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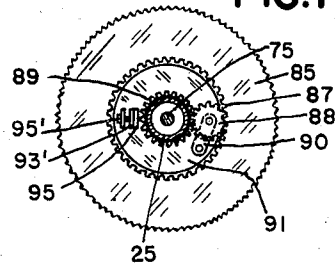
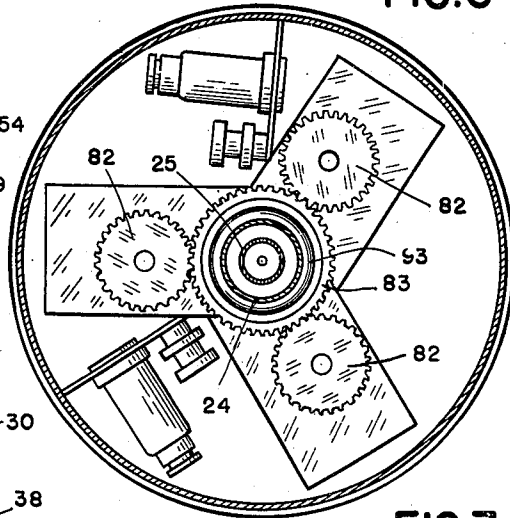
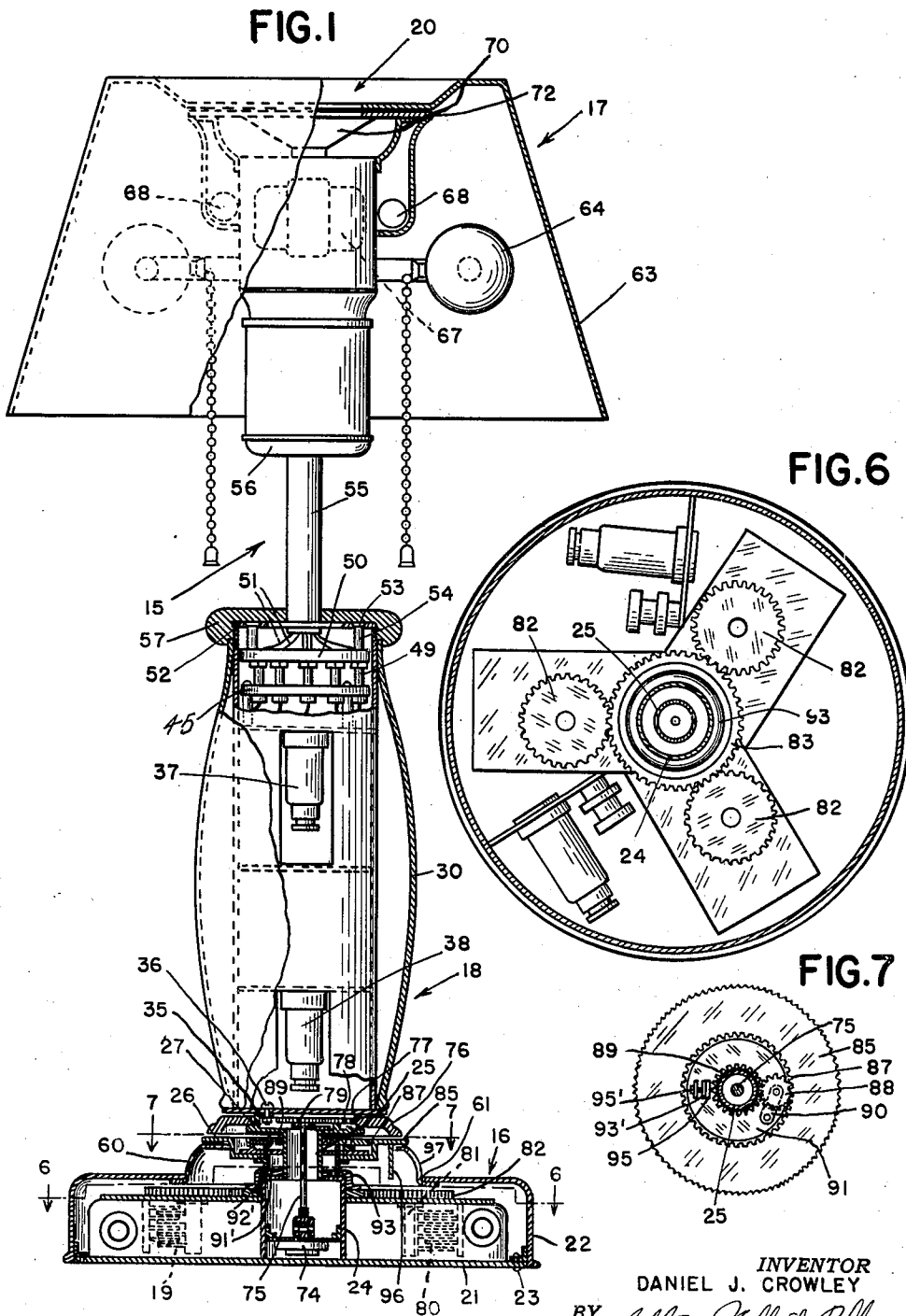
D. J. CROWLEY

2,218,327

COMBINED LAMP AND RADIO RECEIVING SET

Filed Dec. 20, 1937

3 Sheets-Sheet 1



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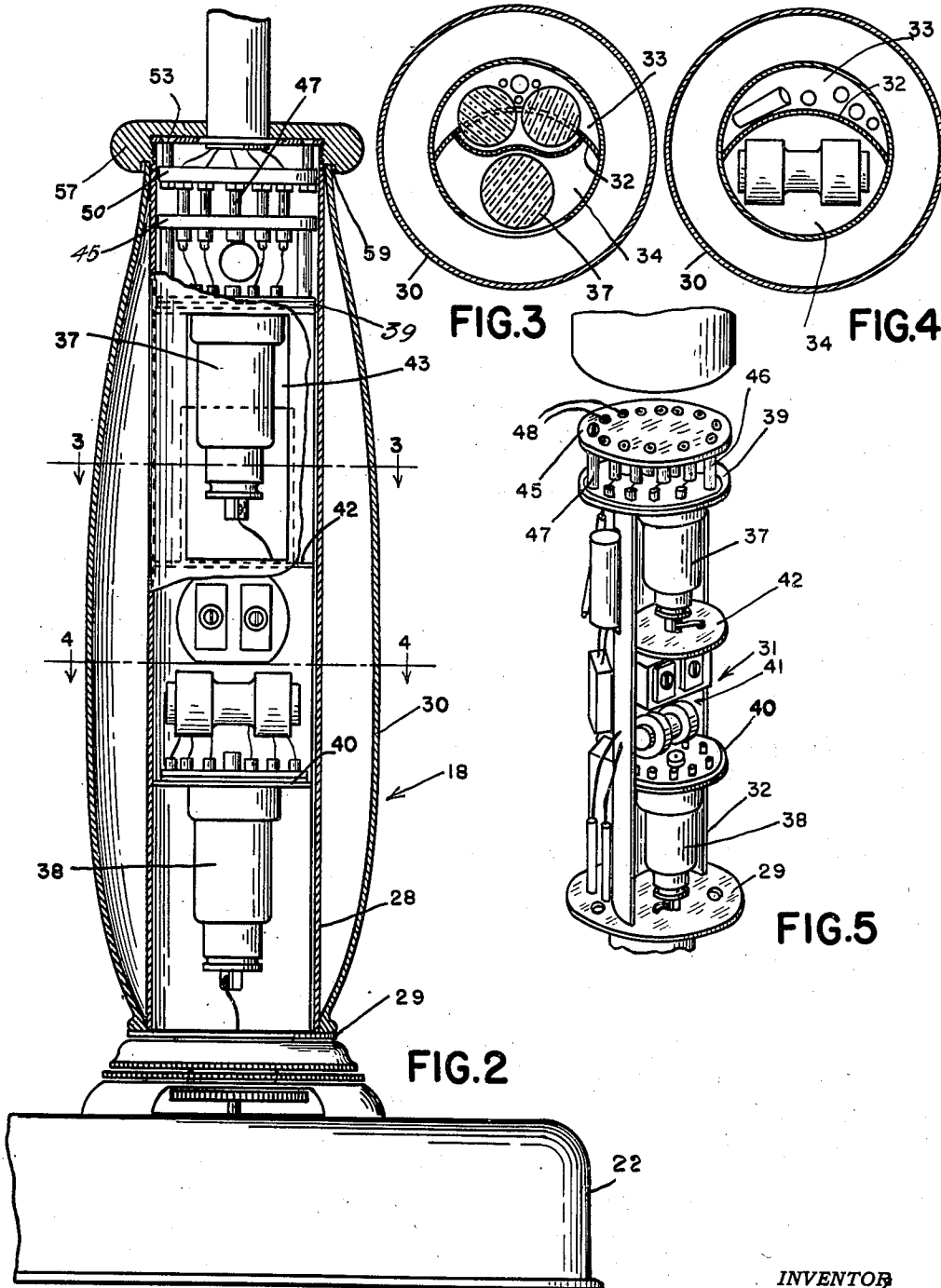
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COMBINED LAMP AND RADIO RECEIVING SET

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3 Sheets-Sheet 2



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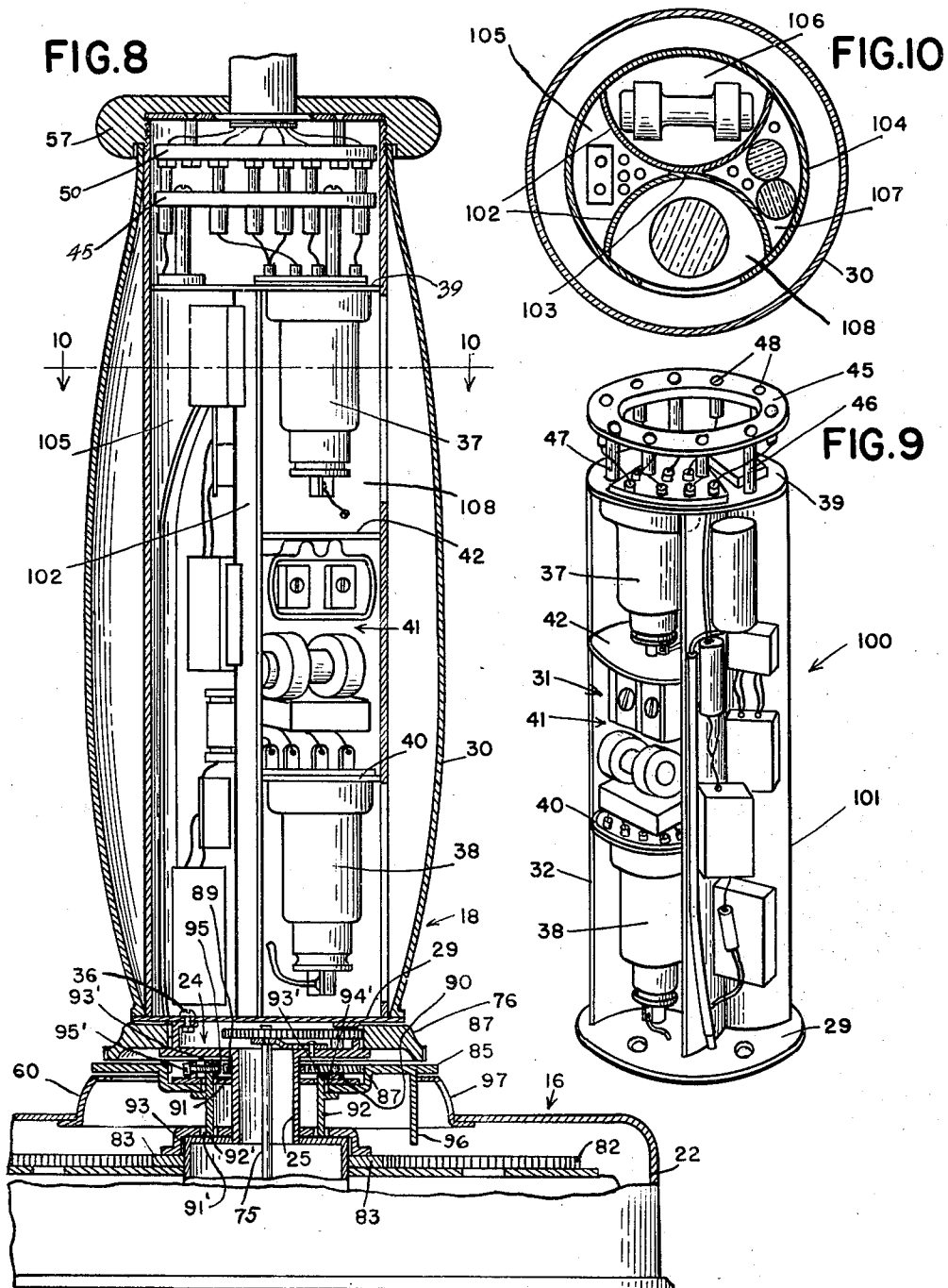
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COMBINED LAMP AND RADIO RECEIVING SET

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3 Sheets-Sheet 3



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COMBINED LAMP AND RADIO RECEIVING SET

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Application December 20, 1937, Serial No. 180,850

8 Claims. (Cl. 250—14)

This invention relates generally to radio receiving apparatus and refers more particularly to a lamp constructed to embody the several instrumentalities of the receiving apparatus.

One of the principal objects of this invention consists in arranging the several instrumentalities of the radio receiver in compact groups and distributing these groups in different portions of the lamp in such a manner that the efficiency of either the lamp or the radio receiver is not impaired.

Another advantageous feature of the present invention consists in predeterminedly arranging the instrumentalities of the radio receiving apparatus in the different portions of the lamp in such a manner that the design of the lamp is not unduly restricted and so that all of the parts of the radio receiver, with the exception of the controls, are concealed from view.

A further object of this invention consists in the provision of a combined lamp and radio receiver so constructed that the various parts of the receiver are rendered readily accessible for repair or other purposes.

In addition to the foregoing, the present invention contemplates a combined lamp and radio receiver capable of being inexpensively manufactured and readily assembled. This feature, as well as the above objects, will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is a fragmentary vertical sectional view through a combined lamp and radio receiver embodying the present invention;

Figure 2 is an enlarged sectional view of the pedestal construction;

Figure 3 is a cross sectional view taken substantially on the plane indicated by the line 3—3 of Figure 2;

Figure 4 is a cross sectional view taken substantially on the plane indicated by the line 4—4 of Figure 2;

Figure 5 is a perspective view of the chassis unit of the radio receiver;

Figure 6 is a cross sectional view taken substantially on the plane indicated by the line 6—6 of Figure 1;

Figure 7 is a cross sectional view taken substantially on the plane indicated by the line 7—7 of Figure 1;

Figure 8 is a fragmentary sectional view illustrating a slightly modified form of the invention;

Figure 9 is a perspective view of the chassis for

the radio receiver employed in the construction shown in Figure 8; and

Figure 10 is a cross sectional view taken substantially on the plane indicated by the line 10—10 of Figure 8.

Referring first to the embodiment of the invention illustrated in Figures 1 to 7, inclusive, it will be noted that there is illustrated in Figure 1 a lamp 15 having a base portion 16 and a shade assembly 17 supported in spaced relation from the base by means of a pedestal assembly 18. In the present instance, the instrumentalities of the radio receiving apparatus are divided into three groups and the latter are respectively supported in the base 16, pedestal 18, and shade assembly 17. Although the particular parts of the radio receiver contained in any one group may be widely varied without departing from the spirit and scope of this invention, nevertheless, I prefer to arrange the variable condensers 19 in the base 16 of the lamp and the speaker unit 20 in the shade assembly 17 of the lamp.

In detail, the base 16 of the lamp is provided with a bottom plate 21 and a cover 22 detachably secured to the bottom plate by means of the fastener elements 23. The cover 22 forms a housing for the plate 21, and several of the instrumentalities of the radio receiving apparatus, including the condensers 19, are supported on the plate 21 within the housing. The variable condensers 19 are symmetrically arranged on the base with respect to a centrally disposed upwardly extending tubular member 24 secured to the plate 21 and having a reduced portion 25 extending through a central opening 26 in the top wall of the cover. The reduced portion 25 terminates at the upper end in an enlarged tubular portion 27 and the latter forms a support for the pedestal 18.

The pedestal 18 of the lamp is shown in Figure 2 as having a vertically extending tube 28 seated at the lower end on a plate 29 and adapted to be concealed by an ornamental tube 30. The ornamental tube surrounds the tube 28 and is also seated on the plate 29 at the lower end thereof. A chassis unit 31 supporting a plurality of instrumentalities of the radio receiving set is telescoped by the tube 28 and is shown in Figure 5 as having a vertically extending stanchion 32 welded, or otherwise suitably secured, at the lower end thereof to the plate 29. The stanchion 32 is arcuate in cross section and cooperates with the tube 28 to provide laterally spaced vertically extending compartments 33 and 34. Upon reference to Figures 3 and 4, it will be noted that the opposite vertical edges of the stanchion frictionally engage

the inner surfaces of the tube 28 and thereby serve to secure the latter with the ornamental tube 30 against lateral displacement relative to the plate 29.

- 5 The plate 29 is supported upon circumferentially spaced lugs 35 extending inwardly from the upper end of the tubular member 24 and is detachably secured to these lugs by means of the fastener elements 36. With this arrangement, it
- 10 will be noted that the chassis unit 31 may be disassembled from the base 16 when desired by merely removing the tubes 28 and 30 and the fastener elements 36. It will, of course, be understood that prior to disassembling the chassis
- 15 unit 31 from the base 16, it is necessary to also disconnect the electrical conductors extending from the parts of the radio receiving circuit in the base to the various instrumentalities of the apparatus supported on the chassis.
- 20 In accordance with the present invention, parts of the radio receiving circuit are supported in the compartment 33 on the stanchion 32 and additional instrumentalities of the radio receiving circuit are carried by the stanchion 32
- 25 at the opposite side thereof in the compartment 34. In the specific embodiment of the invention illustrated in Figures 1 to 7, inclusive, two of the radio tubes 37 and 38 are supported on the stanchion 32 in the compartment 34. The base
- 30 of the upper tube 37 is secured to a plate 39 which, in turn, is welded, or otherwise suitably fixed, to the upper end of the stanchion 32 and is formed with the required number of sockets therein for receiving the usual prongs extending
- 35 from the base of the tube. The lower tube 38 is supported upon a plate 40 extending transversely of the compartment 34 and fixedly secured to the stanchion 32 in vertical spaced relation to the plate 29. The plate 40 is also formed with the required number of sockets therein for detachably
- 40 receiving the prongs extending from the base of the tube 38. The aforesaid sockets are electrically connected in the radio receiving circuit in accordance with conventional practice and cooperate with prongs on the radio tubes to connect the various parts of the circuit to the elements in the tubes. The space between the two tubes is
- 45 occupied by the parts 41 of the radio receiving circuit and the tube 37 is shielded from these parts by means of a plate 42 also extending transversely of the compartment 34 and fixedly secured to the stanchion 32. The arrangement is such that the two tubes are effectively shielded from the instrumentalities of the radio receiving
- 50 apparatus 41 and are also shielded from the parts of the circuit in the compartment 33.

Attention is called to the fact at this time that the stanchion 32 is apertured as required to provide for extending any electrical conductors therethrough and that the tube 28 is slotted, as at

60 43, opposite the radio tubes in order to permit the latter to be interchanged without removing the tube 28.

From the foregoing construction and from the

65 illustration noted in Figure 5 of the drawings, it will be seen that removal of the ornamental tube 30 and the inner tube 28 exposes all of the parts of the radio receiving circuit supported on the chassis unit 31. This is desirable in that it renders all of these parts of the radio receiving circuit accessible for testing and repair without the necessity of disassembling the chassis.

Referring again to Figure 5, it will be noted that the chassis unit 31 also includes a contact

75 plate 45 secured in vertical spaced relationship

to the plate 39 by means of the fastener elements 46 and the spacers 47 surrounding the fastener elements. The contact plate 45 is formed with a plurality of sockets 48 therein electrically

5 connected to those parts of the radio receiving circuit it is essential to connect to the speaker unit 20 in the shade assembly 17. The sockets 48 are respectively engaged with suitable prongs 49 extending downwardly from a plate 50 and electrically connected to the speaker unit by

10 means of the conductors 51.

The plate 50 is detachably secured to a flange 52 in spaced relation thereto by means of the fastener elements 53 and the spacers 54. The flange 53 is fixedly secured to the lower end of

15 a tube 55 having the upper end secured to a housing 56 in the shade assembly 17. Upon reference to Figure 2, it will be noted that the flange 53 is in the form of a plate abutting the upper edge of the tube 28 and clamped to the latter

20 by means of a ring 57. The ring 57 is rotatably mounted on the lower end of the tube 55 above the plate 53 and is internally threaded for engagement with the external threads formed on the upper end of the tube 28. It will also be observed from the above figure that the bottom

25 surface of the ring is recessed, as at 59, to receive the top edge portion of the ornamental tube 30 and thereby hold the same in assembled relation with the tube 28.

With the above construction, it will be noted that both the ornamental tube 30 and the chassis enclosing tube 28 may be readily removed from the chassis by merely disengaging the ring 57

35 from the upper threaded end portion of the tube 28 and by moving the contact plate 50 upwardly relative to the cooperating contact plate 45 to disengage the plugs 49 on the former from the sockets 48 in the latter. After the chassis unit 31 has been exposed, the same may be readily

40 removed from the base 16, if desired, by disengaging the fastener elements 36 and any electrical conductors extending from the chassis unit to the parts of the radio circuit in the base 16. In this connection, it is to be noted that the several parts of the radio circuit in the base 16 may also

45 be rendered accessible without disassembling the lamp structure. As shown in Figure 1, the raised portion 60 on the top wall of the cover 22 is removable from the latter and the central opening 61 in the top wall of the cover is of sufficient diameter to permit the cover to be raised over the ornamental tube 30 after the fastener elements 23 have been manipulated to disconnect the base plate 21 from the cover. It follows from the above that all of the various parts of the radio receiving circuit in the pedestal and in the base may be readily rendered accessible for observation and repair.

Referring now to the construction of the lamp shade assembly 17, it will be noted that the housing 56 is positioned within the shade 63 and forms a support for the electric light bulbs 64. Located within the housing 56 is the usual power transformer 67 for the rectifier and audio tubes 68 and

65 69 of the speaker unit 20. The speaker unit 20 is supported on the upper end of the housing 56 within the shade 63 and the cone 70 of the speaker is supported in the manner shown in Figure 1 adjacent the sounding board 72 which forms the

70 top of the shade assembly.

Upon reference to Figure 1, it will be noted that the base 16 of the lamp supports the combined volume control and "on-and-off" switch 74. This switch is shown as being secured in the tubular

75

member 24 and is actuated by means of a shaft 75 having the lower end removably connected to the switch 74. The shaft 75 is rotated to effect the desired operation of the switch 74 by means of a revoluble control disc 76 supported on the upper end of the tubular member 24 beneath the plate 29 and having internal teeth 77 meshing with a pinion 78 which, in turn, meshes with a gear 79 secured to the upper end of the shaft 75.

In Figures 6 and 7, I have illustrated one type of mechanism that may be employed for varying the capacities of the several condensers 19. In accordance with conventional practice, each of the variable condensers 19 is provided with a rotor 80 having a vertical shaft 81 secured at the upper end to a pinion 82. The pinions 82 on the condenser shafts are adapted to mesh with a centrally disposed driving gear 83 rotatably supported on the tubular member 24 and adapted to be driven by a revoluble control disc 85 through suitable reduction gearing. The control disc 85 is rotatably supported beneath the control disc 76 and is provided with internal teeth 87 adapted to mesh with an idler pinion 88 which, in turn, meshes with a ring gear 89 fixed to the reduced portion 25 of the tubular member 24. As shown in Figure 7, the idler pinion 88 is rotatably supported on the free end of a link 90 having the opposite end pivotally connected to a carrier disc 91. The carrier disc 91 is centrally apertured to receive the reduced portion 25 of the tubular member 24 and is supported on the upper edge of a sleeve 92 having spaced projections 92' depending from the lower edge for engagement in radially extending slots 91' formed in the hub 93 of the driving gear 83. The upper edge of the sleeve 92 is also formed with spaced projections 93' for engagement in radially extending slots 94' formed in the carrier 91 and the latter slots, as well as the slots 91', are elongated radially of the axis of rotation of the sleeve to permit shifting movement of the sleeve in a direction transversely to its axis. In the present instance, the sleeve 92 is normally urged in a direction to frictionally clamp the pinion 87 between the fixed gear 89 and the control disc 85 by means of a spring 95 acting upon one of the projections 93' and adjustably connected to the carrier 91 by means of the set screw 95'. As shown, the set screw 95' is threaded in a lug projecting upwardly from the carrier and extends freely through the projection 93' aforesaid on the sleeve 92 for connection with the spring 95. Inasmuch as the control disc 85 is mounted on the sleeve 92 for movement therewith as a unit, it follows that the spring 95 urges the control disc 85 in a direction to tension the pinion 87 between the gear 89 and control disc. As a result, back lash is eliminated from the gearing and more accurate control of the condensers is obtained. Attention may also be called to the fact that a wave band indicator 96 is secured to the control disc 85 for rotation therewith as a unit and that this disc is visible through a window 97 formed in the raised portion 60 of the cover 22.

The embodiment of the invention illustrated in Figures 8 to 10, inclusive, differs from the one previously described in the construction of the chassis unit 100. This chassis unit is designed for use with radio receiving apparatus of a larger capacity than the one shown in Figures 1 to 7, inclusive. The stanchion 101 in this embodiment of the invention comprises two semi-circular vertically extending sections 102 arranged back to back and integrally connected together, as at 103. These sections cooperate with the enclosing tube

104 of the pedestal to form, in effect, four vertically extending compartments respectively designated in Figure 10 by the reference characters 105, 106, 107, and 108. The compartments 106 and 108 are each identical to the compartment 34 previously described and in the interests of simplicity, each compartment is shown as housing the same instrumentalities of the radio receiving circuit. The compartments 105 and 107 preferably contain the wiring and other parts of the radio receiving circuit necessary for efficient operation of the radio. With the above exceptions, the embodiment shown in Figures 8 to 10, inclusive, may be identical to the one described in detail with reference to Figures 1 to 7, inclusive, and, accordingly, reference is made to the foregoing description for an explanation of the tuning dial arrangement and the other identical parts.

What I claim as my invention is:

1. In a combined lamp and radio receiving apparatus, a lamp having a base, means housed by said base for supporting a plurality of parts of a radio receiving circuit including a variable condenser, a pedestal mounted on the base and including a vertically extending tubular member, a chassis unit telescopically engaged by the tubular member and carrying additional parts of the radio receiving circuit, and means mounted on the base between the latter and chassis unit for operating the variable condenser.

2. In a combined lamp and radio receiving apparatus, a lamp having a base, a pedestal carried by the base and including a vertically extending tube removable from the base, a chassis unit for a radio receiver enclosed by the tube and having a vertically extending stanchion in the form of a dividing wall cooperating with the side walls of the tube to form vertical compartments extending substantially the full length of the tube, and means for supporting a plurality of instrumentalities of a radio receiving apparatus on said stanchion in each of said compartments.

3. In a combined lamp and radio receiving apparatus, a lamp having a base, a stanchion in the form of a wall extending upwardly from the base and removably secured to said base, a plurality of instrumentalities of a radio receiving circuit carried by the stanchion at opposite sides of the latter and forming a unit therewith, and a tube slidably engageable with the opposed vertical edges of the stanchion to conceal the parts of the radio receiving circuit carried by the stanchion.

4. In a combined lamp and radio receiving apparatus, a lamp having a base, a stanchion supported on the base and extending upwardly therefrom, a plurality of instrumentalities of a radio receiving circuit secured to the stanchion at points spaced throughout the height of the latter to form a unit with said stanchion, a tube enclosing the stanchion and instrumentalities of the radio receiving circuit, means securing the tube in place providing for removal of the tube independently of the stanchion to expose the instrumentalities aforesaid of the radio receiving circuit, a contact plate secured to the upper end of the stanchion and having contacts electrically connected to certain of the instrumentalities of the radio receiving circuit, a shade assembly for the lamp carrying the speaker unit for the radio receiving apparatus, means detachably securing the shade assembly to the upper end of the tube, and a contact plate carried by the shade assembly

bly having contacts detachably engageable with the contacts on the plate carried by the stanchion and electrically connected to parts of the speaker unit.

- 5 5. In a combined lamp and radio receiving apparatus, a lamp having a base and a shade assembly positioned above the base, a chassis unit for a radio receiving apparatus extending between the shade and base, a plurality of instrumentalities of a radio receiving circuit mounted on the chassis unit at points spaced throughout the height of the latter and forming an assembly with the chassis unit, a tube surrounding the chassis unit and housing the parts of the radio receiving circuit carried by said unit, a speaker unit carried by the lamp assembly, a contact plate carried by the shade assembly and having contacts electrically connected to the speaker unit, and a cooperating contact plate carried by the chassis unit having contacts electrically connected to certain of the instrumentalities of the radio receiving circuit and detachably engaging the contacts on the first named plate.
- 10 6. In a combined lamp and radio receiving apparatus, the combination of a lamp having a base and a shade assembly supported from the base by a pedestal assembly of hollow construction, radio receiving apparatus having parts distributed in the shade assembly and in the pedestal assembly, a contact plate carried by one of the assemblies and having sockets electrically connected to the parts of the radio receiving apparatus in the latter assembly, a second contact plate carried by the other assembly and having plugs insertable into the sockets and electrically connected to the parts of the radio receiving apparatus in the last named assembly it is desired to connect to the parts in the assembly

aforsaid, both plates located within the hollow pedestal, and means detachably securing the assemblies together

7. In a combined lamp and radio receiving apparatus, a lamp having a base, a pedestal including a vertically extending tubular member supported on the base, a chassis unit for the radio receiver carried by the base and adapted to be housed by said tubular member, a radio receiving apparatus having a plurality of instrumentalities supported on said chassis unit in positions to be exposed upon removal from the tubular member and having other parts including variable condensers supported in the base in concentric relation to the axis of the pedestal, and means located between the base and lower end of the chassis unit for rotative movement about the vertical axis of the tubular member and connected to the variable condensers for simultaneously adjusting the latter.

8. In a combined lamp and radio receiving apparatus, a lamp having a base, a pedestal carried by the base and including a vertically extending tube supported on said base, a chassis unit for a radio receiving apparatus located within the tube and including a vertically extending stanchion extending upwardly from the base in a manner to divide the tube into laterally spaced vertically extending compartments, horizontal parts secured to one side of the stanchion and dividing one of the vertical compartments into a plurality of superposed compartments, and means supporting a plurality of instrumentalities of a radio receiving circuit in each of the superposed compartments and in the vertical compartment at the opposite side of the stanchion.

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