in number spaced 120 degrees around the hemisphere and on the same parallel of latitude, on which the chassis may rest. These lugs may be provided with tapped holes 14 to receive screws to secure the chassis in position.

Preferably the hemispheres, like the base or pedestal, are molded of suitable material of the nature of phenol resin and the various notches, lugs and openings are formed when the material is molded, as will be understood. Appropriate tapped metallic inserts may be utilized to provide the seats for the various bolts.

In addition to the lugs 13 previously described, we may also provide additional lugs 15 diametrically disposed within the bottom hemisphere. Secured to the said lugs 15 we may provide a dished reinforcing strip 16 having its opposite ends secured upon the lugs 15 as by bolts 17 and having an opening at its center.

The base or pedestal may be provided at the center of its top with an opening 18 and the material may be reinforced at this point by thickening and by the provision of an annular rib 19 and outwardly extending ribs 20. The central opening 18 is adapted to receive the supporting member 3 which is provided with a locating boss 21 and a tubular portion 22 arranged to extend into the opening 18. The lower end of the tubular portion may be threaded to receive a nut 23 to secure the supporting arm 3 on the pedestal. The supporting arm 3 is preferably a hollow member to permit of the necessary leads being passed through it for the interconnection of the apparatus in the pedestal and in the globe.

The supporting arm 3 is preferably provided with a locating annular flange 24 adjacent its upper end which engages within an annular locating depression in the South Pole of the Southern Hemisphere and is provided with an upwardly extending portion preferably of reduced area and threaded to receive nuts 25 and 26 and washers 27 and 28 and also to receive the dished member 16 which is provided with a central opening for the purpose.

By this construction it will be seen that the globe is readily rotatable upon the supporting member 3. Preferably the supporting member 3 is not rotatable upon the pedestal, but it will be understood that it may be made so if desired.

Unless slip ring connections are used it will be found desirable to provide a stop 29 to prevent rotation of the globe to more than 360 degrees, since this might result in injury to the leads. It will be understood, however, that if slip ring and brush contacts are used the globe may be freely rotatable by the omission of the limiting stops.

The radio receiver chassis is preferably mounted upon a base plate 30 circular in form and preferably having its central portion cut away to accommodate a tuning drum.

The form of radio receiving circuit provided forms per se no part of the present invention, it being understood that any suitable circuit may be utilized, the parts being disposed in desired position upon the base plate 30 on opposite sides thereof. For the purposes of simplicity we have shown the receiving apparatus diagrammatically on this plate, 31 representing tubes.

We prefer to mount the tuning condenser 32

on the upper side of the plate 30 and with its operating shaft 33 projecting outwardly from the globe on the equator along the line of the radius.

Secured to the opposite end of the tuning condenser shaft we preferably provide a tuning indicator consisting of a circular disk 34 having a cylindrical flange at its periphery, and to this flange we preferably attach a dial strip 35 to provide a drum type indicator. An opening or window 36 may be provided at the desired point in the Northern Hemisphere exposing a small portion of the drum dial and preferably a small lamp is placed behind the dial to render it readily legible when the set is in operation.

A volume control 37 is mounted on the chassis and may be of any suitable type, but preferably the control shaft for operating the volume control extends outwardly from the globe diametrically opposite the tuning shaft and in line therewith. Operating knobs of any suitable type may be attached to these two shafts.

Preferably the switch for turning the receiver on and off will be incorporated with or actuated by the volume control shaft, so that rotation thereof first throws the switch from off to on position and further rotation adjusts the volume control for increasing volume and, conversely, rotation in the opposite direction first decreases the volume and finally operates the switch turning the receiver off. Since the specific mechanism for producing this operation is well known in the art and forms per se no part of my invention, it is not shown or described in detail.

For the purpose of locating the upper hemisphere in proper position we may provide an equatorial ring 38 having diametrically opposed upwardly offset portions 40 and also having inwardly projecting ears 41 corresponding in number and location to lugs 42 formed at the equatorial line on the Southern Hemisphere. The lugs 42 are provided with tapped openings and the ears with openings to permit the engagement of bolts 43 passing through the equatorial ring into lugs 42, whereby the equatorial ring is secured upon the Southern Hemisphere.

The ring is provided with an annular depression 44 of the proper size to receiver and properly locate the Northern Hemisphere or cover, which preferably fits snugly within the annular depression.

For the purpose of securing the Northern Hemisphere in position we may provide a retaining strip 45 generally conforming in shape to the interior of the globe and having a slight clearance therefrom and secured at its opposite ends to the chassis plate 30. The strip 45 carries at a point corresponding to the North Pole a securing bolt 46 of sufficient length to project through the Northern Hemisphere to receive a retaining nut 47 and, if desired, a second cap nut.

The loud speaker 50 may be of any suitable type, but is preferably some form of direct acting sound producer which does not require a horn. A so-called dynamic cone is preferably used and may be mounted in the base or pedestal.

For this purpose there may be provided a plate 51 of sufficient width and of the proper shape to fit snugly within the pedestal and against the inner faces thereof, thereby dividing the space within the base into two compartments and for the purpose of properly positioning the plate, ribs 52 and 53 may be formed on the inner faces of the pedestal and may terminate in rectangular ribs 54 and 55 on the under side of the top of the pedestal.

The plate 51 may have a bent portion 56 at its bottom and is preferably provided with an opening 57 of the same shape and size as the sound radiating diaphragm of the loud speaker and an additional bent portion 58 at the top. Forwardly offset ears 59 may be formed at the top to fit within the rectangular ribs 54 and 55, the space within which may be filled with felt or similar material.

The loud speaker may be bolted or otherwise suitably secured to the plate 51 which, in turn, is held in position within the base by the engagement of the flat portion 56 against bosses 60 and 61 on the bottom of the base, by the engagement of the sides of the plate against the ribs 52 and 53, and by the engagement of upwardly extending tongues 62 and the ears 59 within and around the rectangular ribs 54 and 55. Suitable bolts may be provided securing the bottom portion 56 against the bosses 60 and 61.

In the form shown, 63 designates generically any suitable power supply apparatus which, for instance, may comprise a transformer, rectifier and filter circuit, and which may also be placed within the base and mounted in any suitable manner upon the loud speaker so that all of the apparatus within the base may be removed simply by removing the cover plate 5 and the bolts which hold the plate 51 against the bottom of the pedestal.

The mounting of the loud speaker in this manner prevents the surging of air pressure waves around the edge of the loud speaker diaphragm, which would occur if the plate 51 were not provided, and is of considerable benefit in improving the tone quality of the receiver.

While we have shown and described certain preferred embodiments of our invention, it is clear that modifications and changes may be made without departing from the spirit and scope of our invention, as will be understood by those skilled in the art.

We claim:

1. In radio receiving apparatus, in combination, a hollow base, a tubular support mounted on said base, a cup-like member mounted for rotation on said tubular support, radio receiving apparatus disposed on a plate secured to said cup-like member for rotation therewith, a generally arcuate brace secured to said plate and extending upwardly therefrom, a second cup-like member en-

gaging said first cup-like member, and forming therewith a complete enclosure for said radio receiving apparatus, means carried by said brace for securing said second cup-like member in position, and controls for said receiving apparatus extending exteriorly of the enclosure and independently operable irrespective of the rotation of said enclosure.

2. In radio receiving apparatus, in combination, a base, a support mounted on said base, a cup-like member mounted on said support for rotation, said member having supporting lugs formed on the inside thereof, a U-shaped plate secured to said lugs, radio receiving apparatus including a tuning element secured to said plate and having a tuning drum disposed within the U opening in said plate, a second cup-like member cooperating with said first cup-like member to form a complete enclosure, and controls for said apparatus extending through said enclosures, one of said controls being connected to operate said tuning element.

3. Radio receiving apparatus comprising, in combination, a hollow tapering base having sound emitting openings therein, a sound reproducer positioned within said base, a hollow tubular support extending from said base and having its axis inclined to the vertical, a hollow hemisphere mounted on said supporting arm for rotation about said inclined axis, radio receiving apparatus positioned within said hollow hemisphere and secured thereto for rotation therewith, an equatorial ring arranged to be secured to said hollow hemisphere, a second hollow hemisphere arranged to be mounted upon said equatorial ring and forming with said first hemisphere a complete enclosure for the apparatus therein contained, controls for said apparatus having shafts extending out of said first hemisphere and terminating exteriorly thereof, control knobs mounted on the projecting shafts, the controls being independently operable irrespective of the position thereof due to the turning of the sphere upon its axis, and connections between said sound reproducing apparatus and said radio receiving apparatus, said connections being positioned entirely within and enclosed by said base, hollow arm and the housing formed by said hemispheres.

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