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HEARING AID ATTACHMENT FOR USE ON FRENCH TYPE TELEPHONES

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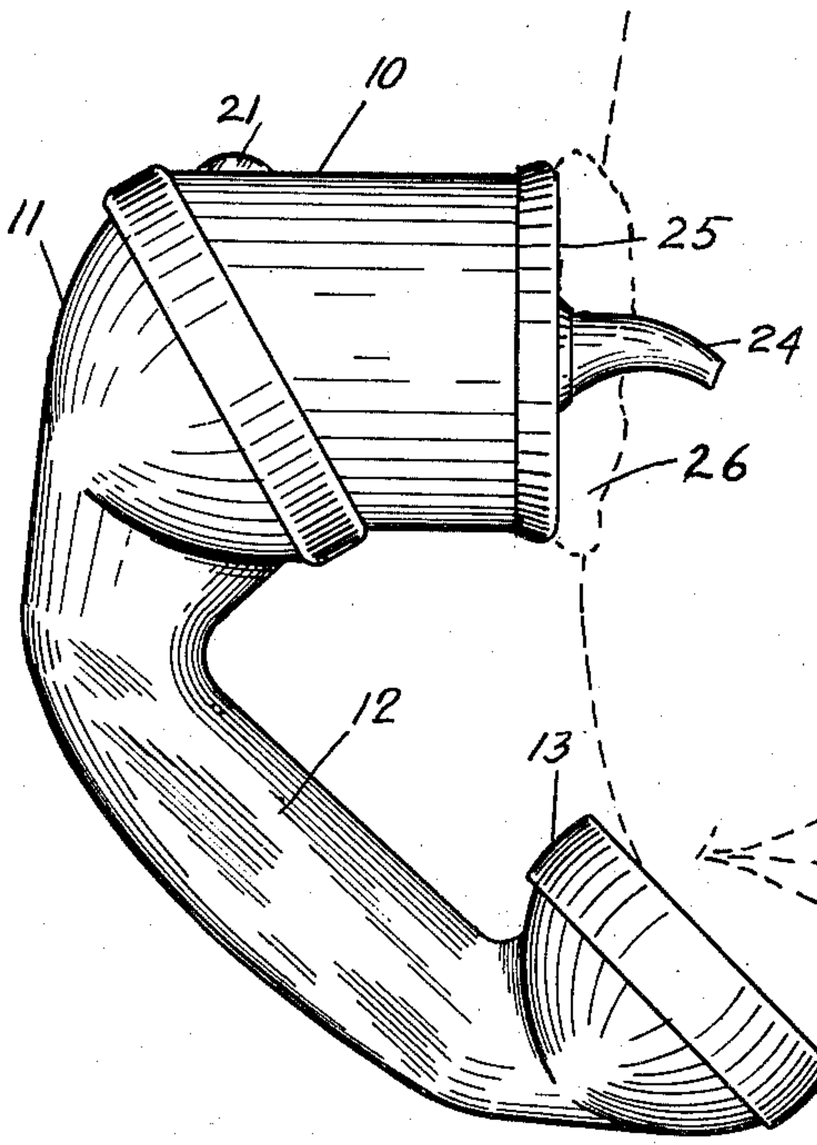

Fig. 1.

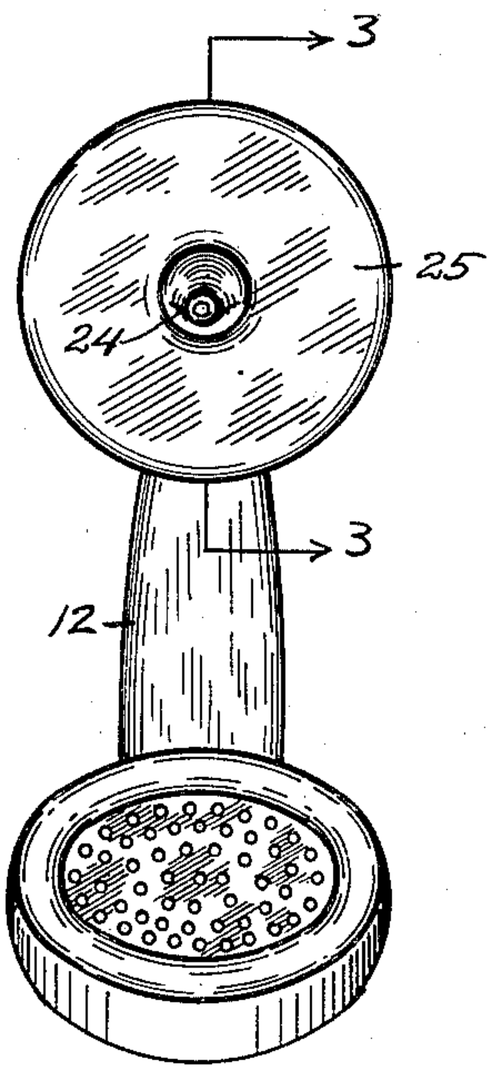

Fig. 2.

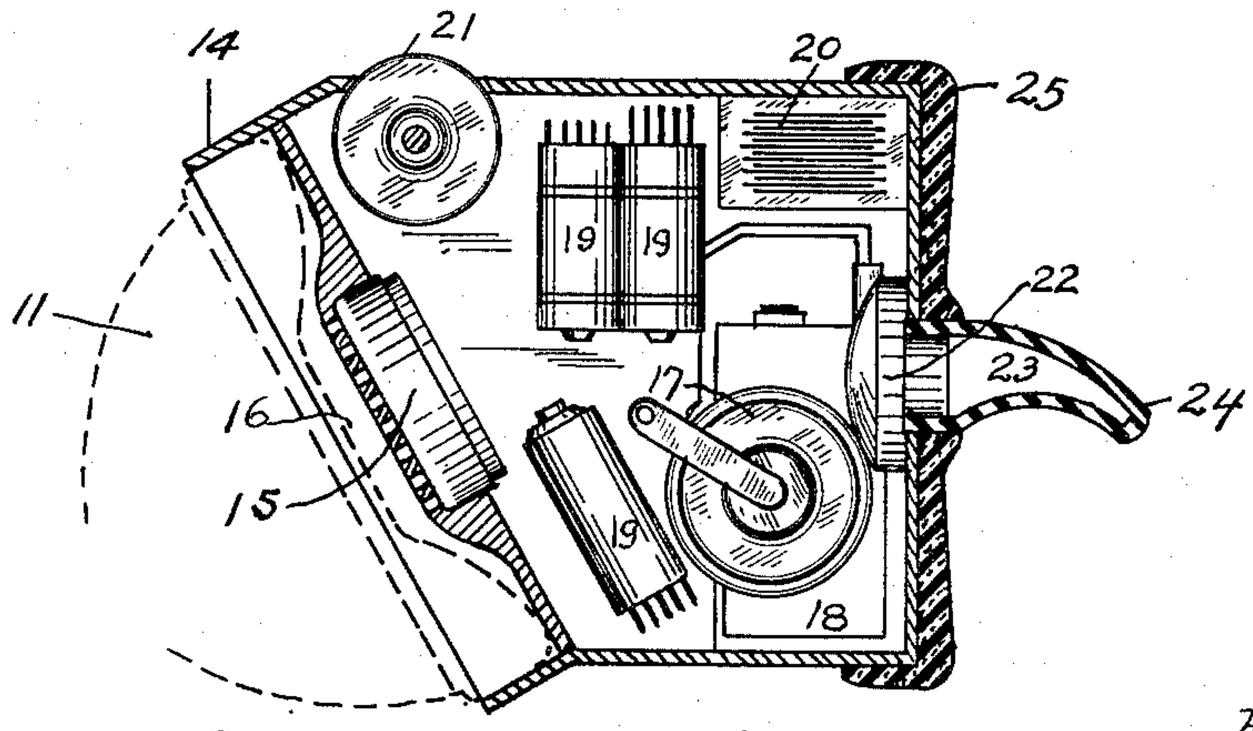

Fig. 3.

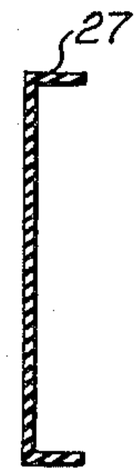

Fig. 5

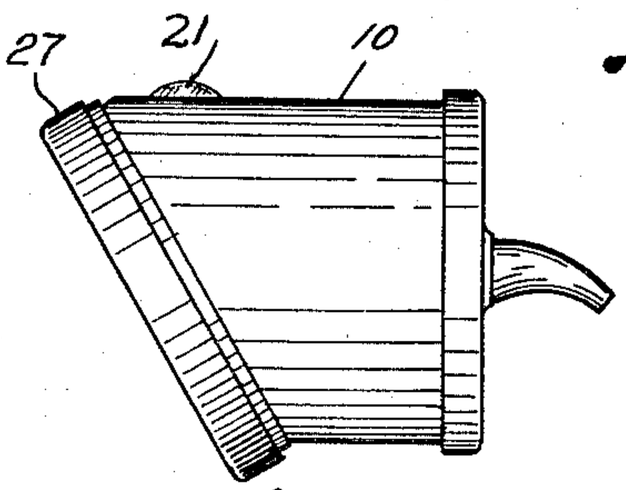

Fig. 4.

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HEARING AID ATTACHMENT FOR USE ON FRENCH TYPE TELEPHONES

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2 Claims. (Cl. 179—107)

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This invention relates to improvements in hearing aid devices for persons afflicted with defective hearing and more particularly to a device which may be attached to the receiver of a conventional telephone.

In prior art devices of this kind, the amplifiers employed have been of less sensitive types, and such devices have involved a plurality of separate units connected by cumbersome wiring. Also, where such devices may have been well adapted for hearing during telephone conversation, they have not been well adapted for ordinary conversation, or vice versa.

A primary object of this invention, therefore, is the provision of a hearing aid device for use with telephones which contains all of the necessary parts in a single compact casing.

Another object is the provision of a hearing aid device of the foregoing type which is highly sensitive to receive weak sonic signals and has a high degree of amplification.

Another object is the provision of a hearing aid device which may be detached from a telephone, when so desired, and transported by the person for alternative use during ordinary conversation.

Further objects, advantages and salient features of the invention will become more apparent from a consideration of the description to follow, the appended claims, and the accompanying drawing, in which:

Figure 1 is a side elevational view of the hearing aid device shown attached to a conventional telephone;

Figure 2 is a front elevational view of Figure 1;

Figure 3 is an enlarged sectional view taken on line 3—3, of Figure 2;

Figure 4 is a side elevational view of the device shown removed from the telephone and in transport condition; and

Figure 5 is a cross section through the protective cap shown in Figure 4.

Referring in detail to the drawing, a casing 10, which contains all of the operative parts of the device, is shown attached to the receiver 11 of a conventional French type telephone 12, which latter includes the conventional transmitter 13 at one end thereof. This casing, as more clearly shown in Figure 3, has a projecting rim 14 at one end which frictionally engages the periphery of the receiver 11 for detachable engagement therewith. This form of securing means is intended as illustrative only for simplicity of disclosure and any other suitable equivalent means may be employed, if desired.

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Within casing 10, and at one end thereof, is disposed a crystal pick-up transmitter 15 which extends into depression 16 of the receiver 11. The casing also contains the conventional power source in the form of batteries 17, 18, electronic tubes 19, transformer 20, volume control 21, together with all necessary circuits and other electrical instrumentalities interconnecting the various parts. Since the specific details of the foregoing, which constitutes an amplifier, form no part of the invention and are well known and understood in the art, detailed illustration and description is omitted in the interests of clarity.

Within the casing, and at the opposite end thereof, is disposed a receiver 22 of the type employed in conventional electronic hearing aid devices. This receiver is electrically connected to the pick-up and amplifying instrumentalities within casing 10 in a manner understood in the art, and the sonic signals which emanate therefrom are transmitted through a channel 23 formed within a resilient projecting portion 24 which is so constructed to enter into the middle ear of the user. A soft, resilient pad 25 of sponge rubber or the like may also be provided on the same end of the casing 10 and against which the outer ear 26 of the user may rest as shown in Figure 1. This protects the delicate parts of the middle and inner ear from injury which might otherwise result from accidental excessive insertion of projecting portion 24 therein, that is, it forms an abutment which limits the distance to which the projecting portion 24 may be inserted into the ear, either intentionally or accidentally.

In Figure 4 the hearing aid device is shown removed from a telephone and in its transport position. It may then be carried by the user for use on different telephones, or may be used in a manner similar to an ear trumpet, for amplifying ordinary conversation by merely inserting projecting portion 24 within the ear. Thus, a single hearing aid unit may serve a dual purpose for telephone and ordinary conversation which ordinarily would require two separate units. Since devices of this kind contain many delicate and intricate parts, the cost thereof is necessarily relatively high, hence a single unit which will serve all purposes of the user results in considerable saving in cost and also the inconvenience of carrying on the person of the user a plurality of different devices for different requirements.

In order to protect the intricate internal parts of the device against entry of dust or other foreign

matter when in transport position, as shown in Figure 4, a cover 27 may be applied over the crystal pick-up end of the casing. This cover may be relatively rigid and be removed when the user desires to engage in ordinary conversation, or it may be constructed of thin resilient material such as rubber, plastic, or the like, stretched over rim 14, in which event the cover may remain thereon since it will act as a diaphragm and transmit sonic signals to the crystal pick-up 14.

What is claimed as new is:

1. A unitary hearing aid device comprising, a casing, a transmitter fixed relative to the casing at one end thereof, a receiver fixed relative to the casing at an opposite end thereof having a resilient hollow portion projecting therebeyond adapted to enter a human middle ear, electrical means including at least one electronic tube and at least one battery disposed within the casing and interconnecting the transmitter and receiver for amplifying sonic signals, and resilient abutment means on said opposite end of the casing adapted to engage a human ear when the device is in use and limit the distance which said resilient portion may project into the middle ear.

2. A unitary hearing aid attachment for French type telephone receivers comprising, a casing, transmitter means fixed relative to one end of said casing and adapted to nest within the outer cavity of a telephone receiver, a resilient rim on said end for engaging the periphery of a telephone receiver, a receiver fixed relative to

the casing at an opposite end thereof having a portion projecting therebeyond adapted to enter the human ear, resilient ear abutment means at the last named end, electrical means within the casing connecting said transmitter means and receiver means for amplifying sonic signals, and a control member having a portion projecting from the casing for controlling the degree of amplification.

RAYMOND E. KING.

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