



A FOLDABLE SHOULDER REST OF TELEPHONE HAN

FIELD OF THE INVESTION

This invention relates to a telephone handset shoulder rest which is built in handset body and more particularly to one which may fold flush with the handset body when not in use.

BACKGROUND OF THE INVENTION

With the increasing usage of computer in office and at home, it is sometimes convenient if the telephone users can have their both hands free to continue working on computer and the like.

There have been many inventions intending to convert the conventional phone handset to hand-free handset. Most of them are of a separate apparatus or device which clamps onto the telephone handset. These apparatus or devices can stand on user's shoulder, or be fasted around user's head, such as U.S. patent number 4736417 and 4759058 showing the examples of different types of shoulder rests.

Although these inventions may help the telephone users to free their both hands, they usually look awful in appearance and are cumbersome in use.

To overcome this, Clifford (U.S. patent number 4320262) has designed an integral shoulder rest which may fold flush with the body of the handset when not in use, so that this shoulder rest does not spoil the aesthetics of the handset. However, this shoulder rest is a foldable parallelogram, the shoulder plate is also a portion of the handset body, thus its shape is hard to match human shoulder, subsequently the handset will be not able to stay on user shoulder securely. Furthermore, this invention requires the shoulder plate to be soft. Thus the shoulder plate can not be made of the same material as the handset body. Since the shoulder plate is a portion of the body, this invention still changes the appearance of the telephone handset.

OBJECTIVE OF THE INVENTION

This invention provides a foldable shoulder rest which will not spoil the aesthetics of telephone handset in appearance and yet which is comfortable and more secure when in use.

SUMMARY OF THE INVENTION

According to the present invention, a telephone handset comprises a body, a transmitter and a receiver housed in the body, and a foldable shoulder rest lying inside a recess when folded down, which is characterised by that the foldable shoulder rest consists of a long plate, a short plate, a movable plate and a free pad. The long plate is hinged at the body near the receiver while the short plate is hinged on the movable plate which is secured on the bottom of the recess, and a free pad is hinged to the free end of the short plate. The long plate, short plate and free pad form a foldable shoulder rest which lies inside the recess of handset body when folded down and erects from the body when unfolded.

In a particular embodiment, there is a recess in the telephone handset body. A movable plate is secured on the bottom of the recess by a screw and a wind nut. The movable plate can be secured at different location on the bottom of the recess by moving its screw along the slot opened on the bottom of the recess and tightening the wind nut. The long plate is hinged at the handset body and the short plate is hinged on the movable plate, while hinged to the free end of the short plate is the free pad. There are springs loaded at long plate and short plate respectively. The spring forces bias the two plates towards the erecting position. A latch button is used to retain the long plate at the position flushing with the body surface when it is folded. To use the shoulder rest, user only needs pushing the latch button, the two plates will be released and flap to open at opposite direction by the springs force. As the results, the two plates form a supporter which can clamp on user's shoulder and support the handset staying on user's shoulder firmly. After use, user can fold the shoulder rest by pushing down the short plate to lie inside the recess first and



then the long plate. The long plate will lie on top of the short plate and is retained by latching button at the position flushing with the body surface.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 The isometric view of a telephone handset with the foldable shoulder rest at open position.

Figure 2 The isometric view of a telephone handset with shoulder rest at folded position.

Figure 3 The assembly drawing of a telephone handset with a foldable shoulder rest

Figure 4 The section drawing of the telephone handset with shoulder rest at folded position.

Figure 5 An application example of shoulder rest.

DESCRIPTION OF THE EMBODIMENTS OF THE INVENTION

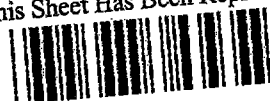
In detail now and referring to the drawings, Figure 1 to Figure 4 show one embodiment of the present invention. There is a recess 4 in the handset body 3. The recess 4 has two humps 2 on its bottom. A long plate 22 is hinged to the two humps 2 by a pivot 21. A spring 20 is loaded at the centre of the hinge. The recess 4 is also slotted on its bottom. A movable plate 10 is secured on the bottom of the recess 4 by a screw 12 which is inserted through the slot 5 and a hole 11 in the movable plate 10 and is tightened by the wing nut 13. The slot 5 enables the movable plate 10 to be secured at different location on the bottom of the recess 4. There are also two humps 17 on the movable plate 10, a short plate 14 is hinged to these two humps 17 by the pivot 16. A spring 18 is mounted at the centre of the pivot 16. The force of spring 20 and spring 18 bias the long plate 22 and short plate 14 towards erecting position. Therefore, when the shoulder rest is unfolded, the springs will force the long plate 22 to open towards left direction while the short plate 14 towards right direction (refer to Figure 1 and Figure 3). The plates will be stopped when they hit the humps and maintain the erecting positions with a certain angle. These two plates form a supporter which can clam on user's shoulder and support the phone

handset standing firmly on the position -- the transmitter 1 close to user's ear and the receiver 6 close to user's mouth. The distance between two plates can be adjusted to fit user's shoulder by relocating the movable plate 10. To make user comfortable, a free pad 15 is used which is hinged to the free end of the short plate 14 by the pivot 19. There is no spring loaded at the hinge between the free pad 15 and short plate 14, the free pad 15 can swing around the pivot 19 of the hinge freely, so that the free pad 15 can adapt to any type shoulder.

When the shoulder rest is folded, the short plate 14 lies on the bottom of the recess 4 and long plate 22 lies on top of the short plate 14. A latch button 9 retains the long plate 22 lying even with the handset body 3. The latch button 9 is mounted on the handset body 3 by a container 7 and is loaded by a spring 8. When the long plate 22 is pressed down, it will push the latch button 9 to move against the force of spring 8. However, when the latch hole 23 at the long plate 22 meets the latch button 9, the latch button 9 will flap into the latch hole 23 hence retains the long plate 22 lying flushing with the handset body 3.

To use the shoulder rest, user needs only pushing the latch button 9. The long plate 22 and short plate 14 will be released and flap to open at opposite directions, extending away from the handset body 3 with a certain angle. The user can place the handset on his/her shoulder with the long plate 22 holding on the back of the shoulder while the short plate 14 standing on the front of the shoulder. By this way, the shoulder rest can clamp on user's shoulder firmly (see Figure 5). Furthermore, since the free pad 15 can swing freely around its pivot, it can adapt to the user's shoulder and make user comfortable. After use, press down the short plate 14 first and then the long plate 22, until the latch button 9 flaps into the latch hole 23 in the long plate 22 and generates a sound. The shoulder rest will be folded down and stored inside the handset body.

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CLAIM



1. A telephone handset comprises a body having a recess, a transmitter and a receiver housed in the body, and a foldable shoulder rest stored inside the recess when folded down, characterised by that the shoulder rest is consisted of a long plate hinged to the body, a movable plate secured on the bottom of the recess of the body, a short plate hinged on the movable plate and a free pad hinged to the free end of the short plate.
2. A telephone hand set as defined in claim 1 in which the long and short plates are loaded with springs respectively, the spring forces bias the long plate and short plate to open at opposite direction with a certain angle.
3. A telephone hand set as defined in claim 1 and claim 2 in which the bottom of the recess is slotted.
4. A telephone hand set as defined in claim 1, claim 2 and claim 3 in which the movable plate is secured on the bottom of the recess by a wind nut and a screw inserted through a slot on the bottom of recess and a hole in the movable plate.
5. A telephone hand set as defined in claim 1 and claim 2 in which the long plate is made by the same material and same colour of the handset body.

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