Sept. 1, 1931. H. P. PRATT 1,821,236

RADIO VANITY CASE

Filed Sept. 8, 1925 4 Sheets-Sheet 1

Fig. 1.

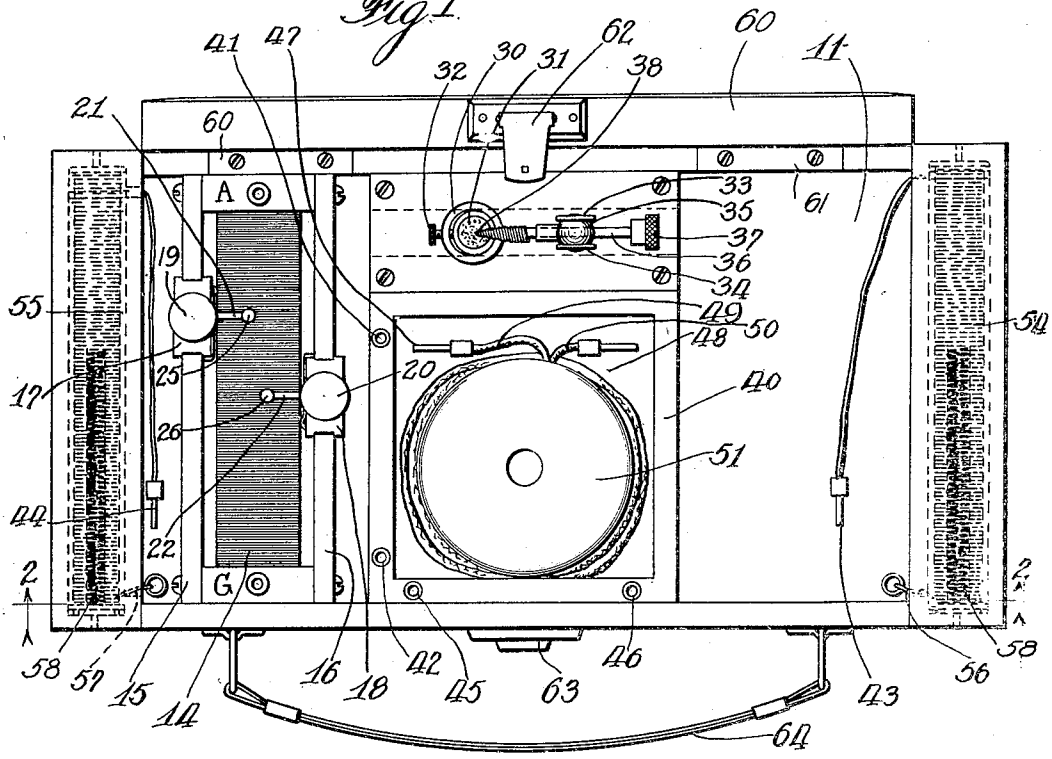
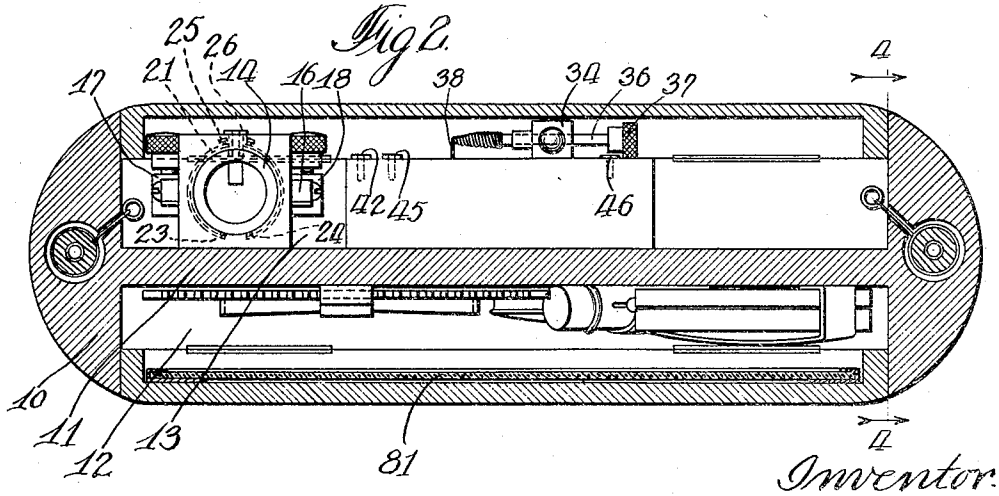


Fig 2.



Witness:

Inventor:
Harry P. Pratt.
By Chas. Soper Atty.

Sept. 1, 1931. H. P. PRATT 1,821,236

RADIO VANITY CASE

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Fig. 3.

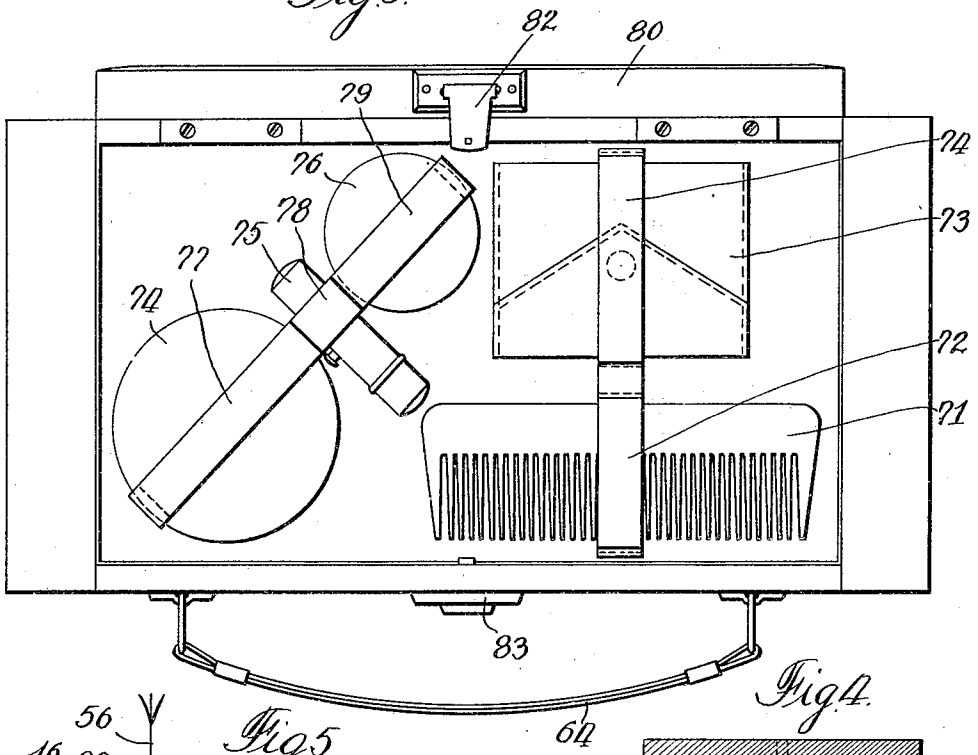


Fig. 5

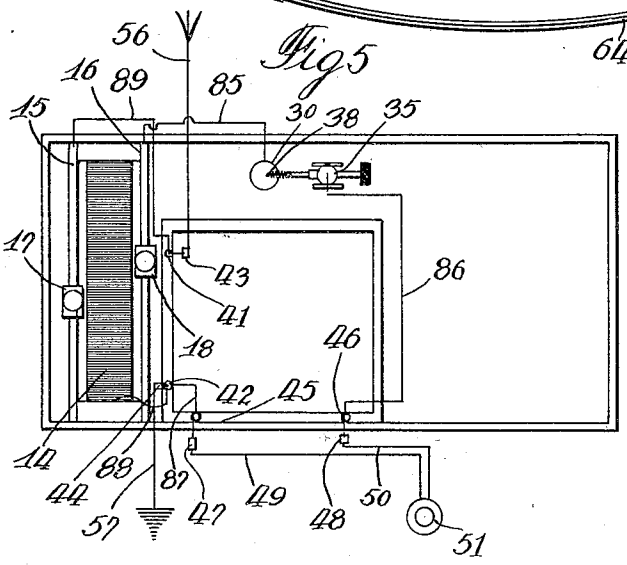
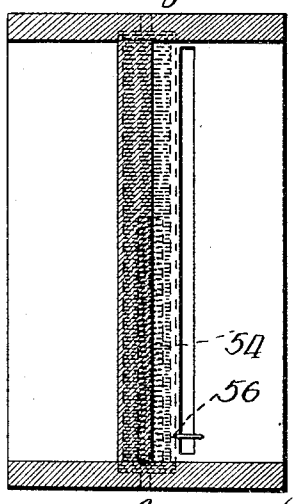


Fig. 4.



Witness.

Inventor:
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Sept. 1, 1931. H. P. PRATT 1,821,236

RADIO VANITY CASE

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Fig 7.

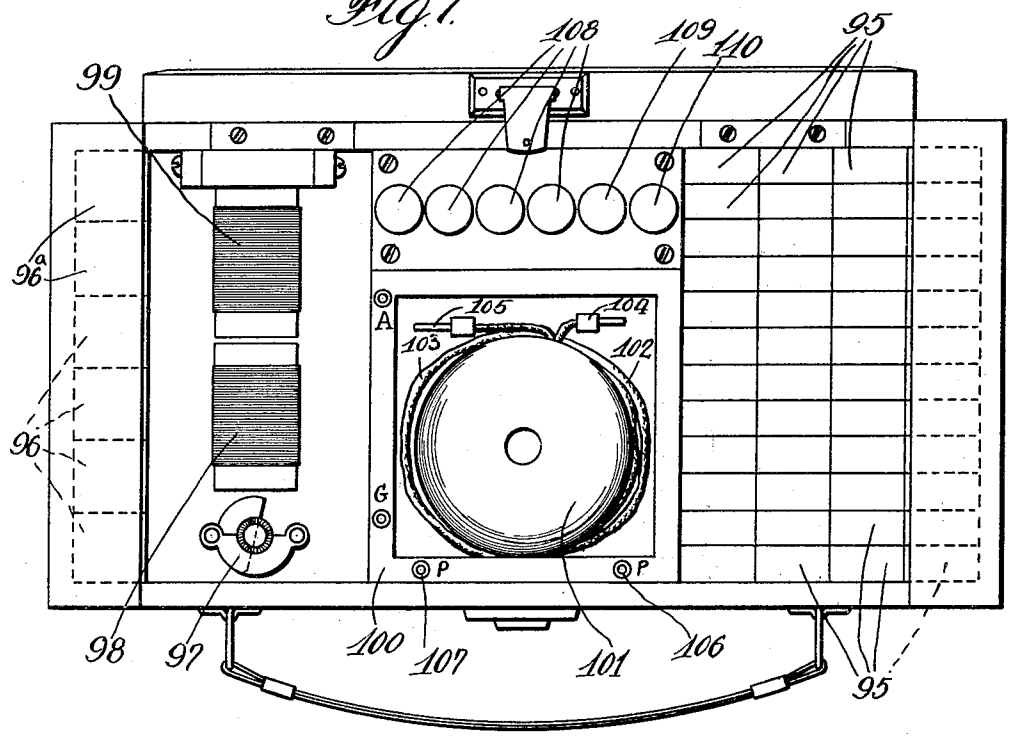
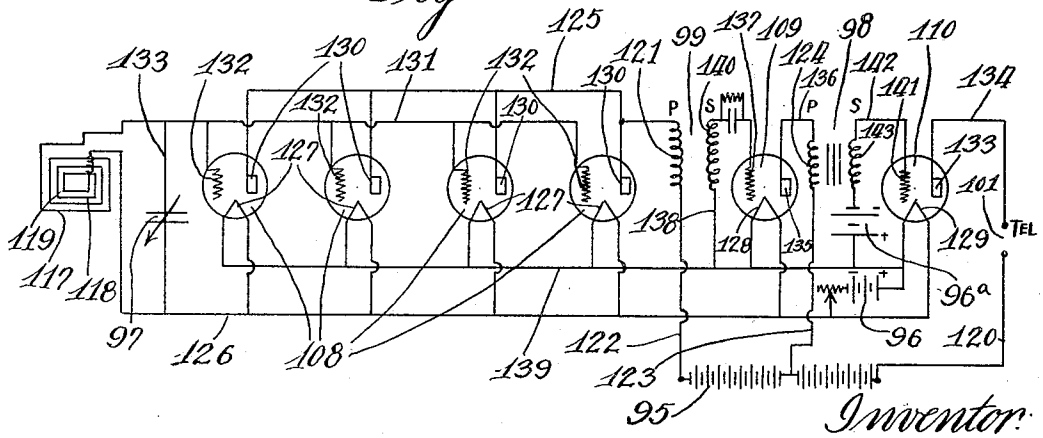


Fig 8



Witness:

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Sept. 1, 1931. H. P. PRATT 1,821,236

RADIO VANITY CASE

Filed Sept. 8, 1925 4 Sheets-Sheet 4

Fig 9.

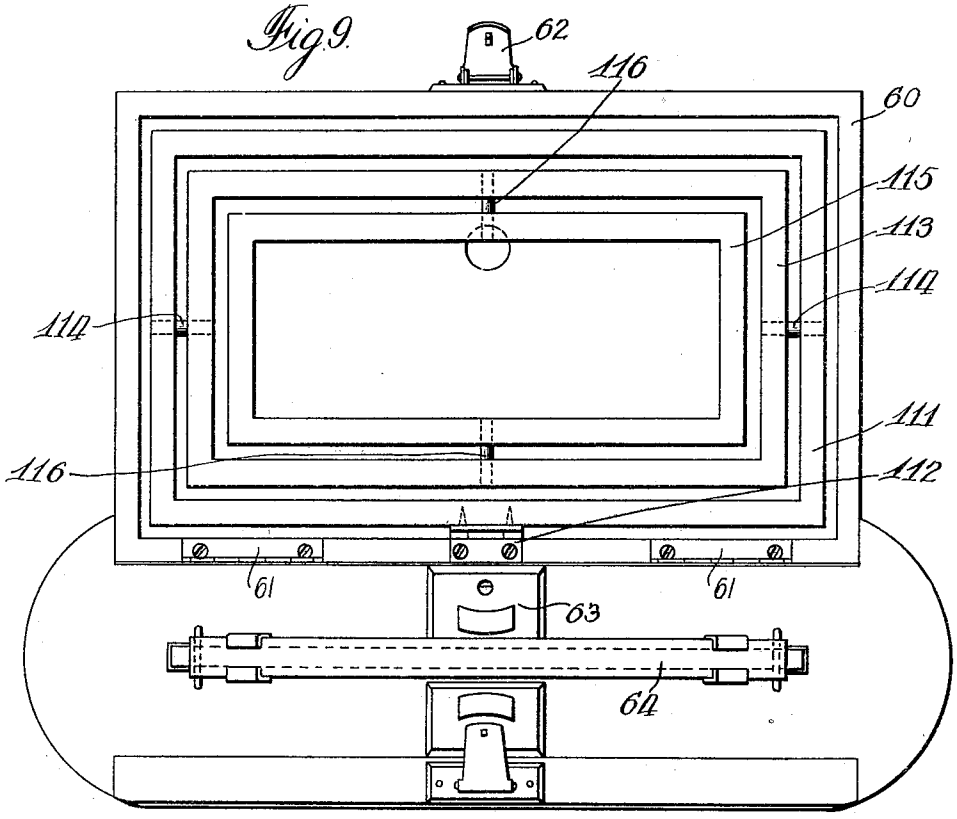


Fig 11.



Fig 10.

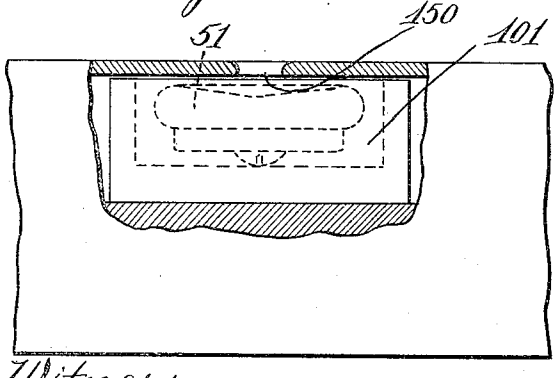


Fig 12.

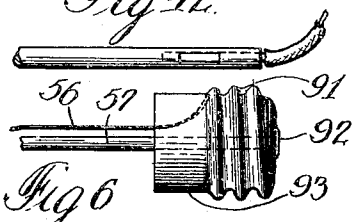


Fig 6

Witness.

Inventor
Harry P Pratt.

By: Chas. D. Soper Atty.

Patented Sept. 1, 1931

1,821,236

UNITED STATES PATENT OFFICE

HARRY PRESTON PRATT, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HARRY PRESTON PRATT, WILLIAM FREDERICK GROWER, HENRY ASA ALLEN, HOWARD THOMPSON BALLARD, AND GEORGE SQUIRES HERRINGTON, TRUSTEES OF PRATT RADIO TRUST

RADIO VANITY CASE

Application filed September 8, 1925. Serial No. 54,916.

This invention relates to a radio vanity case which will serve the double purpose of providing a container having a portable radio set therein and also the usual vanity case equipment.

The object of the invention is the provision of a compact portable radio set so constructed and arranged that it may be readily placed in one section of a vanity case and still have room in another section of the case for the usual vanity case equipment.

One of the features of the invention is the provision of a case, such as the ordinary vanity case, divided by a false bottom into two similar compartments, one of which contains a complete radio set, including the antenna, the other being equipped with the usual vanity case articles.

Another feature is the provision of a high voltage battery of small size and light weight in an equipment such as above described.

Another feature is the provision of a self contained adjustable antenna loop.

Other features and advantages will appear from time to time as the description of the invention progresses.

It is believed the various features of the invention will be understood most readily from a detailed description thereof taken in connection with the accompanying drawings which form part of the present application and in which—

Figure 1 is a view of the case showing one of the doors or covers open and disclosing the radio equipment nested in one compartment.

Figure 2 is a cross section through the entire case and shows the false bottom with the vanity equipment on one side thereof in one compartment and the radio equipment in the other compartment.

Figure 3 is a view of the side of the case containing the vanity equipment.

Figure 4 is a section on the line 4—4 of Figure 2 and shows the reel for winding up the antenna.

Figure 5 shows diagrammatically a circuit which may be employed with the radio equipment of Figure 1.

Figure 6 shows a modification of the circuit of Figure 5 in which the antenna and ground wires are connected to the two contacts respectively, of plug such as is used in connection with the ordinary plug socket employed in connection with electric light circuits.

Figure 7 is a view, similar to Figure 1, of a modified form of radio equipment employing tubes and a source of electric current and

Figure 8 is a diagram of a circuit such as may be employed with the equipment of Figure 7.

Figure 9 is a view showing the manner of mounting the tuning loop antenna in the cover.

Figure 10 shows the adaptation of the device of Figure 7 to a loud speaker horn.

Figure 11 is a side view of a plug socket showing the spring contact therein to engage the plug and,

Figure 12 is a view of the plug socket at right angles to Figure 11.

Referring now to the drawings in which like reference characters indicate the same parts in the several views, 10 is a vanity or like case formed of papier-mâché or other suitable material having a partition or false bottom dividing the case into two similar compartments 12 and 13, one of which is adapted to receive the usual equipment of a vanity case and the other to receive a radio set.

Mounted within the compartment 13, adjacent to one end thereof and in any desired manner, is the tuning coil 14. On opposite sides of the coil 14 and parallel thereto are the bars 15 and 16 on which are slidably mounted the contact carriers 17 and 18, respectively, adapted to be moved along the bars by means of the buttons or knobs 19 and 20. Carried by the carriers 17 and 18 are the substantially semi-circular contact carrying arms 21 and 22. The arms 21 and 22 are slidably connected to the carriers 17 and 18 and are so constructed that the contacts 23 and 24 at the ends thereof are always resiliently maintained in contact with the coil 14. The buttons 25 and 26 at the free ends of the arms 21 and 22 provide means whereby the arms may readily be

moved in relation to the carriers 17 and 18. The carriers make electrical contact at all times with the bars 15 and 16. The number of turns of the coil 14 between the contacts 23 and 24 is regulated by moving the carriers 17 and 18 toward or from each other and a finer adjustment may be obtained by moving the arms 21 and 22 in relation to the carriers to move the respective contacts 23 and 24 along the wire of the selected turn of coil 14. As this manner of adjustment is readily understood from the foregoing, it will not be further described.

Mounted at one side of the compartment 13 is a crystal holder or cup 30 within which is secured the crystal 31 by means of the screw 32.

Fixed to the partition 11 are the spaced concave members 33 and 34 between which is held the ball 35. Extending through the ball 35 is the rod or pin 36, having at one end thereof the handle 37 and at the other end the resiliently held crystal engaging contact 38.

Fixed to the partition 11, adjacent to the bar 16, is the rectangular frame 40. Frame 40 has in one side thereof the plug socket contacts 41 and 42 adapted to receive the plug contacts 43 and 44 respectively at the ends of the antenna and ground wires. The forward side of frame 40 is provided with the plug socket contacts 45 and 46 adapted to receive the plugs 47 and 48 respectively at the ends of the conductors 49 and 50 which lead to the ear phone 51 arranged within the frame 40.

In the opposite ends of the case are the reels 54 and 55 on which are wound the antenna 56 and the ground wire 57 when not in use. These reels may be provided with rewind springs such as indicated at 58 and automatic catch and release devices such as are well known in connection with shade rollers and the like. A contact ring and brush (not shown) are provided to extend the antenna 56 to the plug 43. A like arrangement is provided in connection with the ground wire 57.

When in use the plugs 43 and 44 will be inserted in the sockets 41 and 42 as previously explained. The antenna 56 will be unwound from the reel 54 and suspended in any desired manner and the ground wire 57 is unwound and connected to a radiator, gas fixture or any other convenient ground.

At 60 is shown the cover, supported by the hinges 61 and arranged to be held in closed position by the coacting catch members 62 and 63. If desired, the back of the ear phone 51 may be formed of highly polished metal so to form a small hand mirror. The usual handle is shown at 64.

Referring now to Figure 3, it will be noted that the compartment 12 containing the vanity equipment is similar to compartment 13.

Within compartment 12 is a comb 71 secured by loop 72 attached to partition 11 and a purse 72 held by a similar loop 74. A compact container 74', lip stick tube 75 and rouge container 76 are also secured by the loops 77, 78 and 79 respectively. The hinged cover 80 is provided with the mirror 81 (see Figure 2) and the catch members 82 and 83 for holding cover 80 in closed position.

Referring now to Figure 5, it will be seen that the contact bar 16 is joined to the crystal cup 30 by means of the conductor 85 and that ball 35 is joined to the plug socket 46 by means of the conductor 86, socket 42 is joined to socket 45 by conductor 87 and one end of the coil 14 is connected to socket 42 by conductor 88. Contact bar 15 is joined to socket 41 by conductor 89. Assuming the set is connected as herein shown, the oscillations received by antenna 56 will pass through plug 43, socket 41, conductor 89, contact bar 15, carrier 17 and contact carried thereby, coil 14, contact and carrier 18, contact bar 16, conductor 85, crystal cup 30, contact 38, ball 35, conductor 86, socket 46, plug 48, conductor 50, ear phone 51, conductor 49, plug 47, socket 45, conductor 87, socket 42, plug 44 and conductor 57 to ground.

If desired the conductors 56 and 57 may be joined to the contacts 91 and 92 of an electric light socket plug 93 as indicated in Figure 6.

Figure 7 shows a tube and battery set in the place of the crystal set of Figure 1.

At the right is a battery of 48 cells of the silver chloride variety which give a voltage of from 48 to 50 volts. These cells are indicated by the reference character 95. At the left is another battery of 4 larger cells indicated at 96.

At 97 is shown a variable condenser 97 and 98, 99 indicate two separate transformer coils. Within the square frame 100 is the ear phone 101, provided with the conductors 102, 103 terminating in the plugs 104 and 105 respectively. The plugs 104 and 105 are adapted to be received by the plug sockets 106 and 107 within the side of the frame 100. Adjacent to the frame 100 are four tubes 108 and also tubes 109 and 110.

Figure 9 shows the tuning loop antenna arranged within the cover of the box. This antenna may be substantially like that shown in applicant's prior filed application Ser. No. 46692. It consists of the frame 111 joined to the cover by means of the hinge 112, a frame 113 pivotally joined to frame 111 by means of the pivots 114 and a frame 115 pivotally joined to frame 113 by means of pivots 116. Thus frame 111 may be moved into substantially vertical position

due to the hinge connection 112. Then frame 113 may be rotated on pivots 114 to adjust frame 113 in relation to frame 111 and frame 115 may be adjusted about pivots 116 to vary the relation of frame 115 to frame 113.

Wound about the frames 111, 113 and 115 are the coils 117, 118 and 119 respectively indicated in Figure 8. These coils may be arranged in series as indicated in Figure 8 or in many other ways, including those disclosed in applicant's prior filed application above mentioned.

It has been found that when a structure employing a plurality of coils of wire, such as disclosed herein, is rotated, it acts to change the frequency of the circuit and thus stations may be tuned in and tuned out by rotating the coil structure as a unit without rotating the coils in relation to each other. In the present case, this may be accomplished by merely turning the case around.

For instance, if the coils of a structure such as shown in Figure 9 are moved to a vertical position and the case is slowly revolved, the sending stations of the surrounding territory will be brought in one after another and then tuned out. Assuming now a station has been brought in by rotating the case as just explained, it is quite likely that other stations will also be audible. If now the several coils are adjusted in relation to each other, a point of adjustment will be found where all except the desired stations will be tuned out. By the means described in applicant's prior application, the antenna herein disclosed may be used in connection with an aerial but it will give very satisfactory results as to volume and quality when no aerial is employed.

It will be noted that when the coils are rotated they not only change their inductive relation to each other, but also change the relation of the plane of the coils to the point from which the electrical oscillations emanate. It is thought that this feature of changing the relation of the plane of the coil to the direction from which the oscillations originate has a material effect on the tuning operation. All this is more fully discussed in applicant's prior application.

Referring now to Figure 8, it will be seen that one terminal of the battery consisting of cells 95 is joined to one terminal of the receiver or earphone 101 by conductor 120 and the other terminal of the battery is connected to the primary 121 of the transformer 99 by conductor 122. The mid-point of the battery of cells 95 is joined by conductor 123 to the primary 124 of transformer 98.

The antenna coils 117, 118 and 119 may be arranged in series, as shown, coil 119 being connected by conductor 126 in parallel to one terminal of each of the filaments 127 of tubes 108 and also to filament 128 of tube 109 and to filament 129 of tube 110.

The opposite end of coil 121 is joined in parallel by conductor 125 to the plates 130 of tubes 108. One end of coil 117 of the antenna is joined by conductor 131 to the grids 132 of tubes 108. Variable condenser 97 is included in the bridge 133 between conductors 126 and 131. The tubes 108 are connected in parallel in the circuit to decrease the resistance and to increase the efficiency of the circuit.

Plate 133 of tube 110 is joined, by conductor 134 to the receiver 101 and plate 135 of tube 109 is joined to the primary 124 by the conductor 136. Grid 137 is joined by conductor 138 to conductor 139, secondary coil 140 being included in the connection. Conductor 139 is joined to one terminal of each of the filaments of tubes 108, tube 109 and tube 110.

Grid 141 of tube 110 is joined by conductor 142 to conductor 139, secondary 143 and battery 96*a* being included in the connection. Battery 96*a* may consist of the two cells indicated at 96*a* in Figure 7. Filament 129 is joined to conductor 139 and also to conductor 126, battery 96 being included in the connection to conductor 126.

In Figure 10 is shown the application of a horn to the equipment. To accomplish this, the cover will be provided with the opening 150 which will overlie the center of receiver 101. This will permit the sound to issue from the case even when the cover is closed.

Figure 11 shows the construction of the plug sockets such as 45. The tube 160 forming the socket will have a strip 161 punched from one side thereof. The free end of strip 161 will be curved and extend inwardly so as firmly to engage the shank of a plug placed in the socket.

The present arrangement provides a self contained radio equipment of high efficiency in combination with a ladies' vanity case. This making it possible to tune in at almost any time or place. The fact that the antenna is self contained and located in the cover and also acts as a tuning device makes the arrangement very effective.

Notwithstanding that the equipment is complete in every respect, it is very compact and light and will not be burdensome to carry as a vanity case.

Many modifications may be made in the structure herein disclosed. For instance a separate tuning arrangement, as a potentiometer, may be provided for each tube. Many other modifications may be made without departing from the spirit of the invention.

Having thus described my invention, what I claim as new and desire to obtain by Letters Patent of the United States is:

1. An article of manufacture comprising

a case, a radio set in said case, a hinged cover for said case, said radio set including an antenna positioned within said cover and adapted to be swung therefrom, said antenna comprising a plurality of coils each rotatable in relation to the other when swung from the cover.

2. An article of manufacture comprising a case, a complete radio set in said case, a cover for said case, said radio set including an antenna positioned within said cover and adapted to be swung therefrom, said antenna comprising a plurality of coils of wire arranged in substantially the same plane, each of said coils being rotatably adjustable in relation to the other coils when swung from the cover.

In testimony whereof I have signed this specification.

HARRY PRESTON PRATT.