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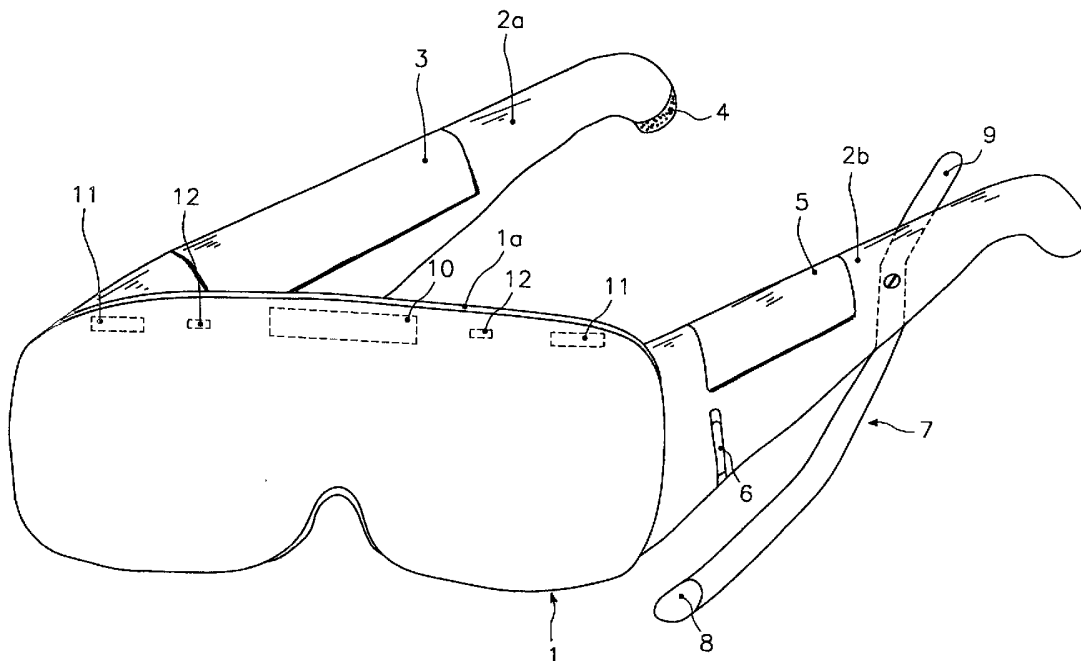
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(54) Title: EYEWEAR AND MOBILE PHONE ASSEMBLY



(57) Abstract: An eyewear with a mounting comprising a front frame (1) and two sidepieces (2a, 2b) connected to the front frame (1), comprises the components of a mobile telephone, housed in, or built-in with, the mounting. The sidepieces (2a, 2b) have a box-like structure, with a cross-section suitable for housing, respectively, a hardware control unit of the telephone, and an extractable power supply battery (5) with a recharge plug (6), the unit and the battery (5) being mutually wired by means of circuitry extending along the top edge (1a) of the front frame (1).



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TITLE

EYEWEAR AND MOBILE PHONE ASSEMBLY

DESCRIPTIONField of the invention

5 The present invention concerns the mobile telecommunications field and, more particularly, a new mobile phone having a peculiar construction.

Description of the prior art

10 It is known that the mobile telecommunications field is presently one of the most active and dynamic. A constant and quick upgrade of the range of models proposed by each single producer is driven by the increasing expectations and needs of the users, as well as by the availability of technological resources which are more and
15 more sophisticated, in terms of functionality and miniaturization.

 In spite of that, some problems related to the use of mobile phones have not found fully satisfactory solutions as yet. Namely, the necessity to use at least
20 one hand during the telephone call is something that one can not get rid of completely. In fact, the devices that have been proposed to such purpose are not fully effective, due to problems of cost, bulk, or merely to aesthetic reasons. On the other hand, it should not be
25 disregarded that such devices, typically the so-called "hands free" kits, can be used only in specific circumstances.

 A further problem that has not been solved in an adequate manner is related to the arrangement of the
30 handset in the stand-by condition. Especially the male user, who in many cases does not wear a bag, a sack or a similar accessory, is forced to hold the phone in his

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hand, or to place it in pockets which are unsuitable for that use. Obviously, this involves obvious annoyances, and the phone may easily be damaged as a result of a drop or a crush. Also in this case, the proposals of the prior art, such as the common cases or pouches to be connected to the belt of the user, involve significant aesthetic and functional drawbacks. In particular, they may hinder the movements of the user and slow down the extraction of the phone.

10 Summary of the invention

The object of the present invention is to solve the above-mentioned problems, by providing a new device that, thanks to an original combination of components, ensures an advantageous result, both from the aesthetic and the functional point of view.

This object is achieved with an eyewear with a mounting comprising a front frame and two sidepieces connected to the front frame, characterized in that it comprises the components of a mobile telephone, housed in said mounting, or built-in with it.

20 Brief description of the drawings

The characteristics and advantages of the eyewear and mobile phone assembly according to the present invention will be described more in detail hereinafter with the description of a preferred embodiment thereof, which is to be considered as an example and not limitative in any way, said description making reference to the attached drawings, in which:

- figure 1 shows a schematic perspective view of the eyewear according to the invention.

30 Detailed description of the invention

Referring to the above figure, the eyewear according

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to the present invention has a conventional overall shape, with a mounting that comprises a front frame 1 and a couple of sidepieces 2a, 2b hinged at the opposite sides of front frame 1. Lenses are built-in with, or mounted on,
5 front frame 1.

Sidepieces 2a, 2b have a box-like structure, and have a transverse cross-section that is significantly oversized in comparison with the traditional eyewear. In this way, they are suitable for housing the various
10 components of a mobile telephone. More precisely, a sidepiece 2a houses the actual hardware unit for controlling the operation of the telephone, via appropriate resident software. The control unit and the software are neither shown nor described in detail, since
15 their characteristics, considered as such, are obvious to the skilled person.

A command keypad is accessible on the inside of sidepiece 2a, concealed by a hinged cover 3 and thus not visible in the figure. The same sidepiece 2a houses, in
20 proximity of the free end, an earphone 4, wired to the control unit for permitting the user to hear the telephone conversation. According to a possible solution, earphone 4 is extractable from said free end of the sidepiece, so that it can be accommodated within the ear of the user.

25 A narrow raceway, not visible, is formed along the top edge 1a of front frame 1, for containing the circuitry by means of which the above mentioned control unit is wired to a power supply battery 5 placed in the other sidepiece 2b. The circuitry comprises LCD display means
30 and indicator LEDs that will be mentioned in further detail hereafter. The display means and indicators can be read by the user wearing the eyewear on the inside of

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front frame 1, possibly further to a forward displacement of the frame in order to move it away from the eyes. Battery 5 is schematically outlined in the figure on the outside of sidepiece 2b, on which there is also visible a
5 plug 6 for the connection with a battery-charger jack. Battery 5 is extractable, so that access is permitted to a SIM card holder with the related reader device. In its turn, the SIM card holder and the reader device are located within sidepiece 2b and connected to the control
10 unit via the appropriate circuitry extending along the above mentioned raceway of front frame 1.

An elongated member 7, substantially S-shaped, is pivoted to the inside of sidepiece 2b. The fulcrum of elongated member 7 is in an intermediate point between its
15 ends, which support a microphone 8 and an antenna 9, respectively. More precisely, the shape and arrangement of elongated member 7 are such that in a stand-by position it can be accommodated flush on the inside of the sidepiece; conversely, in a talk position, further to a rotation of
20 elongated member 7 as shown in the figure, the end with microphone 8 gets close to the mouth of the user, while antenna 9, at the opposite end, points upwards.

Also elongated member 7 is connected with the other components of the telephone by means of wires and electric
25 contacts of which the arrangement, *per se*, can be regarded as obvious. Namely, elongated member 7 and sidepiece 2b will be connected via a known device for carrying out the so-called "active flip" function, so that the calls will be answered and ended by rotating the member between the
30 stand-by and the talk position.

Referring back to the above mentioned display and indicator means supported by front frame 1, they comprise

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a main LCD display 10, placed in a central position, which carries out all the data display functions which are common to all conventional handsets (phone numbers, SMS messages and the like). In order to satisfy the obvious
5 need for a limitation in the size of the display, this can be of the sequential type. Furthermore, as in the depicted embodiment, further display functions can advantageously be assigned to two auxiliary LCD displays 11, again adjacent to top edge 1a of front frame 1, but displaced
10 sideways, i.e. towards the respective sidepieces 2a, 2b. For instance, displays 11 may show the local time and the time of a different time zone, freely set by the user.

Finally, indicator LEDs 12 may be employed for performing even further functions, e. g. lighting up to
15 notify the user of a call received during a conversation in progress, of the imminence of a pre-scheduled event, or of the forthcoming running out of the battery. In the embodiment shown in the figures, two LEDs 12 are placed between main display 10 and respective auxiliary displays
20 11.

The mobile telephone may provide for all the functions already known from the handsets of the prior art. In particular, the voice dialing feature will result especially advantageous, because in this way there will be
25 no need for taking off the eyewear when dialing. Such need obviously arises when the built-in keypad is used. However, the built-in keypad may be replaced by a receiver for realizing a wireless signal transmission from a remote keypad to the control unit. As mentioned, when receiving
30 the call, the conversation will be started simply further to a rotation of elongated body 7, thus keeping the eyewear on.

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It will be easily appreciated from the above that thanks to the eyewear according to the invention it is possible to overcome the drawbacks explained in the introductory part of the present description. In fact, a
5 mobile telephone built-in with an eyewear (sunglasses or eyeglasses) can be used by simply wearing it. Therefore, use of hands is no longer necessary, and they can be kept free for any other activities. Costly, bulky or unattractive acoustic/microphonic external devices need no
10 longer be used. To the contrary, the fact that the telephone is substantially hidden in an eyewear having a substantially traditional shape, accomplishes a particularly effective result, both from the aesthetic and the functional point of view. At the same time, one can
15 get rid of the drawbacks and annoyances related to the placement of the telephone in the stand-by condition.

The idea underlying the present invention, i.e. the integration of a mobile telephone in an eyewear, may be brought to practice by means of different constructions
20 than that of the above-described exemplifying embodiment. In fact, variations and/or modifications can be brought to the eyewear and mobile phone assembly according to the present invention without for this reason going beyond the scope of the invention as defined by the claims
25 hereinbelow.

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CLAIMS

1. An eyewear with a mounting comprising a front frame (1) and two sidepieces (2a, 2b) connected to the front frame (1), characterized in that it comprises the components of a mobile telephone, housed in said mounting, or built-in with it.
2. The eyewear according to claim 1, wherein said sidepieces (2a, 2b) have a box-like structure sized for housing, respectively, a hardware control unit of the telephone, and an extractable power supply battery (5) with a recharge plug (6), said unit and said battery (5) being mutually wired by means of circuitry extending along the top edge (1a) of said front frame (1).
3. The eyewear according to claim 2, wherein said hardware control unit comprises a command keypad built-in with the same sidepiece (2a).
4. The eyewear according to claim 3, wherein said keypad is concealed by a cover (3) hinged to the relevant sidepiece (2a).
5. The eyewear according to claim 2, wherein said hardware control unit comprises receiver means for receiving a wireless signal transmission from a remote command keypad.
6. The eyewear according to any of the claims from 2 to 5, wherein the sidepiece (2b) that houses said battery (5) houses also a SIM card holder with the related reader device, said SIM card holder being accessible from the outside as a result of the extraction of said battery (5).
7. The eyewear according to any of the previous claims, wherein earphone means (4) and microphone means (8) are housed or built-in with respective sidepieces (2a, 2b), said microphone means (8) being movable between a stand-by position in which they are accommodated flush in the

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relevant sidepiece, and a talk position in which they are placed close to the mouth of the user, said microphone means (8) and the relevant sidepiece (2b) being connected via a device for carrying out the active flip function, so
5 that the calls will be answered and ended by moving said microphone means (8) between the stand-by and the talk position.

8. The eyewear according to claim 7, wherein said microphone means (8) are carried at an end of a S-shaped
10 elongated member (7), pivoted to the inside of the relevant sidepiece (2b) and supporting an antenna (9) at the other end, said stand-by position and said talk position corresponding to respective angularly displaced positions of said elongated member (7) about the pivot
15 point.

9. The eyewear according to any of the claims from 2 to 8, wherein said circuitry comprises display and/or indicator means, readable from the inside of said front frame (1) and placed adjacently to the top edge (1a) thereof.

20 10. The eyewear according to claim 9, wherein said display and/or indicator means comprise a main LCD display (10) placed in a central position, two auxiliary LCD displays (11) placed adjacently to respective sidepieces (2a, 2b), and one or more indicator LEDs (12) placed between said
25 main LCD display (10) and said auxiliary LCD displays (11).

11. The eyewear according to claim 10, wherein said main LCD display (10) is a sequential display carrying out the data display functions which are common to the
30 conventional handsets, whereas said auxiliary LCD displays (11) respectively show the local time and the time of a different time zone freely set by the user.

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