April 7, 1942. D. J. CROWLEY 2,278,835

COMBINED LAMP AND RADIO RECEIVING SET

Filed June 24, 1940 4 Sheets-Sheet 1

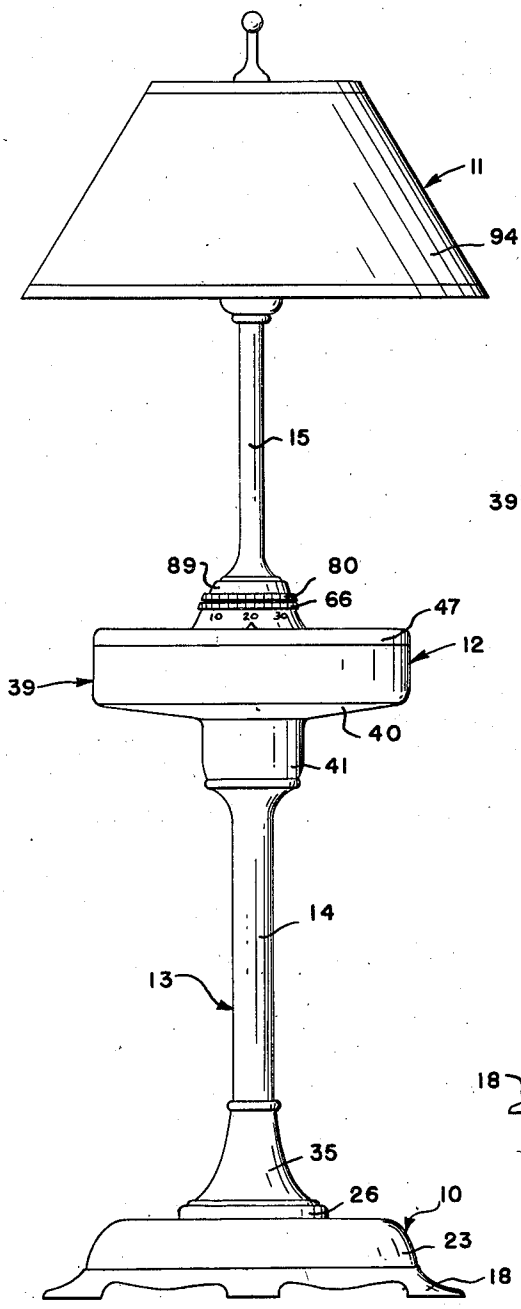


FIG. 1.

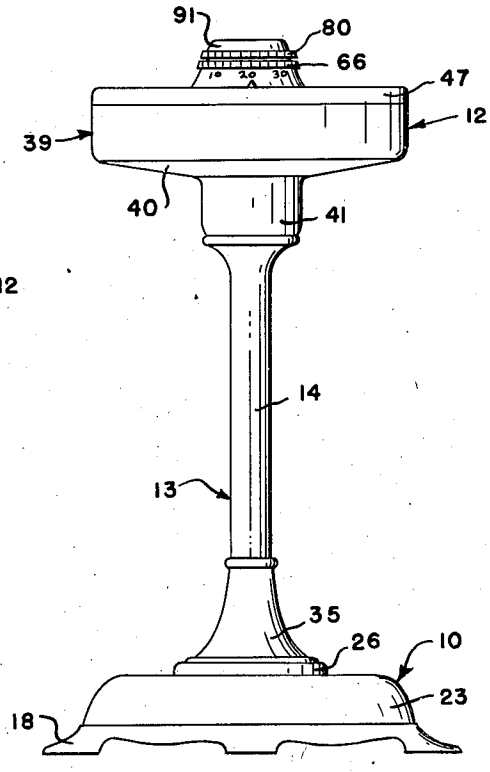


FIG. 7.

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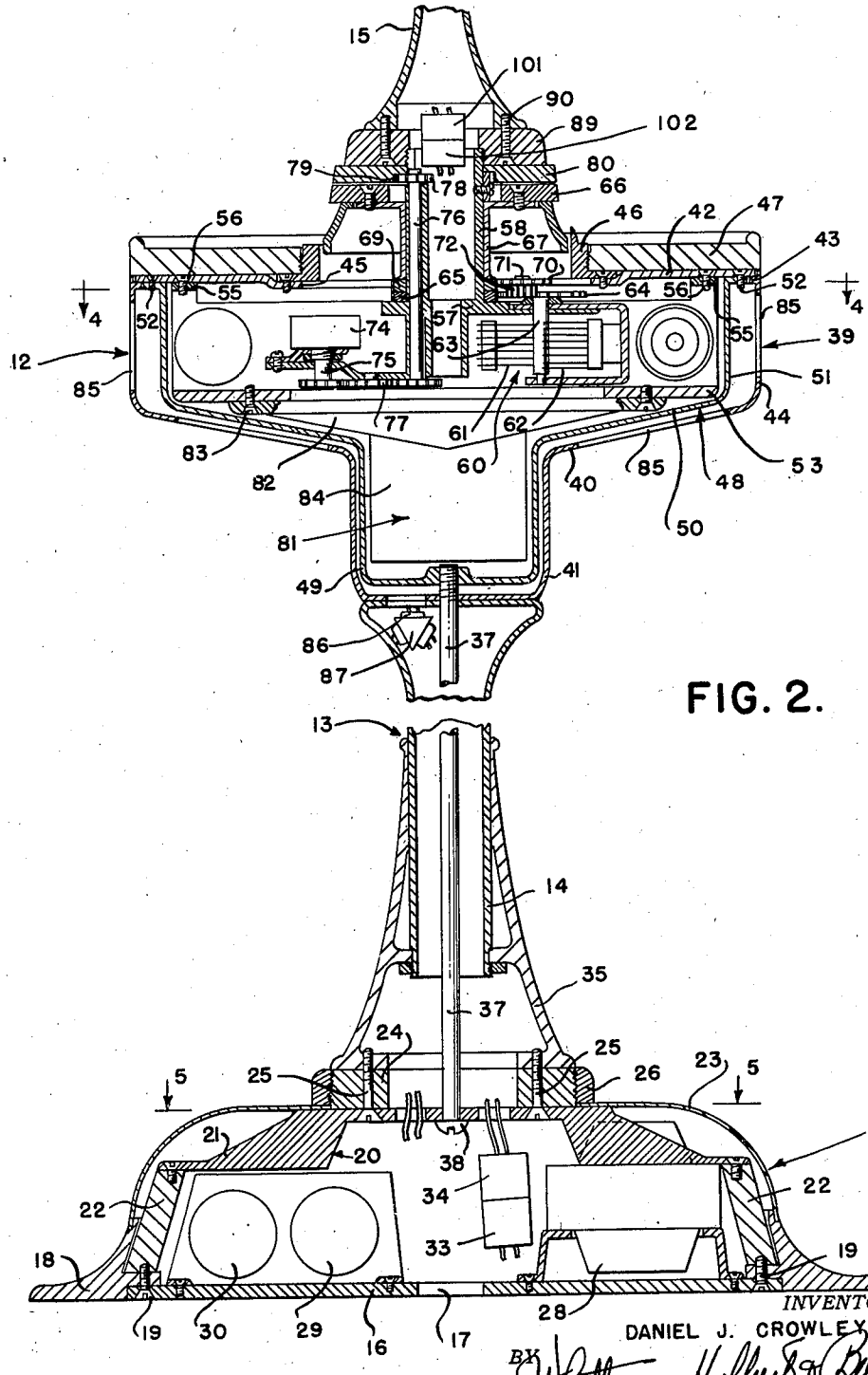


FIG. 2.

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Filed June 24, 1940 4 Sheets-Sheet 3

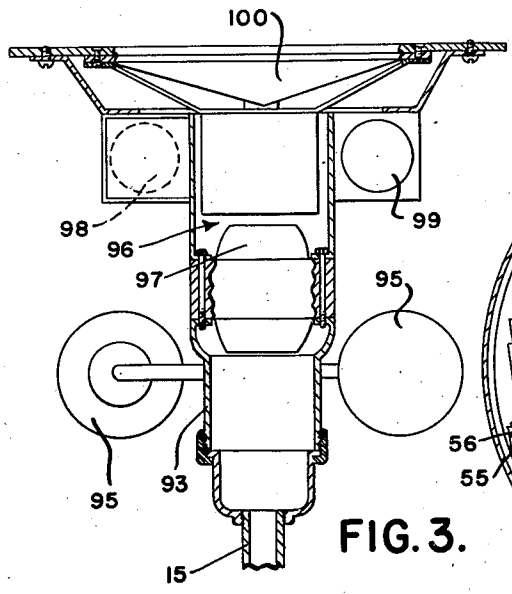


FIG. 3.

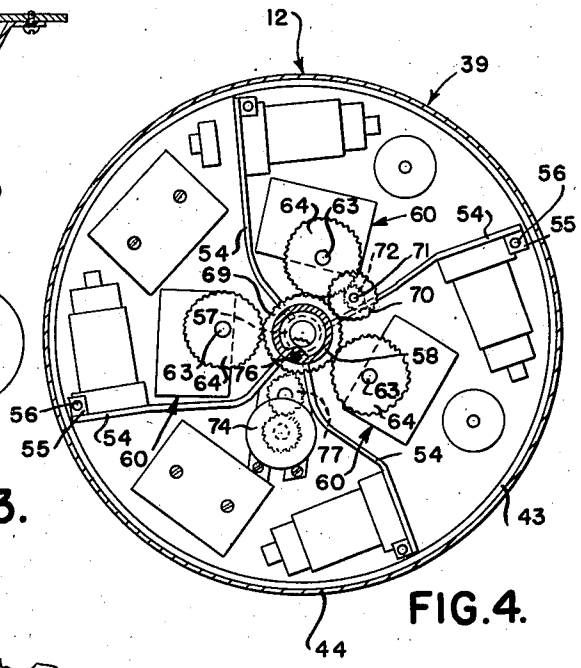


FIG. 4.

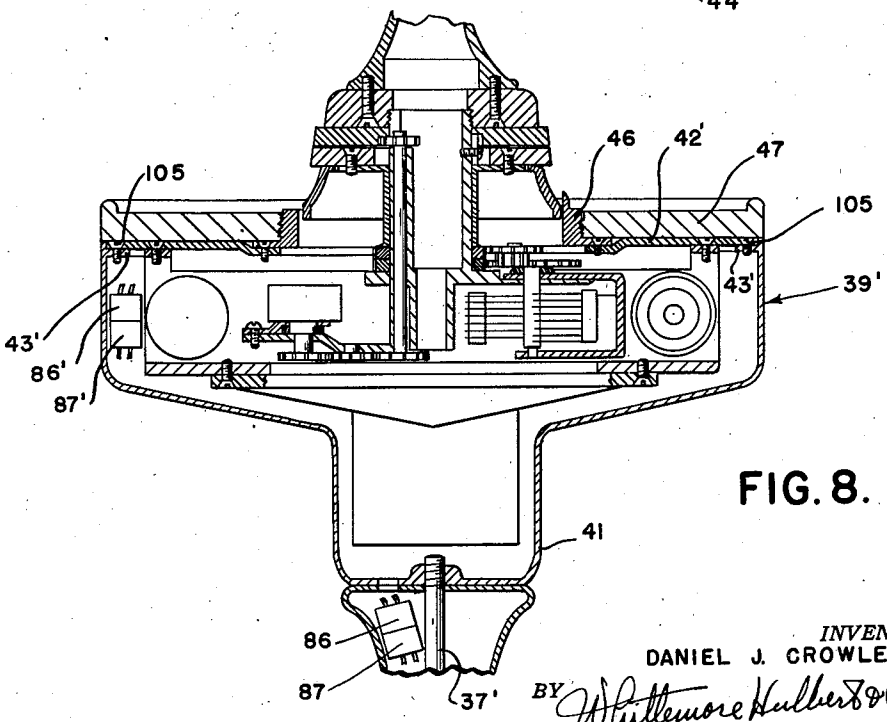


FIG. 8.

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FIG. 9.

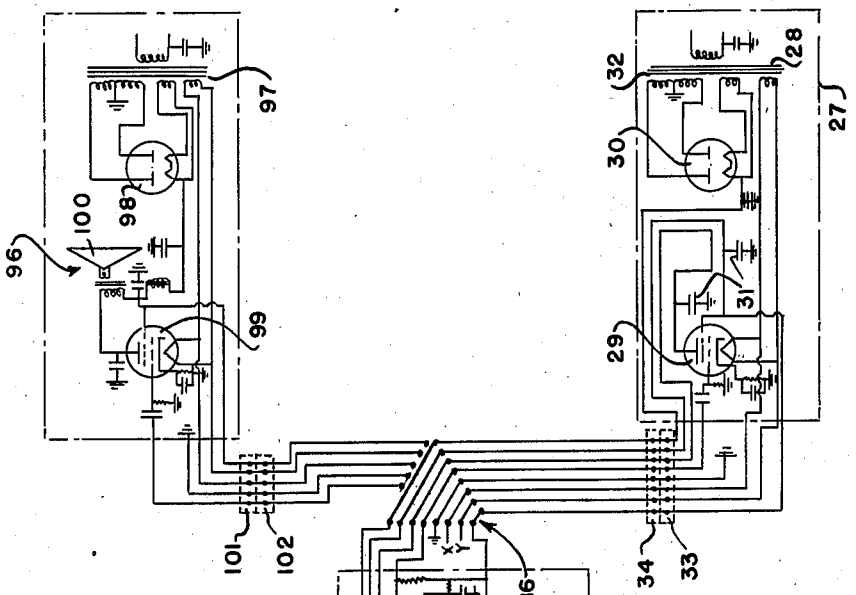


FIG. 5.

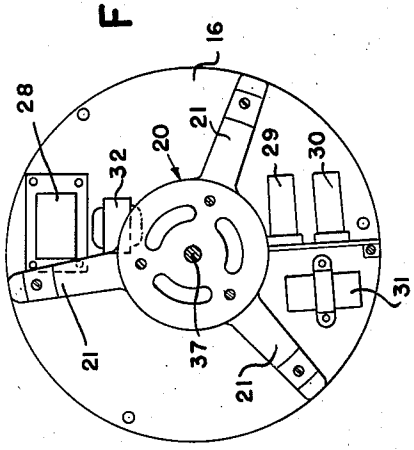
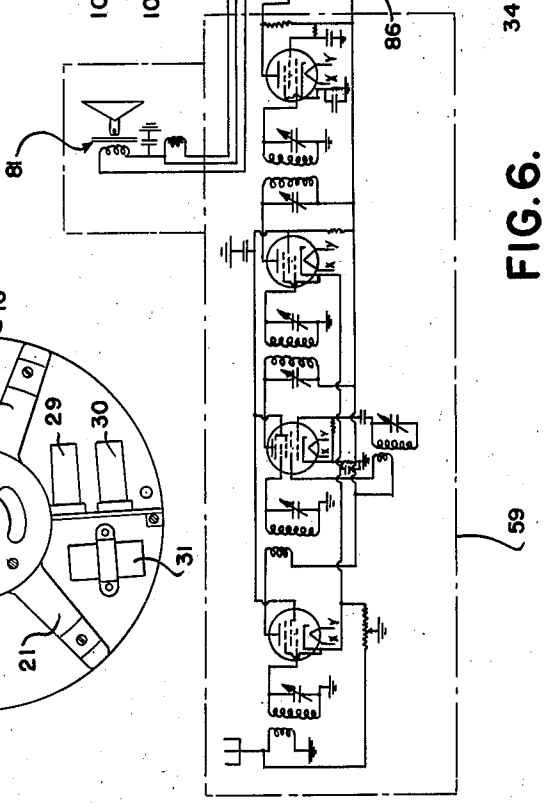


FIG. 6.



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UNITED STATES PATENT OFFICE

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COMBINED LAMP AND RADIO RECEIVING SET

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Application June 24, 1940, Serial No. 342,167

13 Claims. (Cl. 250—14)

This invention relates to a combined article of furniture and radio receiving set.

More particularly, this invention contemplates an improved floor lamp having various instrumentalities of a radio receiver distributed in several parts of the lamp in such a unique manner that the dimensions or proportions of standard floor lamp designs need not be materially altered to accommodate the receiver and the presence of the latter is not readily apparent upon viewing the lamp.

Another advantageous feature of this invention resides in the provision of a combined floor lamp and radio receiving set wherein the several parts of the radio receiver, including the variable condensers, are grouped together to form a chassis unit assembly in the pedestal of the lamp substantially midway between the base and shade of the lamp.

Another object of this invention resides in the provision of a combined floor lamp and radio receiving set wherein the pedestal of the lamp construction is formed of two sections and wherein the chassis unit assembly of the radio receiving set is interposed between adjacent ends of the sections.

Still another advantageous feature of this invention consists in the provision of a construction of the type set forth in the preceding paragraph wherein the chassis unit of the radio receiving apparatus is detachably secured to the upper end of the lower section of the pedestal and wherein the upper section of the pedestal is removably secured to the chassis unit.

Still another object of this invention resides in mounting a loud speaker unit in either or both the base section of the lamp or in the intermediate section containing the chassis unit and also consists in mounting a tuning control element for the variable condensers on the chassis unit independently of the upper section of the pedestal. As a result, the upper section of the pedestal may be removed without interfering with the performance of the radio receiving set.

A still further object of this invention consists in the provision of a radio receiving chassis unit assembly embodying a combined volume control rheostat and "on-off" switch in addition to the variable condensers previously mentioned.

Still another feature of this invention resides in rotatably supporting a pair of tuning dial members on the chassis unit beneath the lower end of the upper section of the pedestal for rotation independently of each other about the axis of the pedestal and respectively operatively connected to the variable condensers and rheostat for actuating the latter.

A still further advantageous feature of the present invention resides in the provision of a construction wherein the loud speaker of the radio receiving set is embodied in the intermediate section of the lamp construction in compact relationship to the chassis unit and wherein the power transformer, rectifier, and amplifier tubes are housed in the base of the lamp construction.

In addition to the foregoing, the present invention contemplates a combined lamp and radio receiving set wherein the upper section of the pedestal forms a support for a shade unit embodying a loud speaker assembly which may be an addition to the loud speaker assembly previously mentioned.

With the foregoing, as well as other objects in view, the invention resides in the novel construction of the parts which not only lend themselves to economical manufacture but, in addition, permits the same to be readily assembled or disassembled for servicing. This construction will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is a side elevational view of a combined lamp and radio receiving set constructed in accordance with this invention;

Figure 2 is a sectional view taken through the intermediate section and the base section of the lamp construction shown in Figure 1 and illustrating a radio receiving set having the parts thereof distributed in said sections;

Figure 3 is a sectional view taken through the shade unit of the lamp and illustrating a speaker assembly mounted in the shade unit;

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

Figure 5 is a sectional view taken substantially on the plane indicated by the line 5—5 of Figure 2;

Figure 6 is a circuit diagram illustrating the various parts of the circuit distributed in different sections of the lamp;

Figure 7 is a side elevational view of the construction as it would appear when the shade and top section of the pedestal are removed;

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

Figure 9 is a wiring diagram of the embodiment shown in Figure 3.

Referring now more in detail to the drawings, it will be noted that I have illustrated in Figure

1 a combined lamp and radio receiving set comprising a base section 10, a shade section 11, and an intermediate section 12 supported substantially midway between the shade and base sections. In addition, the lamp construction is provided with a pedestal 13 comprising a pair of aligned sections 14 and 15 in the form of tubes. The intermediate section 12 is supported on the upper end of the bottom section 14 of the pedestal and the lower end of the latter is removably secured to the base 10 of the lamp. The shade section 11 of the lamp is secured to the upper end of the top section 15 of the pedestal and the lower end of this section is detachably secured on the intermediate section 12 of the lamp.

The base 10 of the lamp is provided with a bottom wall 16 in the form of a disc having an opening 17 through the center thereof and having the periphery detachably secured to an annular appearance ring 18 by means of the screws 19. The appearance ring 18 is removably secured to a spider 20 positioned in the base 10 at the upper end of the latter. Upon reference to Figure 5, it will be noted that the arms 21 of the spider extend radially outwardly to a point adjacent the side walls of the base and are secured to the appearance ring 18 by means of spacers 22.

The parts within the base 10 are concealed by a cover 23 having the lower end seated against an annular shoulder formed on the appearance ring 18 and having the upper end bearing on the top of the spider 20. The upper wall of the cover 23 is formed with an enlarged opening through the center thereof for receiving a ring 24 which, in turn, is secured to the spider by means of the fastener elements 25. The periphery of the ring 24 is threaded for receiving a nut 26 which serves to clamp the cover against the spider 20.

In the specific embodiment of the invention illustrated herein, the parts of the wiring diagram enclosed by the line 27 in Figure 6 are located in the base 10 and are secured in any suitable manner to the bottom wall 16 of the base. Among the parts secured to the bottom wall 16 are the power transformer 28, amplifier tube 29, rectifier tube 30, filter condensers 31, and A. F. output transformer 32. These parts are electrically connected to a socket 33 having a detachable plug 34 which, in turn, is electrically connected to the radio receiving parts in another section of the lamp. The arrangement is such that the instrumentalities of the radio receiving set in the base may be removed as a unit with the bottom wall 16 of the base upon disengaging the plug 34 from the socket 33.

The lower end of the bottom section 14 of the pedestal is secured to a fixture 35 which, in turn, is secured to the top of the ring 24 by means of the fastener elements 25. The upper end of the section 14 is fashioned to form a seat for engagement with the lower end of the intermediate section 12 of the lamp and is removably secured to the latter by means of a tie bolt 37. The tie bolt 37 extends upwardly through a central opening formed in the spider 20 and projects through the tube forming the lower section 14 of the pedestal. The tie bolt is provided with a head 38 at the lower end having a slot therein adapted to be engaged with a screw driver or other suitable implement insertable through the opening 17 in the bottom wall of the base.

The intermediate section 12 of the lamp comprises a casing 39 having a bottom wall 40 provided with a depending reduced annular hub portion 41 adapted to have a seating engagement with the upper end of the lower section 14 of the pedestal. The top of the casing 39 is provided with a removable top wall 42 in the form of a disc having the periphery seated upon an annular shoulder 43 extending inwardly from the side wall 44 of the casing and having a relatively large opening 45 through the center thereof. Secured to the portion of the top wall 42 surrounding the opening 45 is a ring 46 having threads on the periphery thereof for detachably securing a disc 47 in seating relationship with the top wall 42 of the casing. The disc 47 forms a table top and is serviceable to support articles of different nature on the lamp.

The top wall 42 of the casing 39 is removably held in place by means of a spider 48 having a hub portion 49 extending into the hub portion 41 of the casing and threadedly engaged by the upper end of the tie bolt 37. In addition, the spider is provided with radially outwardly extending arms 50 having vertically upwardly projecting extensions 51 adjacent the side walls of the casing and detachably secured to the top wall 42 by means of the fastener elements 52. The construction is such that the tie bolt 37 cooperates with the spider 48 to secure the casing 39 and removable top wall of the latter to the upper end of the bottom section 14 of the pedestal.

Suspended from the top wall 42 of the casing 39 is a plate 53 having generally radially extending vertical partitions 54 projecting upwardly from the top surface thereof and provided with lugs 55 at the outer ends which are removably secured to the underside of the top wall 42 by means of the fastener elements 56. Secured to the central portion of the plate 53 is a casting 57 having a tubular portion 58 extending upwardly through the ring 46 with its axis concentric with the extended axis of the pedestal sections.

According to the present invention, the various parts of the radio receiving circuit surrounded by the line 59 in the diagram shown in Figure 6 are carried by the plate 53 and form a chassis unit assembly. Among the parts carried by the plate 53 are three variable condensers 60 having the usual stator plates 61 and the rotor plates 62. The shafts 63, upon which the rotor plates of the condensers are respectively secured, extend vertically and are spaced from each other in concentric relationship to the axis of the tube 58. Each shaft 63 has a pinion 64 secured to the upper end thereof and these pinions mesh with a central driving gear 65 mounted on the casting 57 for rotation about the axis of the tubular portion 58 of the casting.

The gear 65 is rotated from a position above the table top 47 by means of a tuning dial 66 secured to the upper end of a bushing 67 which, in turn, is rotatably sleeved on the tubular portion 58 of the casting. The lower end of the bushing 67 is secured to a gear 69 which, in turn, meshes with a pinion 70 rotatably mounted on a vertical stub shaft 71 suitably supported on the casting 57. A pinion 72 of relatively small diameter is also rotatably mounted on the shaft 71 beneath the pinion 70 and meshes with one of the condenser gears 64 which also meshes with the center gear 65. Inasmuch as the remaining condenser gears 64 also mesh with the center gear 65, it follows that the condenser gears 64 are simultaneously adjusted upon rotation of the dial 66. From the foregoing, it will be seen that the gearing between the dial 66 and the rotors of

the condensers is of the speed reducing type so that the condenser rotors may be accurately tuned from the dial.

In addition, a combined volume control rheostat and "off-on" switch 74 are among the parts of the radio receiving set carried by the plate 53. Upon reference to Figure 2, it will be noted that the rheostat 74 is provided with a downwardly extending shaft 75 operatively connected to the lower end of a vertical shaft 76 through the medium of gearing 77. The shaft 76 is journalled in the casting 57 and is provided with a pinion 78 at the upper end thereof adapted to mesh with an internal gear 79 secured to a second dial control disc 80. The control disc 80 is positioned directly above the dial 66 and is supported for independent rotation about the axis of the tubular portion 58 of the casting.

In Figure 2 of the drawings, I have illustrated a speaker unit 81 as also supported in the casing 39. The speaker cone 82 faces upwardly and is detachably secured to the underside of the plate 53 by means of the fastener elements 83. The hub portion 84 of the speaker extends into the hub portion 49 of the spider 48. When installing the speaker in the position mentioned aforesaid, the bottom wall 40 and the side wall 44 of the casing are perforated, as at 85, to permit the passage of sound.

It follows from the above that the chassis unit of the radio receiving set and the speaker form a compact assembly capable of being removed as a unit. Attention is called to the fact at this time that those parts of the radio receiving set in the casing 39 to be connected to the parts in the base are electrically connected to a plug 86 located in the upper end of the bottom section 14 of the pedestal. The plug 86, of course, detachably engages a socket 87 which is electrically connected to the proper parts in the base 10 of the lamp. With the above construction, it will be noted that disengagement of the tie bolt 37 from the hub 49 of the spider 48 permits the casing 39 and chassis unit, including the speaker 81, to be removed as an assembly.

The upper section 15 of the pedestal 13 has a ring 89 secured to the lower end thereof by means of the fastener elements 90. The lower end of the ring is counterbored and threaded for connection with the upper end of the tubular portion 58 on the casting 57. The arrangement is such that the section 15, together with the lamp shade assembly supported thereby, may be readily removed from the intermediate section 12, if desired. Removal of the section 15 of the pedestal and the associated lamp shade assembly 11 does not interfere with the operation of the radio receiving apparatus, previously described, and, therefore, the construction may be converted from a lamp to a simple radio table or stand. In the event the section 15 of the pedestal is dispensed with, it will, of course, be advantageous to provide a finishing member on the upper end of the tube 58. Such a member is shown in Figure 7 by the reference character 91.

As shown in Figures 3 and 9, the upper end of the pedestal is threaded for engagement with a tubular fixture 93 which, in turn, supports the lamp shade 94 and the usual illuminating means 95. In the present instance, the tubular fixture 93 also supports a speaker assembly 96. This assembly includes a power transformer 97, a rectifier tube 98, an amplifier tube 99, and a speaker cone 100. These elements are electrically connected to a plug 101 located in the upper end of the tube 58 and adapted to detachably engage a cooperating socket 102 which, in turn, is electrically connected to the required radio receiving parts in the chassis unit assembly, previously described as supported in the casing 39. The manner in which this connection may be accomplished is shown by the dotted lines in Figures 6 and 9. It will, of course, be understood that the speaker assembly 96 in the shade unit may either be used in addition to the speaker assembly 81 in the casing 39 or may be substituted for the latter speaker. In the event it is substituted for the speaker assembly 81, the power unit in the base may also be eliminated.

In Figure 8 of the drawings, I have shown a slight modification wherein the top wall 42' of the casing 39' is removably secured to the annular shoulder 43' at circumferentially spaced points by means of fastener elements 105. The construction is such as to permit the chassis unit assembly, including the speaker, to be detached from the casing by removing the top wall 42'. It will, of course, be understood that the cover disc 47 must be removed before access can be obtained to the fastener elements 105. This cover disc is threadedly mounted on the ring 46 so as to permit the same to be readily removed when desired. It may also be pointed out that in this embodiment of the invention, the spider 48 may be entirely eliminated, if desired. In the event the spider 48 is eliminated, the upper end of the tie bolt 37' may be secured directly to the lower end of the hub portion 41 of the casing 39'.

In the event the embodiment shown in Figure 8 is used, it is desirable to provide a second detachable plug connection between the parts of the radio circuit in the base and the parts of the radio circuit in the chassis unit. A detachable plug for this purpose is shown in Figure 8 as having a socket 87' electrically connected to the plug 86 in the upper end of the pedestal section 14 and as having a plug 86' electrically connected to the parts of the radio receiving circuit in the chassis unit. The detachable plug 86' and socket 87' are located in such a position in the casing 39' to be readily accessible upon removing the top wall 42' of the casing.

Thus, from the foregoing, it will be observed that I have provided a novel construction of combined article of furniture and radio receiving apparatus. It will also be noted that the construction shown is such as to permit its optional use as a radio table or as a floor lamp. In either case, the parts of the radio receiving set are compactly distributed in the several sections of the article of furniture to not only afford efficient operation of the radio circuit, but to also provide for obtaining a design having a neat and pleasing appearance. In addition, it will be observed that the construction is such as to permit readily assembling and removing the parts of the radio receiving set.

What I claim as my invention is:

1. In a combined article of furniture and radio receiving set, an article of furniture provided with a top wall having an opening therethrough, a chassis unit for a radio receiving set suspended from the top wall beneath the latter and including an adjustable part, an upright member extending from the chassis unit through the opening in the top wall, a control member rotatably mounted on the upright member at a point above the top wall and connected to the adjustable part for actuating the latter, and a pedestal section having a lamp shade unit at

the top thereof and having means at the lower end detachably secured to said upright member.

2. In a combined article of furniture and radio receiving set, an article of furniture provided with a top wall having a central opening therethrough, a chassis unit for a radio receiving set suspended from the top wall beneath the latter, said chassis unit including a variable condenser and a rheostat, an upright member extending from the chassis unit through the opening in the top wall, a pair of control members supported one above the other on the upright member for rotation independently of one another about the axis of the upright member and positioned above the top wall, means respectively connecting the control members to the condenser and rheostat for independently actuating the latter elements, and a pedestal section having the lower end removably secured to the upright member above the control members and having a shade unit supported on the upper end thereof.

3. In a combined article of furniture and radio receiving set, an article of furniture provided with a top wall having an opening therethrough, a chassis unit for a radio receiving set suspended from the top wall beneath the latter and including an adjustable part, a loud speaker unit also carried by the top wall beneath the latter, an upright member extending from the chassis unit through the opening in the top wall, a pedestal section having the lower end detachably secured to the upper end of the upright member and having a lamp shade supported on the upper end thereof, and a tuning control element mounted on the upright member beneath the pedestal section independently of the latter and operatively connected to the adjustable part of the radio receiving circuit for actuating said part.

4. In a combined lamp and radio receiving set, a base unit, a lamp shade unit, a pedestal supporting the lamp shade unit from the base and comprising aligned tubular sections having the adjacent ends spaced from each other, a casing supported by the pedestal between the adjacent ends of the pedestal sections, and radio receiving apparatus having certain parts enclosed in said casing and having other parts carried by one of said units and electrically connected to the parts aforesaid.

5. In a combined lamp and radio receiving set, a base, a lamp shade unit, a pedestal supporting the lamp shade unit on the base and comprising aligned tubular sections having the adjacent ends spaced from each other, a casing carried by the pedestal between the adjacent ends of the pedestal sections and having a top wall provided with an opening therethrough in alignment with the pedestal sections, an upright member located between the pedestal sections in alignment therewith and having the upper end projecting through the opening in the top wall of the casing and connected with the lower end of the upper pedestal section, a plurality of radio receiving parts distributed in said casing and comprising a variable condenser, and a control element rotatably mounted on the upright member above the top wall of the casing and operatively connected to the variable condenser.

6. In a combined lamp and radio receiving set, a base, a pedestal section extending upwardly from the base, a casing supported on the upper end of the pedestal and having a top wall provided with an opening therethrough, an upright member supported in the casing in alignment with the pedestal section and projecting upwardly through the opening in the top wall of the casing, a second pedestal section removably secured to the upper end of the upright member, a plurality of variable condensers positioned around the upright member in concentric relation to the latter, a gear mounted for rotation about the axis of the upright member and operatively connected to each of the condensers for simultaneously actuating the latter, and a control member mounted on the upright member above the table top for rotation about the axis of the upright member and operatively connected to said gear.

7. In a combined lamp and radio receiving set, a base, a pedestal section extending upwardly from the base, a casing removably supported on the top of the pedestal section and having a top wall provided with an opening therethrough, an upright member supported in the casing in alignment with the pedestal section and having the upper end extending through the opening in the top wall of the casing, a chassis unit for a radio receiving set housed in said casing and including a variable condenser and a rheostat, a pair of control members supported one above the other on the upright member for rotation independently of one another about the axis of the upright member and located above the top wall of said casing, means respectively operatively connecting the control members to the variable condenser and rheostat, and a second pedestal section detachably secured to the upper end of the upright member and having a lamp shade unit supported on the upper end thereof.

8. In a combined lamp and radio receiving set, a base, a lamp shade unit, a pedestal supporting the lamp shade unit on the base and comprising aligned tubular sections having the adjacent ends spaced from each other, a casing carried by the pedestal between the adjacent ends of the pedestal sections, a chassis unit for a radio receiving set supported within said casing and having parts requiring adjustment, and a pair of control members supported above the casing for rotation independently of each other about the axis of the pedestal and respectively operatively connected to the parts of the radio receiving circuit requiring adjustment.

9. In a combined lamp and radio receiving set, a base, a lamp shade unit, a pedestal supporting the lamp shade unit on the base and comprising aligned tubular sections having the adjacent ends spaced from each other, a casing carried by the pedestal between the adjacent ends of the tubular sections and having a top wall provided with an opening therethrough, a chassis unit for a radio receiving set supported in the casing and having parts requiring adjustment, a loud speaker unit also located in the casing beneath the chassis unit, a pair of control members rotatably supported above the top wall of the casing and below the lower end of the upper pedestal section, and means extending through the opening in the top wall of the casing respectively connecting the control members to the parts of the chassis unit requiring adjustment.

10. In a combined lamp and radio receiving set, a base, a lamp shade, a pedestal supporting the lamp shade from the base and comprising aligned vertical sections having the adjacent ends spaced from each other, an intermediate section embodying a casing supported by the pedestal between the adjacent ends of the vertical sections, a plurality of parts of a radio receiving circuit enclosed in the casing and certain of the

parts requiring adjustment, means detachably supporting the lower end of the upper vertical section on the intermediate section, and a pair of control members supported independently of the last named means on the intermediate section above the casing for rotation about the axis of the pedestal and respectively operatively connected to the parts of the radio receiving circuit in the casing requiring adjustment.

11. In a combined lamp and radio receiving set, a base, a lamp shade unit, a pedestal supporting the lamp shade unit from the base and comprising aligned tubular sections having the adjacent ends spaced from each other, an intermediate section embodying a casing supported by the pedestal between the adjacent ends of the tubular sections, a plurality of parts of a radio receiving circuit enclosed in the casing on the intermediate section and additional parts of the radio receiving circuit supported in the lamp shade unit, means electrically connecting the parts in the lamp shade unit to the parts in the casing including detachable plug and socket means, and means detachably securing the lower end of the upper tubular section to the intermediate section.

12. In a combined lamp and radio receiving set, a base, a lamp shade unit, a pedestal supporting the lamp shade unit from the base and comprising aligned tubular sections having the adjacent ends spaced from each other, an intermediate section embodying a casing supported by the pedestal between the adjacent ends of the tubular sections, a plurality of parts of a radio receiving circuit enclosed in the casing on the intermediate section and additional parts of the radio receiving circuit housed in the base, means electrically connecting the parts of the radio circuit in the base to parts of the radio receiving circuit in the casing including detachable plug and socket means, other parts of the radio receiving circuit supported in the lamp shade unit and electrically connected to parts of the radio receiving circuit in the casing by means including a detachable plug and socket device, means for removably securing the lower end of the upper tubular section to the intermediate section, one of the said parts of the radio receiving circuit being adjustable and control means mounted on the intermediate section above the casing and operatively connected to said adjustable part of the radio receiving circuit.

13. In a combined lamp and radio receiving set, a base, a pedestal section extending upwardly from the base, a second section removably supported on the top of the pedestal section and embodying a casing provided with a removable top wall, a chassis unit for a radio receiving set suspended from the removable top wall of the casing and including a variable condenser, a control member supported on the second section above the top wall of the casing for rotation and operatively connected to the variable condenser, and a second pedestal section detachably secured to the second section independently of the control member and having a lamp shade unit supported on the upper end thereof.

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