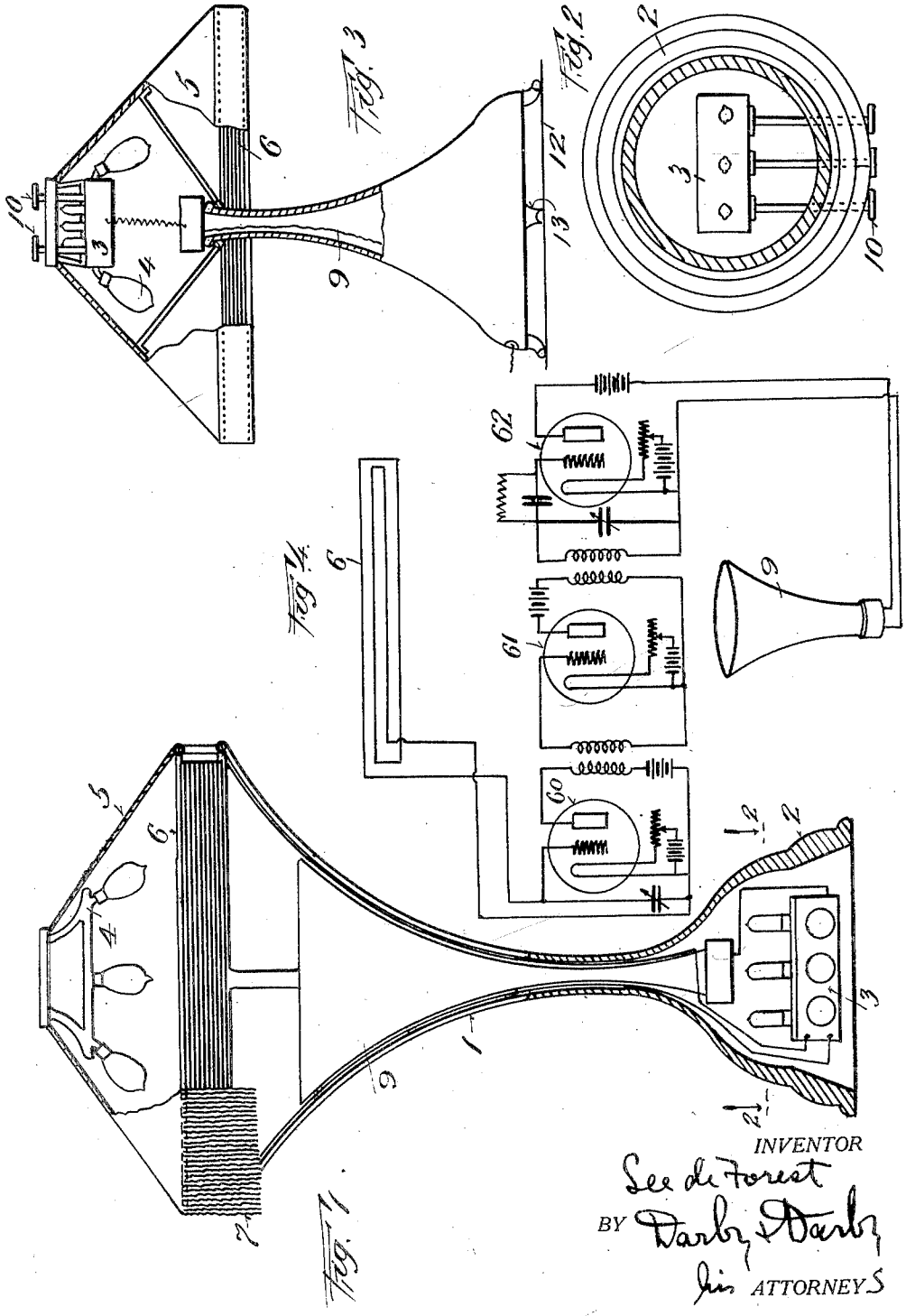
July 9, 1929. L. DE FOREST 1,720,544

RADIO RECEIVING APPARATUS

Filed April 28, 1923 2 Sheets-Sheet 1



INVENTOR

Lee de Forest

BY Darby & Darby

his ATTORNEYS

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RADIO RECEIVING APPARATUS

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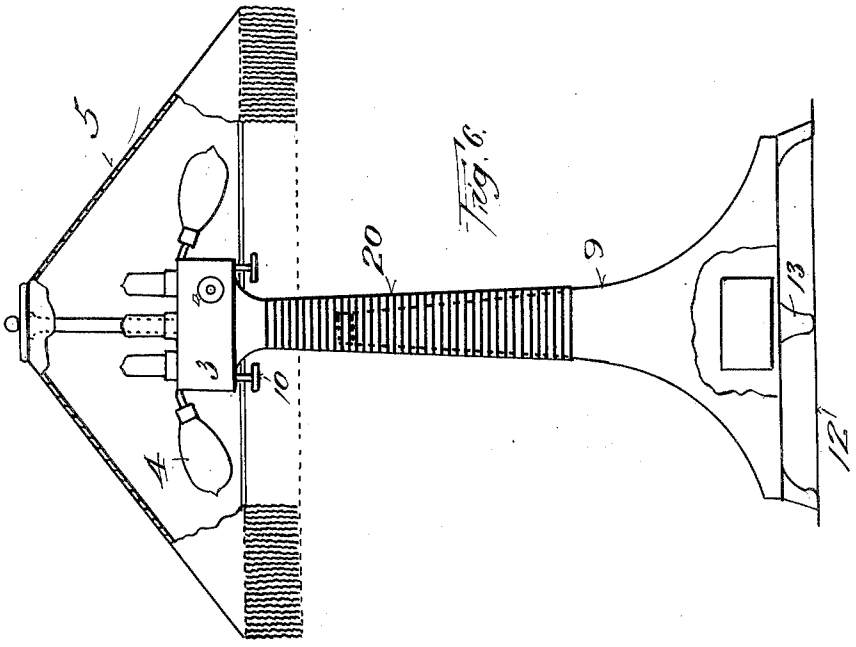


Fig. 16.

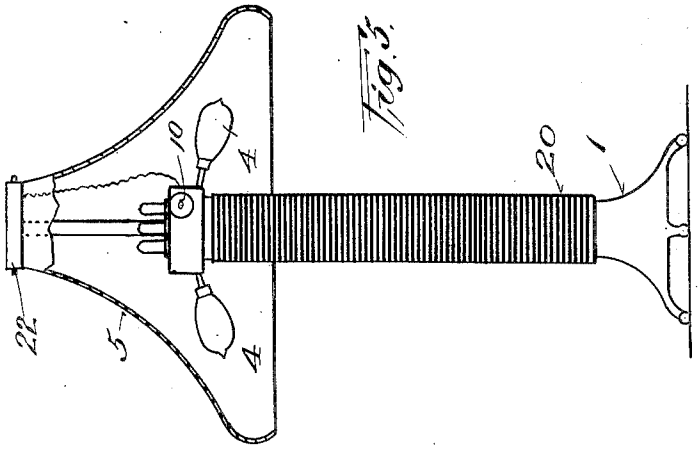


Fig. 3.

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UNITED STATES PATENT OFFICE.

LEE DE FOREST, OF NEW YORK, N. Y., ASSIGNOR TO DE FOREST RADIO TELEPHONE & TELEGRAPH COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF DELAWARE.

RADIO RECEIVING APPARATUS.

Application filed April 28, 1923. Serial No. 635,335.

This invention relates to radio receiving apparatus and has for its object the provision of a radio receiving apparatus which is or may be at the same time ornamental or disguised in standard ornamental furniture.

A further object of the invention is to provide a self-contained radio receiving set and lamp shade.

Further objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth in the accompanying drawings and finally pointed out in the appended claims.

Referring to the drawings:

Figure 1 is a view in elevation, partially in section, of a radio receiving set embodying my invention.

Fig. 2 is a sectional view taken on line 2—2, of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a slightly modified arrangement embodying my invention.

Fig. 4 is a diagrammatic view illustrating the circuit arrangement employed in accordance with my invention.

Figs. 5 and 6 are views in elevation showing still further modified arrangements embodying my invention.

The same part is designated by the same reference character wherever it occurs throughout the several views.

It is among the special purposes of my present invention to provide a combined lamp shade, radio receiving set, antenna and loud speaking horn in such a way that it is possible, with an artistic lamp shade or the like, to receive radio communications such as code or broadcast music or news programs, utilizing an ordinary lamp structure for this purpose without in any way impairing its lighting properties.

Referring to Fig. 1, I have illustrated one arrangement wherein the lamp is shown by reference character 1 and has the usual base 2 in which the radio receiving apparatus, diagrammatically illustrated at 3, is located. It is understood that the radio receiving apparatus is complete in so far as the detector or amplifying equipment is concerned. In the present invention where it is possible to operate vacuum tubes in radio receiving or amplifying apparatus from dry cells, it will be readily apparent that the apparatus may be arranged in an exceedingly small space.

The lamp stand 1, in the form shown in Fig. 1, has the lamps 4 at the top thereof and the shade 5 has a frame around which is wound the antenna wire 6 preferably in the form of a loop antenna. The lamp shade fringe 7 may be utilized to conceal the loop antenna. The loop antenna is connected by suitable wires which extend through the lamp standard to the receiving apparatus. The outlet from the radio receiving or amplifying apparatus leads to the loud speaking horn 9 which is positioned within the lamp standard and conforms with the shape thereof whereby sound waves are directed to the lamp shade and deflected thereby or allowed to be dispersed therethrough.

Control of the radio receiving apparatus may be secured in any suitable manner, for example, by means of control handles 10 which extend through the base 2, as shown in Fig. 2. In the lamp construction of Fig. 3 the same features are embodied in that the antenna 6 is supported at the lower edge of the lamp shade 5. In this arrangement, however, the loud speaking horn 9 is in itself the lamp standard, and the mouth of the horn is offset from the table or support 12 by means of suitable legs 13 supporting the entire lamp structure. In this arrangement the radio receiving apparatus 3 is mounted in the top of the lamp shade and the control thereof is effected by suitable knobs or handles 10 extending through the top of the lamp structure.

In Fig. 5 I show a lamp structure of a different design and appearance wherein the lamp standard 1 has wound thereon or therein a helical coil 20 which serves as the antenna, the coil being electrically connected with the receiving set 3 mounted at the top of the standard 1. In this arrangement the lamp shade 5 constitutes the loud speaking horn, the microphonic device being located as at 22. The control of the apparatus in this arrangement can be effected by handles 10 positioned on the radio receiving cabinet. In Fig. 6 I show a combination of the features of Fig. 5 and Fig. 3 in that the loud speaking horn 9 forms the lamp standard

which is offset from the supporting structure such as the table or the like 12, by suitable legs 13. The antenna 20 is either wound around or within the standard 9 and the radio receiving set 3 is mounted at the top of the standard control being connected by the handles 10 extending parallel to the axis of the standard.

It will be readily understood that any suitable radio receiving circuit may be employed in connection with the apparatus, and I have illustrated in Fig. 4 one simple arrangement of the radio frequency type wherein a loop antenna 6 is employed and audions 60 and 61 are employed for radio frequency amplification feeding to the audion detector 62 which controls the loud speaking horn 9.

Many other modifications and changes in details of construction of the lamp shade arrangement will readily occur to those skilled in the art, and I, therefore, do not desire to be limited or restricted to the specific structure selected for the purpose of illustration and hereinbefore described.

Similarly, many other types of radio receiving circuits may be employed in accordance with my invention without departing from the spirit and scope of my invention as defined in the claims, but having now set forth the objects and nature of my invention and having shown structures embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is:

1. In an article of utility of the type described the combination with a hollow standard and a sound and light reflecting member mounted thereon of a radio receiving device supported by said standard, means supported within said member and connected to said receiving device for intercepting radiant energy, a sound reproducing device in said hollow standard connected to said receiving device and means for producing light supported on said standard, said sound reproducing device and said means for producing light being arranged on said standard so that said reflecting member acts to direct both the sound and light waves therefrom.

2. In an article of utility of the type described the combination with a hollow horn shaped standard and sound reproducing means attached to the smaller end of said standard, of a light reflecting member on said standard, a loop antenna supported within the periphery of said member, and a radio receiving device mounted within said member and connected to said sound reproducing means and to said loop antenna.

In testimony whereof I have hereunto set my hand on this 25th day of April, A. D. 1923.

LEE DE FOREST.