June 9, 1925. 1,541,450

H. WALKER

RADIO LOUD SPEAKER RECEIVER

Filed Feb. 29. 1924

Fig. 1.

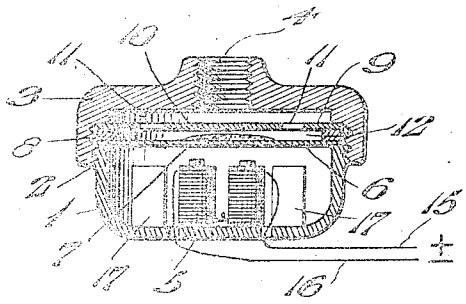


Fig. 2.

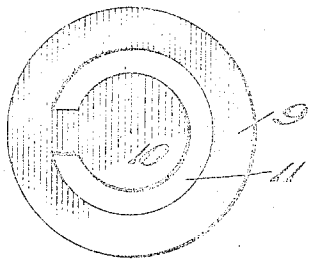


Fig. 3.

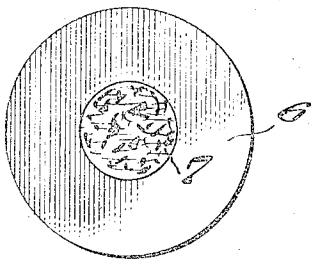
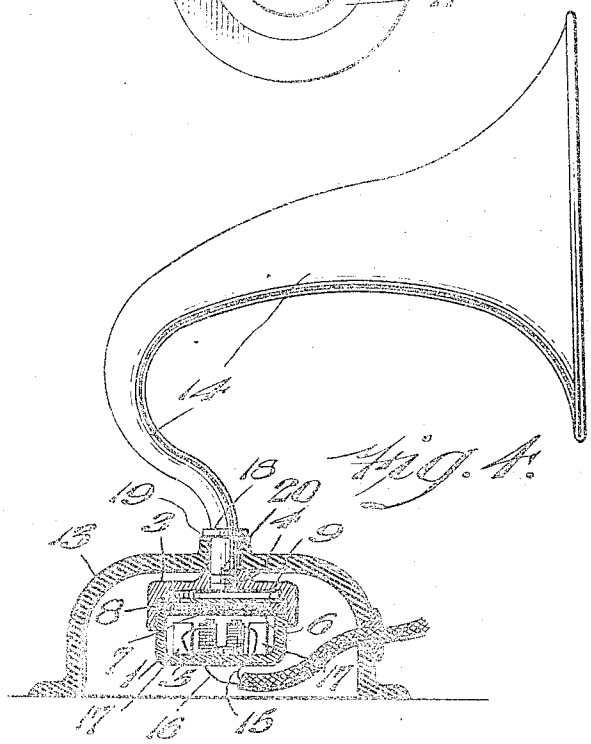


Fig. 4.



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UNITED STATES PATENT OFFICE.

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RADIO LOUD-SPEAKER RECEIVER.

Application filed February 29, 1924. Serial No. 695,884.

To all whom it may concern:

Be it known that I, HENRY WALKER, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented a certain new and useful Radio Loud-Speaker Receiver, of which the following is a specification.

This invention, generally stated, relates to radio equipment and has more especial relation to a loud speaker receiver therefor. My object is to provide novel means, whereby clearer, louder, and more accurate reproductions may be obtained and transmitted by a radio loud speaker receiver by a simple, practical, efficient and comparatively inexpensive arrangement of parts, which are concealed in the base of the loud speaker and are in no way detrimental to the appearance of conventional loud speaker horns. Other and further objects reside in the provision of and novel arrangement and combination of parts for attaining the foregoing object.

The invention consists of the novel features of construction and advantage hereinafter described and finally claimed.

The nature, characteristic features, and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part thereof, and in which:

Fig. 1 represents a vertical sectional view of a novel radio loud speaker receiver, embodying my invention.

Fig. 2 represents a detached view in plan of a novel upper diaphragm, having a vibratory tongue.

Fig. 3 represents a plan view of the lower diaphragm having a stiffened central portion, and

Fig. 4, represents a view in elevation, partly sectional illustrating the receiver shown in Fig. 1, as applied to a radio loud speaker horn.

For the purpose of illustrating my invention I have shown in the accompanying drawings several forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

Referring now to the drawings and more especially to Figs. 1, 2, and 3, 1 designates a lower shell or casing, exteriorly threaded at 2, to co-operatively receive the internally threaded lower part of an upper shell or casing, which is provided with a central tone passage 4, which is internally threaded. Located within the lower casing 1 are the coils 5, of any conventional type, and adapted to be wired with respect to a radio apparatus in any conventional manner. Positioned immediately above the electromagnets or coils 5, is a metal diaphragm 6, the central portion of which is stiffened as at 7. In practice, good results have been attained by the employment of a disc, of cork or similar material, having its upper surface slightly convex, as seen in Fig. 1, although other stiffening or stabilizing material may be employed. This diaphragm 6 is supported upon the top of the lower casing and spaced therefrom, by means of a ring 8, above which is a diaphragm 9 which is superimposed on said ring. The two diaphragms with the ring of metal or other material therebetween are clamped between the two casing elements 1 and 3, as clearly shown in Figs. 1 and 4. Th upper diaphragm has centrally cut therefrom a vibratory tongue 10, which tongue is spaced from the diaphragm proper by means of a curved slot 11. The tongue 10 is arranged concentrically of the diaphragm 9, and is in register or vertical alignment with the stiffened portion 7 of the diaphragm 6. In operation, the vibrations of the diaphragm 6 create impulses in the resonance chamber 12 and sound waves in said resonance chamber when impinging upon the vibrating tongue 10 instead of being confined and muffled have free egress through the slot 11 and result in well modulated, clear, and accurate reproductions. The receiver element in Fig. 4, is shown as positioned within the base 13 of a loud speaker horn 14, the positive and negative wires 15 and 16 being extended through the base wall to the magnets above described. The construction and function of the horse-shoe magnets 17 and the coils or electromagnets will be familiar to those skilled in the art. The horn or loud speaker 14, may be connected with its base and the upper casing section 3 in any suitable manner, but I preferably

employ the construction seen in Fig. 4, wherein the collar or shoulder 18, abuts on the top of the boss 19, and the lower threaded terminal 20, screws into the threaded opening 4, which results in a convenient and effective manner of assembling these elements.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiments thereof which have been found in practice to give satisfactory and reliable results, it is to be understood that the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A radio loud speaker receiver, comprising a casing element having a magnet and coils therein, a casing element having a tone passage therein and spaced apart diaphragms clamped between said casing elements of which one diaphragm has a central stiffened portion and the other has a vibratory tongue in register with said stiffened portion.

2. A radio loud speaker receiver, comprising a sectional casing, its lower portion having a magnet and coils therein, an upper portion having a tone passage therethrough and spaced apart diaphragms clamped between said casing sections, one diaphragm having a central stiffened portion and the other a vibratory tongue in register with said stiffened portion, and a ring interposed between said diaphragms.

3. A radio loud speaker receiver, comprising a casing section having a magnet and coils therein, a casing section having a tone passage therein and spaced apart diaphragms clamped between said casings, the lower diaphragm having a central stiffened, disc-like portion and the upper having a vibratory tongue in register with said stiffened portion.

4. A radio loud speaker receiver, comprising a casing section having a magnet and coils therein, a casing section having a tone passage therein and spaced apart diaphragms clamped between said casing sections, of which one diaphragm has a central stiffened, convexed, disc-like portion and the other has a vibratory tongue in register with said stiffened portion.

5. In a radio loud speaker receiver, a casing section, having a magnet and coils therein, a casing section having a tone passage therethrough, spaced apart diaphragms clamped between said casing sections of which one diaphragm has a central stiffened portion and the other has a vibratory tongue cut from the diaphragm body and having a passage partially surrounding said tongue, which tongue is in register with said stiffened part, a base within which said sections are contained, and a horn having its lower portion provided with a shoulder resting on said base and its lower end threaded into the upper of said casing sections.

In testimony whereof, I have hereunto signed my name.

HENRY WALKER.