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H04M 1/19 (2006.01)

(52) UK CL (Edition X):
H4J JL J37X

(56) Documents Cited:
GB 2292650 A **JP 100164199 A**

(58) Field of Search:
UK CL (Edition X) **H4J**
INT CL **H04M**
Other: **online EPODOC, WPI, INTERNET**

(54) Abstract Title: **Passive telephone privacy device**

(57) A passive telephone privacy device comprises a relatively rigid outer shell 1 having a first region shaped to extend over at least the user's mouth so as to substantially prevent the escape of sound emitted from the user's mouth to outside the device, a second region adapted to extend over one ear of the user, so as to substantially prevent background sound inside the device, and a third region extending between the first region and the second region and which is adapted to direct at least some sound emitted from the user's mouth to the second region whereby the user can hear sound from the first region. The device may be used with a combined earpiece-microphone 2, headset (12, figure 7) or a standard telephone handset (14, figure 9). The shell may extend over both ears, for example when used with a headset. A flexible seal and sound absorbent material may be used to prevent sound leaking into or out of the device.

FIGURE 2

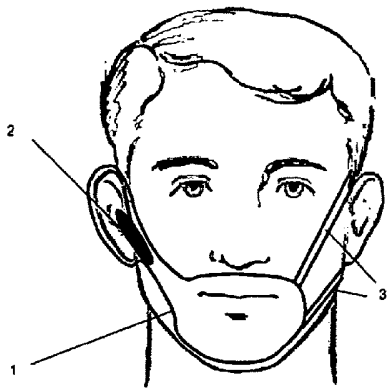

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FIGURE 1

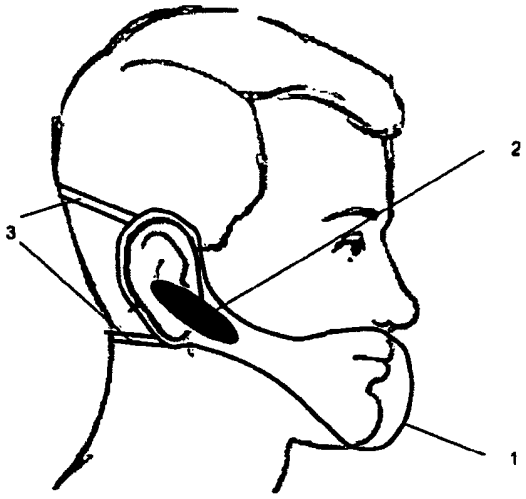


FIGURE 2

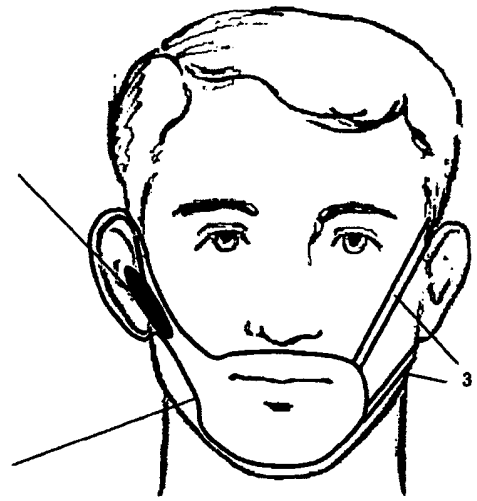


FIGURE 3

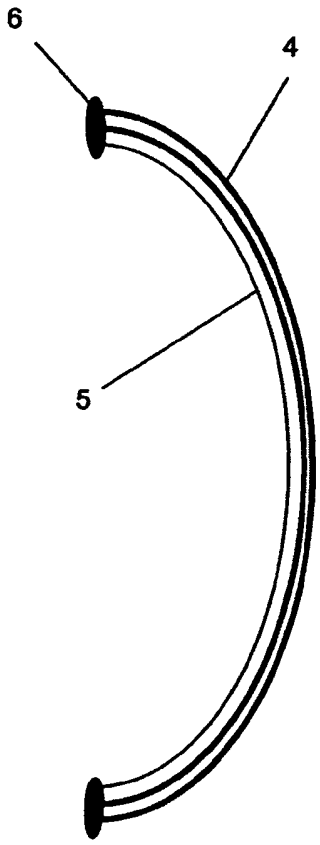


FIGURE 4

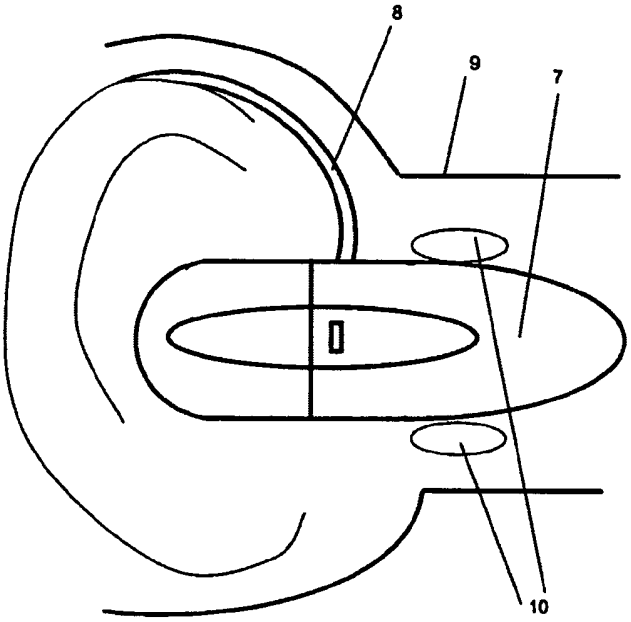
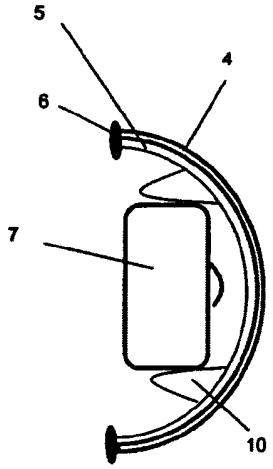


FIGURE 5



PASSIVE TELEPHONE PRIVACY DEVICE

The present invention relates to a passive telephone privacy device.

Many telephones have a microphone and an earpiece in a single or unitary handset. In the case of cellphones and landline phones, the handset is often so small that when the earpiece is applied to the user's ear, the user's mouth is a significant distance from the microphone. As a result, the user's speech is often audible for significant distances from the microphone, and privacy of speech is almost impossible to achieve. This is coupled with poor quality for the listener at the other end, i.e. there is a significantly more background noise than if the microphone were close to the speaker's mouth.

Lack of privacy and background noise are also problems with telephones of the types in which the headset is separate from the rest of the telephone. For example, in telephones of the types used in call-centers, the user has an ear-piece retained against his/her ear by a head-band or similar means, and the microphone is attached to the head-band or a a neck-yoke so that it is positioned near the user's mouth. There is no provision to ensure privacy and a consequence is that operators in call-centers cannot be located directly adjacent each other. Cellphone headsets can either be wireless, with the microphone and earpiece on a device mounted on the ear of the user (sometimes known as 'Bluetooth') or connected to the cellphone such that the user has an earpiece attached to his/her ear, and the microphone is usually located on a cable dangling in front of the user's mouth. There is little prospect for privacy with telephones of this type.

US patent no. US 6,510,311 discloses a phone amplification and privacy device, which comprises a U-shaped cradle into which a telephone fits. The device has a rectangular shaped housing that is hinged at one end to the bottom portion of the U shape, and comprises a speaker attached to the U shaped portion that ends up being located just over the top of and parallel to the microphone portion of the telephone, a microphone and amplifier circuit enclosed within the rectangular housing, an on/off switch and battery located within the rectangular housing, and a privacy shield hingably attached to one edge of the outside surface of the rectangular housing.

A drawback of the device of US 6,510,311 is that it requires electrical circuitry which must function correctly and interact flawlessly with the telephone. Such circuitry involves cost and complication. Moreover, although the device comprises a hinged shield to cover the mouth from view, the shield does not prevent the escape of sound from the user's mouth to regions outside the shield.

The present invention provides a passive telephone privacy device as defined in claim 1 of the set of claims following the present description of the invention. Optional and/or preferred features of the device are specified in the other claims of the set of claims.

The device of the invention has at least one or more of the following advantages: (i) it is effective for privacy for the user; (ii) it is cheap to make; (iii) it is devoid of electrical circuitry or other potentially complicating factors; (iv) it is reliable; (v) it is physically robust. Other advantages and benefits might be apparent to the reader.

Embodiments of the invention are now described with reference to the accompanying diagrammatic drawings in which:-

Figure 1 shows a side view of one form of the device in use with a cellphone 'Bluetooth' style headset.

Figure 2 shows a frontal, perspective view of the device shown in Figure 1.

Figure 3 shows a cross-section through the mouthpiece region of the device of Fig. 1.

Figure 4 shows a close-up of Figure 1 around the ear.

Figure 5 shows a cross-section of Figure 4.

Figure 6 shows a two-eared shield in use with a callcenter-type headset.

Figure 7 shows a frontal perspective of the device in Figure 6.

Figure 8 shows a one-eared shield in use with a common telephone handset.

Figure 9 shows a frontal perspective of the device in Figure 8.

Description of the drawings

Figures 1 and 2

The shield (1) is shown attached to the wearer's face using straps (3). It is shown in use with a 'Bluetooth'-style headset (2) for a cellphone.

Figure 3

The shield is shown in cross-section with the semi-rigid casing (4) on the outside and inside lined with acoustic material (5) which both damps the sound being emitted, whilst also reducing the echo within the device. The product is lipped around the outside (6) to provide a seal.

Figures 4 and 5

This is a close-up of the shield (9) shown in Figure 1 around the ear region. The 'Bluetooth' headset (7) is shown with its ear-clip (8). Optional flexible grips (10) grasp the headset. Note that this enables the ear-clip (8) to either be removed or not secured behind the ear for additional comfort.

Figures 6 and 7

These diagrams show a two-eared shield (11) being used with a callcenter-type headset (12).

Figures 8 and 9

These diagrams show a one-eared shield (13) being used with a callcenter-type headset (14).

CLAIMS:

1. A passive telephone privacy device comprising a relatively rigid outer shell having a first region shaped to extend over at least the user's mouth so as to substantially prevent the escape of sound emitted from the user's mouth to outside the device, a second region adapted to extend over one ear of the user, so as to substantially prevent background sound inside the device, and a third region extending between the first region and the second region and which is adapted to direct at least some sound emitted from the user's mouth to the second region whereby the user can hear sound from the first region.

2. The device of claim 1 wherein the first region comprises a relatively flexible seal which substantially conforms relatively closely to the user's mouth region to contain most or all sound emitted from the user's mouth within the device.

3. The device of claim 1 or claim 2 comprising sound-absorbing material within the device to reduce the escape of sound from within the device to the exterior of the device and to improve the quality of the sound being transmitted to the microphone.

4. The device of claim 1 to 3 comprising layered acoustic material where the inner layer (closest to the face) has sound reflecting material near the mouth and ear to direct the sound internally to the ear within the device whilst the acoustic layer 'sandwich filling' closest to the inner edge of the device consists of sound-absorbing material to reduce the escape of sound from within the device to the exterior of the device and to improve the quality of the sound being transmitted to the microphone.

5. The device of any preceding claim comprising means for detachably attaching the device to a telephone hand-set or cellphone or combination microphone and earpiece or Bluetooth-type telephone headset.

6. The device of any of claims 1 to 5 wherein said attachment means comprise one or more resilient means such as resilient clips and/or ear-hooks studs and/or Velcro-type material.

7. The device of any of claims 1 to 6 comprising vent means to permit the escape of moisture from with the device.

8. The device of any of claims 1 to 7 comprising a mouldable shield either at room temperature, or by heating to maximise closeness of fit.

9. The device of any of claims 1 to 8 comprising an internal fixing to securely hold a wireless headset so that it is not necessary to attach the headset to the ear.

10. The device of any of claims 1 to 9 comprising a changeable internal area close to the mouth for hygienic reasons.

11. The device of any of claims 1 to 10 comprising of a shield fitting over the mouth and both ears.

The Patent Office

For innovation

Application No:	GB0613434.0	**Examiner:**	Mr Stuart Jarvis
Claims searched:	1-11	**Date of search:**	21 August 2006

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-3, 5, 6	GB 2292650 A Lawton - See figures 8 and 9 and page 8 line 14 to page 10 line 5
X	1, 8	JP 10164199 A Tsusho - See the English language abstract and figures 1 and 2

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

H4J

Worldwide search of patent documents classified in the following areas of the IPC

H04M

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI, INTERNET