

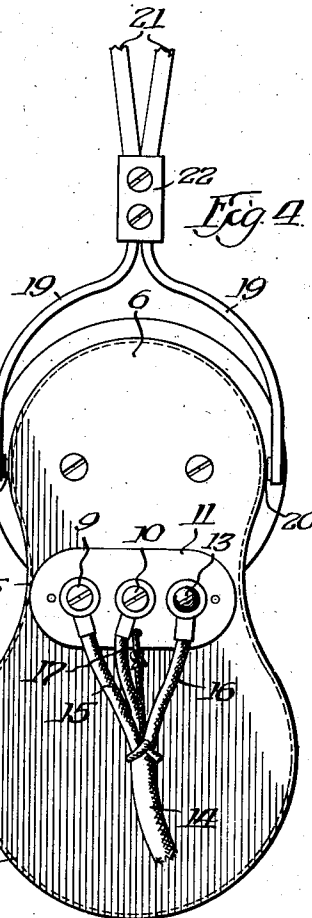
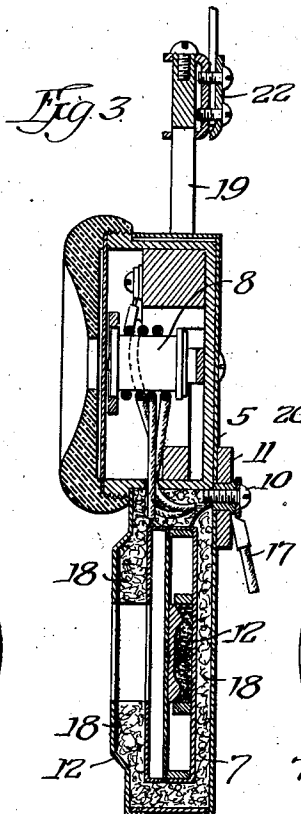
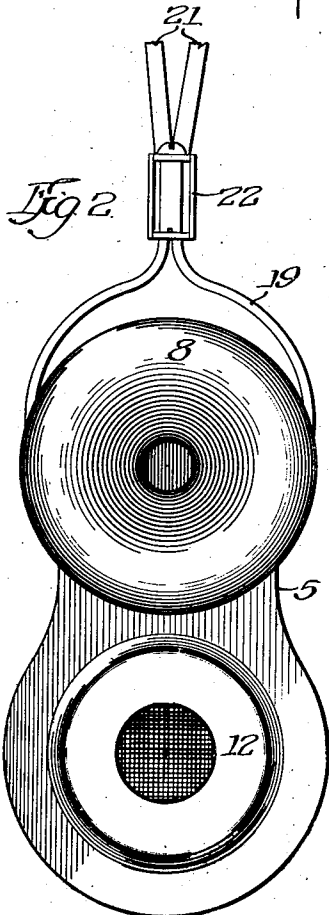
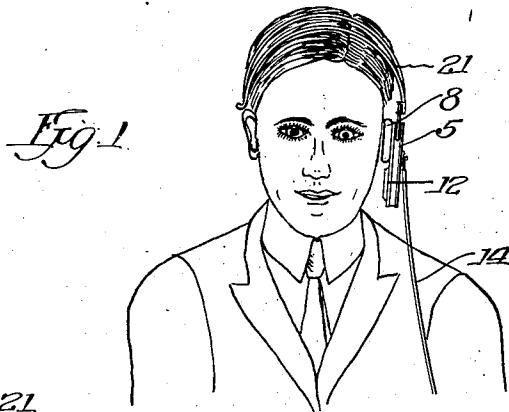
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O. HAGERUP

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COMBINATION RECEIVER AND TRANSMITTER TELEPHONE SET

Filed May 2, 1924



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OTTO HAGERUP, OF MAYWOOD, ILLINOIS.

COMBINATION RECEIVER AND TRANSMITTER TELEPHONE SET.

Application filed May 2, 1924. Serial No. 710,511.

To all whom it may concern:

Be it known that I, OTTO HAGERUP, a citizen of the United States, residing at Maywood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combination Receiver and Transmitter Telephone Sets, of which the following is a specification.

This invention relates to combination receiver and transmitter telephone sets and has reference more particularly to combination sets adapted to be supported on the head of the user.

Among the objects of the invention are to produce a device of the character named characterized by increased convenience, compactness, sensitiveness, freedom from interference, uniform volume of tone and maximum efficiency. Another object is to provide a device that may be suspended in such a way and in such a position that both hands of the user are left free. Another object is to provide a device wherein the transmitting may be done without speaking directly into the transmitter, which produces greater uniformity in the volume of tone and increased sanitary character of the transmitter by preventing the lodgment therein of offensive and insanitary matter from the breath of the user. A still further object is to provide a construction which shall reduce interference from extraneous noises in the transmitter.

Other objects and attendant advantages of the invention will be apparent to persons familiar with the art from the following detailed description, taken in connection with the accompanying drawing in which I have illustrated one practical and preferred embodiment of the invention, and wherein—

Fig. 1 is a front elevation showing the device in operative position on the head of the user;

Fig. 2 is a front elevation of the combined receiver and transmitter;

Fig. 3 is a central vertical longitudinal section through the combined receiver and transmitter; and

Fig. 4 is a rear elevation of the combined receiver and transmitter.

Referring to the drawing, 5 designates as an entirety a sheet metal casing so formed as to present an upper generally circular section 6 and a lower generally circular section 7. In the upper section 6 is mounted the receiver unit designated as an entirety

by 8, the circuit lines of which are connected to binding posts 9 and 10 mounted in a transverse bar or plate 11 on the back of the casing 5; and in the lower circular section 7 is mounted a microphone receiver unit designated as an entirety by 12, the circuit lines of which are connected to binding posts 13 and 10 on the back of the casing, the central binding post 10 accommodating the return or ground lines of both the receiver and transmitter. 14 designates the usual cord carrying the three circuit lines 15, 16 and 17 leading to the binding posts 9, 13 and 10 respectively. In practice the cord 14 is equipped with a plug (not shown) which may be connected into any of a plurality of spring jacks distributed about a district and connected to a telephone exchange. It will be noted that the housing or casing 5 is of such a shape that the cord 14 may readily be wrapped about the narrowed waist thereof and the entire equipment readily carried in the pocket of the user.

The transmitter unit 12 is mounted within and wholly surrounded by a body of felt 18 or other sound-deadening material. This is very effective to prevent "howling" and interference from extraneous noises.

The combined receiver and transmitter may be suspended from the head of the user by the simple means illustrated, comprising a forked bail or handle 19 pivoted at its lower end to pins or lugs 20 on opposite sides of the receiver section 6 of the casing, and a spring clasp 21 shaped to fit over the head and attached to the stem of the bail 19 by any suitable form of clip indicated at 22. When thus supported from the head of the user it will be observed that the receiver rests against the ear, while the transmitter is nearer the receiver but out of contact with the cheek, being immediately below and slightly forwardly of the ear. Also, by reason of the described construction the transmitter is suspended from the receiver in an elastic or flexible material, instead of being rigidly connected with the receiver as in known hand sets of this general character. Again, by reason of the described construction, only the lateral sound waves from the mouth strike the transmitter, by which a softer and more uniform volume of tone is transmitted, and by which also the transmitter is maintained in a much more sanitary condition than where

the breath of the speaker is directly blown into the transmitter. By reason of the flexible or pivotal connection of the instrument to the head-piece, it hangs substantially vertical, so that the transmitter lies at a sufficient distance from the cheek of the wearer to catch the sound waves and transmit the speech, while avoiding befoulement by vapors from the breath.

10 Finally, the device is manifestly useful and convenient to anyone requiring the free use of both hands, such as telephone operators, train despatchers, load despatchers, etc.

I claim—

15 1. A telephone head set, comprising, in combination, a casing, a transmitter and a receiver mounted in said casing in proximate relation, and means engageable with the head of a user for supporting said casing with the receiver against the user's ear and the transmitter disposed in proximity to, but spaced from, the user's cheek.

25 2. A telephone head set, comprising, in combination, a casing, a transmitter and a receiver mounted in said casing in proximate relation, and a head-piece attached at one end to said casing and shaped to fit over a user's head, said head-piece being adapted to hold the receiver against the user's ear and the transmitter in position to receive the sound waves produced by the user's voice.

35 3. A telephone head set, comprising, in combination, a casing, a transmitter and a receiver mounted in said casing in proximate relation, and a head-piece pivotally attached to said casing and adapted to suspend the receiver against the user's ear and the transmitter spaced from the user's cheek.

40 4. A combined telephone receiver and transmitter, comprising a casing shaped to provide substantially circular upper and

lower sections in proximate relation, a receiver unit mounted in said upper section, a transmitter unit mounted in said lower section, binding posts mounted in said casing substantially at the juncture of said upper and lower sections and operatively connected to said receiver and transmitter, and a cord carrying circuit lines connected to said binding posts.

5. A telephone head set, comprising, in combination, a casing shaped to provide substantially circular upper and lower sections in proximate relation, a receiver unit mounted in said upper section, a transmitter unit mounted in said lower section, a body of sound-deadening material entirely surrounding said transmitter unit, and a head clamp pivotally connected to, and suspending said casing.

6. A telephone head set, comprising, in combination, a casing shaped to provide substantially circular upper and lower sections, a receiver unit mounted in said upper section, a transmitter unit mounted in said lower section, a body of yielding sound-deadening material entirely surrounding said transmitter unit, binding posts mounted in the back of said casing substantially at the junction of said upper and lower sections and operatively connected to said receiver and transmitter, a cord carrying circuit lines connected to said binding posts, and a head clamp pivotally connected at its lower end to opposite sides of the upper section of said casing, whereby the latter is suspended substantially vertically, with said receiver lying against the user's ear and said transmitter disposed in proximate relation to, but spaced from, the user's cheek.

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