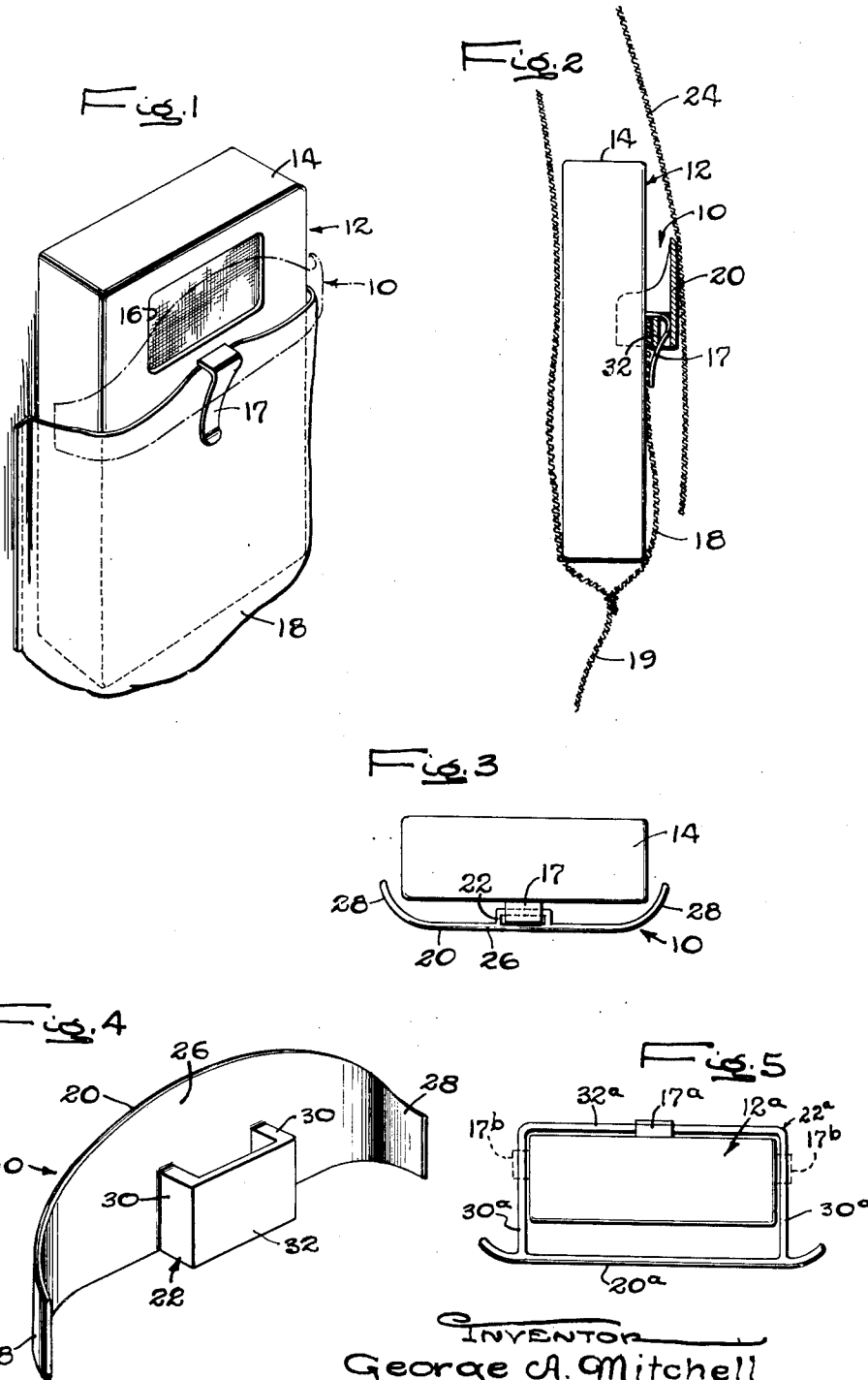


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G. A. MITCHELL
NOISE SHIELD FOR HEARING AIDS

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NOISE SHIELD FOR HEARING AIDS

George A. Mitchell, Spring Lake, Mich.

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The present invention pertains to hearing aids and more particularly to a noise shield for such devices.

Hearing aids are usually supported on an inner garment in a manner such that they are hidden from view by an outer garment. For example, the instrument may be supported in a shirt pocket and concealed by the wearer's coat. In any case, the instrument is subjected to a highly objectionable noise resulting from the rubbing together of an outer layer of clothing against an inner or underlying layer or by the rubbing of an outer layer directly against the case of the instrument and especially that portion of the case adjacent the microphone.

Various attempts have been made to overcome or eliminate such objectionable noise as by fashioning a hearing aid case so that the microphone is substantially recessed within the case, or by the use of shock absorbing suspensions for the microphone within the case. However, none of these attempts have proven effectual.

With the foregoing in view, the object of the present invention generally stated is to provide means of a simple and practical character capable of effectually overcoming and substantially eliminating the objectionable noise incident to the wearing of the aid.

Another object is to provide a simple attachment for hearing aids in the form of a shield presenting a smooth surface for engagement by the outer or concealing garment and serving to substantially eliminate the production of noise incident to the movements of the wearer's garments.

Still another object is to provide a noise shield as an attachment for hearing aids so constructed and arranged as to present a smooth surface for engagement by the outer garment and serving at the same time as a separator between inner and outer layers of clothing so as to prevent them from rubbing one upon the other.

Other objects and advantages will become apparent as the following description proceeds, taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a hearing aid positioned for use and showing in phantom a noise shield constructed in accordance with the present invention in place.

Fig. 2 is a side elevation partly in section of the hearing aid with the noise shield in position.

Fig. 3 is a plan view of the noise shield in place on a hearing aid.

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Fig. 4 is a rear perspective view of the noise shield.

Fig. 5 is a plan view similar to Fig. 3 but illustrating a modified form of the noise shield.

While an illustrative embodiment of the invention has been shown in the drawings and will be herein described in considerable detail, it should be understood that the intention is not to limit the invention to the embodiment shown, but, on the contrary, it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

By way of illustration a noise shield 10 embodying the instant invention is shown applied to a conventional hearing aid 12. The latter includes a case 14 having an aperture 16 therein behind which is positioned a microphone (not shown) for the device. As is customary, the hearing aid 12 is provided with a spring clip 17 to attach the aid to the user's clothing as, for example, to a pocket 18 of a shirt 19.

In the embodiment of the invention illustrated in Figs. 1 to 4 inclusive, the noise shield 10 comprises, in general, a guard plate 20 and a supporting member 22. The plate 20 is constructed to provide a smooth surface against which an outer layer of clothing such as a coat 24 can rub, and for best results an unbroken highly polished surface should be provided. As shown, the plate 20 has a substantially flat central portion 26 of sufficient width to extend entirely across the front of the hearing aid case 14. The central portion 26 merges gently with end portions 28, the latter being turned rearwardly to extend around the corners of the case 14 in spaced relation thereto. It is to be noted also that the edges of both the central and end portions are rounded so as to be free from any sharp or rough edges in order to prevent noise that might be produced by the outer layer of cloth rubbing thereover.

The supporting member 22 is of generally U-shape and comprises legs 30 and a connecting or bight portion 32. To position the noise shield on the hearing aid 12 the user merely slips the bight portion 32 under the clip 17 outside the pocket 18, the legs 30 being spaced apart a sufficient amount so that the clip 17 will pass therebetween (Figs. 1 and 3). To prevent damage to the clip when the shield is installed, the bight portion 32 is made relatively thin.

Besides supporting the noise shield, the member 22 serves to space the guard plate 20 outwardly. Thus the outer layer of clothing 24 is spaced from the case 14, and, in this instance,

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the two outer layers of clothing, namely the pocket 18 and the coat 24 are held apart so that they can not rub together. Additionally, it is desirable that the outermost layer of clothing also be prevented from rubbing against the case 14. To this end, I make the length of the legs 30 of the member 22 and the height of the central plate portion 26 sufficient to hold such clothing layer outwardly far enough to maintain a space between it and the upper forward edge of the case 14 (Fig. 2). Below the shield 10 the outer layer 24 will normally hang in spaced relation to the layer 18 and the case 14.

Where the hearing aid is supported as illustrated in Figs. 1 and 2, no noise is produced between the pocket 18 and the case 14 because the clip 17 and the weight of the instrument substantially eliminates any relative movement between the two.

Referring now to Fig. 5 of the drawings, there shown is a modified construction embodying the invention which differs from the first embodiment in that provision is made to accommodate hearing aids having attaching clips positioned on the sides or back of the hearing aid case. In this embodiment of the invention the noise shield comprises a plate 20a and a supporting member 22a. The plate 20a is constructed substantially like that in the first embodiment disclosed and provides a smooth unbroken surface against which an outer layer of clothing can rub.

The supporting member 22a is again of generally U-shape and comprises legs 30a and a connecting or bight portion 32a. However, in this instance, the legs 30a are spaced apart and are of a length sufficient to receive a hearing aid 12a therebetween and support the plate 20a in spaced relation to the front of the aid.

Some hearing aids are provided with a clip 17a on the rear of the case and when used with such aids the shield will be supported by slipping the bight portion 32a thereunder. Other hearing aids are provided with a pair of clips 17b disposed on the opposite sides of the aid, as shown in dotted lines, and with such aids the shield is supported by inserting the legs 30a thereunder. In either event the plate 20a is spaced outwardly from the front of the case 14a and thus an outer layer of clothing is prevented from rubbing against the case and from rubbing against an adjacent layer of clothing.

It will be observed that the construction of the shield is exceedingly simple so as to be susceptible of manufacture at a very low cost. But notwithstanding its simplicity, it has proved in extensive tests under all of the various conditions

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encountered in use to eliminate effectually the "clothing noise" to which users of hearing aids have been plagued.

I claim as my invention:

1. For use with a hearing aid of the type adapted to be suspended from one of two layers of clothing normally worn in overlying and rubbing relation with respect to each other, a noise shield including a plate and supporting means having an element connected with the plate for attachment on one side of the case of the hearing aid and serving to space the plate therefrom and to separate the said layers of clothing, said plate providing a smooth surface for engagement by one of the clothing layers to substantially eliminate noise produced by frictional engagement between the two clothing layers.

2. For use with a hearing aid of the type adapted to be suspended from one of two layers of clothing normally worn in overlying and rubbing relation with respect to each other, a noise shield comprising a plate providing a smooth outer surface for engagement by the outer clothing layer and supporting means connected with the plate and serving to space the same outwardly from the case of the hearing aid and to hold the outer one of the two clothing layers in spaced relation to the inner clothing layer.

3. A noise shield for use with a hearing aid of the type having a case with a clip thereon for suspending the hearing aid from one of two layers of clothing normally worn in overlying and rubbing relation with respect to each other, said noise shield comprising, in combination, a plate providing a smooth outer surface for engagement by the outer one of the clothing layers and means connected to said plate and including an element for reception under the clip to support the plate in outwardly spaced relation to the case of the hearing aid and to hold said clothing layers apart.

GEORGE A. MITCHELL.

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