June 25, 1935. H. W. HELLMANN 2,005,973

APPARATUS FOR LISTENING IN ON TELEPHONE CALLS

Filed Jan. 4, 1933

Fig:1.

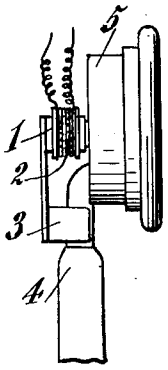


Fig:2.

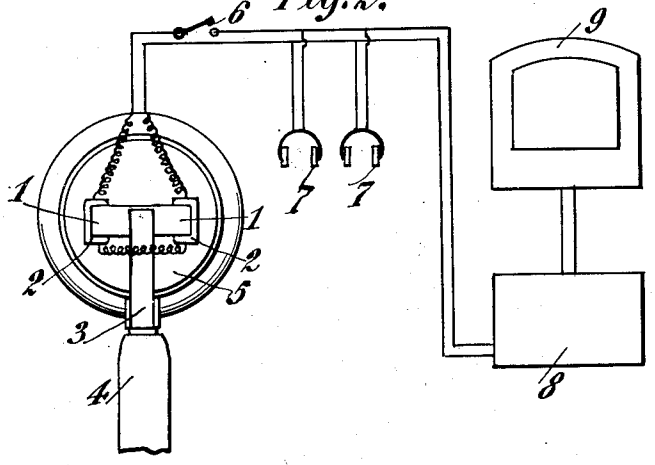


Fig:3.

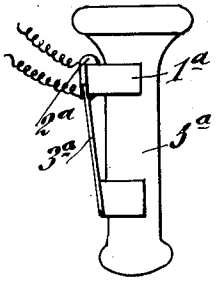


Fig:4.

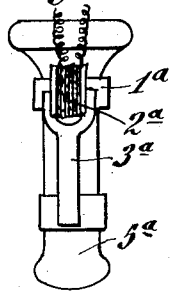


Fig:5.

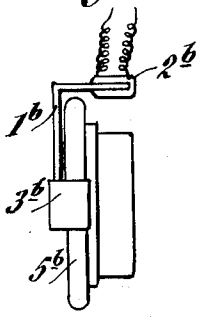
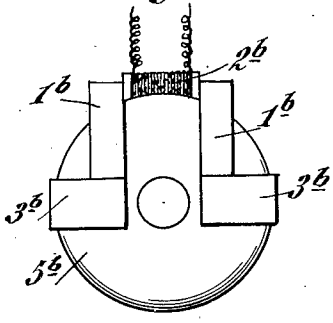


Fig:6.



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APPARATUS FOR LISTENING IN ON TELEPHONE CALLS

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Application January 4, 1933, Serial No. 650,114

2 Claims. (Cl. 179—1)

This invention relates to an apparatus for listening in on telephone calls. It is frequently desirable to have third persons listen in on telephone calls. To a certain extent, this object was obtained by the installation of hearing appliances on the receiver of the telephone or in an electrical connection therewith. However, such devices only incompletely fulfill that purpose because only a limited number of persons may listen in, or they necessitate an alteration or modification of the telephone apparatus or electrical connections which are not permissible and in many cases impossible.

The device of the present application obviates the above objections, and has marked technical and economical advantages. Thus, it permits of an unlimited number of persons listening in on a telephone conversation and does not require any electrical or mechanical changes or alterations in the usual telephone apparatus. Further, the device is of very simple construction and may be easily manipulated.

With the above and other objects in view, the invention consists in the improved apparatus for listening in on telephone calls, and in the form, construction and relative arrangement of its several parts as will be hereinafter more fully described, illustrated in the accompanying drawing and subsequently incorporated in the subjoined claims.

In the drawing wherein I have illustrated several simple and practical embodiments of my invention, and in which similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a side elevation showing one embodiment of the invention;

Fig. 2 is a rear elevation showing the device electrically connected with head phones, an amplifier and a loud speaker;

Fig. 3 is an elevation showing a slightly modified form of the device applied to another type of telephone receiver;

Fig. 4 is a view looking at right angles to Fig. 3;

Fig. 5 is a side elevation showing another alternative form of the device, and

Fig. 6 is a rear elevation of the latter embodiment of the invention.

In the operation of the magnetic system of the ordinary telephone receiver, there is produced, external to the receiver and adjacent thereto, a magnetic distribution field, which field is influenced or vibrates in correspondence with, or at the same frequency as the electrical pulsations induced by voice tones of the speaker. Therefore, if within this distribution field, there is positioned a magnetic iron core and a wire coil which offers a low magnetic resistance to the lines of force of the distribution field, currents of the same frequency will be induced in said coil as those which pass through the coils of the magnetic system within the receiver. If these induced currents of the wire coil external to the receiver are electrically connected with head phones, or with an amplifier and loud speaker, any desired number of persons may listen in on the telephone conversation. The loud speaker reproduction, as is customary in radio broadcast, can also be used for the broadcast of telephone conversations, so that in most cases the present radio receivers can be used for listening in on telephone conversations, thereby materially reducing the cost of the equipment.

In the accompanying drawing, I have shown several ways in which the above result may be accomplished.

Referring first to Figs. 1 and 2 of the drawing, the soft iron core 1 is associated with one or more induction coils 2, and is supported by means of the clamping device 3 upon the upper end of the handle or standard 4 which supports the receiver 5. The core 1 is so shaped that the ends thereof are positioned as closely adjacent as possible to the receiver casing so that as great a number as possible of the magnetic lines of force in the distribution field will pass through the coils 2.

The induction currents thus produced may, by suitable wiring be conducted to one or more head phones as indicated at 7, and also through the amplifier 8 to the loud speaker 9. Preferably, in the transmission circuit, a suitable switch 6 is arranged so that the head phones and amplifier and loud speaker can be operatively connected with the device or disconnected therefrom at will.

As shown in Figs. 3 and 4 of the drawing, in the application of my invention to the Bell type of hand receiver, a single coil 2a may be associated with the core 1a which is so shaped as to position its end closely adjacent to the receiver. The attaching device includes a flexible or resilient metal strip 3a, whereby the coil and the core may be adjusted into or out of the magnetic distribution field by manipulation of said metal strip 3a by the finger of the hand grasping the receiver 5a.

Figs. 5 and 6 of the drawing illustrates the application of another alternative form of the invention to the wall type of telephone receiver.

In this case, the coil 2b is mounted upon the central portion of the core 1b, the ends of the core being connected to the attaching clamps 3b, which are adapted to be engaged at diametrically opposite points upon the rim of the rear portion of the receiver 5b.

In each of the constructions above described, the specific form and arrangement of the core 1 and coils 2 is not important, so long as these parts are constructed and arranged whereby they will absorb the greatest possible number of lines of force of the magnetic distribution field around the receiver, while enabling the device to be readily applied to various types of telephone receivers without necessitating any changes or alterations in the usual construction thereof.

From the foregoing description considered in connection with the accompanying drawing, the construction, manner of operation and several advantages of the device will be clearly understood. It will be seen that I have provided a very simple attachment to telephone receivers which enables any desired number of persons to listen in on the telephone conversation, and which obviates the objections above noted to prior attempts to accomplish this result. While I have herein shown and described several simple and practical embodiments of the device, it is nevertheless to be understood that the essential features thereof may also be incorporated in various other alternative structural forms, and I therefore reserve the privilege of resorting to all such legitimate changes therein as may be fairly embodied within the spirit and scope of the invention as claimed.

I claim:

1. An attachment for telephones provided with a receiver having a magnetic distribution field, comprising a magnetic core, an induction coil associated with said core, a relatively rigid strip secured at one end to said core and extending at right angles therefrom, and clamping means carried by the other end of said strip to detachably mount the coil and core on the receiver in the magnetic field, said attachment when in applied position being movable with the receiver in the ordinary use of the telephone.

2. An attachment for telephones provided with a receiver having a magnetic distribution field, comprising a magnetic core, an induction coil associated with said core, a bar secured at one end to said core, and opposed spring clamping members secured to the other end of the bar for detachably mounting the core and coil on the receiver.

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