

HEAD MASSAGER

TECHNICAL FIELD

The present invention relates to massage apparatus, and more particularly, to a head massager.

BACKGROUND

In the prior art, a head massager includes a helmet, the helmet is provided with a massage assembly in the inner side thereof towards the top of the head of user. Since the massage assembly takes up too much space, an adjustment mechanism is required to adjust the length of the helmet in a radical direction so as to make the helmet be suitable for different users.

SUMMARY

The technical problem of the invention is to overcome the shortage of the prior art, and the invention provides a head massager in which the massage assembly occupies small space with compact structure.

In order to solve the problem, the invention provides: a head massager comprising a front housing, a rear housing connected to the front housing and a massage assembly located internally at on the top of the inside of the front housing, the massage assembly comprising a housing, a plurality of massage heads extended out from a underneath bottom of the housing and a driving assembly located on an inner side of in the housing used to drive the plurality of massage heads, wherein the driving assembly comprises a motor installed horizontally, a bevel gear installed on an output shaft of the motor and a gear assembly which is installed horizontally and driven by the bevel gear, the

plurality of massage heads are divided into two equal groups, the two equal groups which are positioned on both sides of the motor, every group of the massage heads is driven by the gear assembly.

Especially, the gear assembly comprises a upper gear, a lower gear coaxially connected to the upper gear and two driven gears, the two driven gears are positioned on both sides of the upper gear and engaged with the upper gear, the lower gear engages with the bevel gear, each of the plurality of the massage heads is provided with a driving gear; in each group of the massage heads, the driving gear in the massage heads adjacent to the upper gear engages with the driven gears in each group of the massage heads, a transmission gear engaged with the adjacent driving gears is arranged between two adjacent massage heads.

Especially, every massage head comprises a plurality of massage contacts.

Further, wherein an air pump is installed in the rear housing, air bags connected to the air pump and able to move the housing down after the air bags are inflated are arranged on the top of the housing, a spring used for reposition of the housing is arranged between the housing and the front housing, and a button used for controlling the air pump to inflate or deflate is provided at the top of the front housing.

Further, the front housing comprises a main housing having an opening on the top thereof, an assembly board fixed on the opening actively and a top cap covered on the assembly board, the housing is located on the assembly board, each of the plurality of massage heads is extended from a bottom of the assembly board, the air bags are arranged between the housing and the top cap.

Further, the assembly board is fixed on the opening via a flexible

connecting part.

Perfectly, the flexible connecting part is a soft sleeve.

Especially, wherein the assembly board comprises a connecting pole with a blind hole, the spring is fixed in the blind hole, the connecting pole is provided with a flange at the top of the blind hole used to limit the spring, a positioning pole able to be extended through the top of the blind hole and inserted into the spring is provided at an inside of the top cap.

In the invention, by arranging the bevel gear and the gear assembly which is meshed with the bevel gear, the motor and each gear are installed horizontally so as to reduce an installation height. Therefore a height between the top housing and the bottom housing are reduced, an inner space of the front housing is saved and becomes more compact, lighter and thinner. Simultaneously, the rotating speed of the massage assembly is adjusted in the means of the gear transmission, and the massage assembly can rotate steadily so as to reduce noise when it working.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic structure view of a head massager according to an embodiment of the present invention.

FIG. 2 is an exploded view of the head massager according to the embodiment of the present invention.

FIG. 3 is an exploded view of a massage assembly in the head massager according to the embodiment of the present invention.

FIG. 4 is a sectional view of the head massager according to the embodiment of the present invention.

FIG. 5 is an enlarged view of a part labeled by A in the FIG. 4.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In order to make clearer the objects, technical solutions and advantages of the invention, the present invention will be explained below in detail with reference to the accompanying drawings and embodiments. It is to be understood that the following description of the embodiments is merely to explain the present invention and is no way intended to limit the invention.

Referring to FIG. 1 and FIG. 2, a head massager is provided according to a preferred embodiment of the present invention, the head massager includes a helmet 100 and a massage assembly 200 arranged in the helmet 100. In particular, the helmet 100 is formed by a front housing 110 and a rear housing 120 connected to the front housing 110, the massage assembly 200 is located at the top of the inside of the front housing 110.

Referring to FIG. 3, the massage assembly 200 includes a housing, massage heads 230 protruded through the lower housing 220 and a driving assembly 240 in the housing used for driving the plurality of massage heads 230. The housing is in form of an upper housing 210 and a lower housing 220 connected to the upper housing 210. The driving assembly 240 includes a motor 241 installed horizontally, a bevel gear 242 installed on an output shaft of the motor 241 and a gear assembly which is installed horizontally and driven by the bevel gear 242. The plurality of massage heads 230 are divided into two equal groups which are positioned on both sides of the motor 241, every group of the massage heads 230 is driven by the gear assembly. The gear assembly includes an upper gear 243, a lower gear 244 coaxially connected to the upper gear 243, and two driven gears 245. The two driven gears 245 are positioned on both sides of the upper gear 243 and engaged with the upper gear 243. The lower gear 244 engages with the bevel gear 242. Each of the plurality of the massage heads 230 is provided with a driving gear

246. In each group of the massage heads 230, the driving gear 246 in the massage head 230 adjacent to the upper gear 243 engages with the driven gear 245. In each group of the massage heads 230, a transmission gear 247 is arranged between two adjacent massage heads 230, the transmission gear 247 engages with the adjacent driving gears 246. When the motor 241 is working, the bevel gear 242 is driven by the output shaft of the motor 241 to rotate, the bevel gear 242 drives the lower gear 244 engaged with the bevel gear 242 to rotate. Because the lower gear 244 is coaxial with the upper gear 243, the upper gear 243 rotates with the lower gear 244, the upper gear 243 then drives the two driven gears 245 to rotate, the two driven gears 245 drives the driving gears 246 in the massage heads 230 which are adjacent to the upper gear 243 to rotate, and the driving gears 246 drive the driving gears 246 in the other massage heads 230 to rotate by means of the transmission gears 247, thereby all of the massage heads 230 are driven to rotate by the driving gears 246. In the embodiment, the bevel gear and the gear assembly engaged with the bevel gear are provided, thus the motor 240 and each gear can be installed horizontally, and the installation height is reduced. Therefore, a height between the upper housing 210 and the lower housing 220 are reduced, an inner space of the front housing 110 is saved, the structure of the front housing becomes more compact, so that the front housing 110 can be made lighter and thinner. Simultaneously, the rotating speed of the massage assembly 200 is adjusted by means of the gear transmission, and the massage assembly 200 can rotate steadily so as to reduce noise during massaging.

In the embodiment, there are four massage heads 230, each group of massage heads 230 includes two massage heads 230, and there are two massage heads 230 at each side of the motor 241. Since every massage head 230 includes a plurality of small massage contacts 231, on the one hand, each

of the plurality of massage contacts 231 can exactly do the massage on each of body parts, on the other hand, there is no need to arrange too much massage heads 230, so that there are four massage heads in this embodiment. It can be appreciated that, more massage heads can be arranged when other structure is applied on the massage head 230.

Referring to FIG. 2, there is an air pump (not shown) installed in the rear housing 120, air bags 300 connected to the air pump and able to move the housing down are arranged on the top of the housing, a spring 400 is arranged between the housing and the front housing 110 and can be used for reposition of the housing. A button 500 is provided at the top of the front housing 110. The button 500 is used for controlling the air pump to inflate or deflate. According to the embodiment, when the massage assembly 200 is needed to be lowered in use, the user should press the button 500 momentarily, the air pump then starts to inflate air into the air bags 300 which drive the housing 200 so as to push the massage heads 230 moving down. When the massage assembly 200 is needed to be raised, the user should press the button 500 for a long time, the air valve of the air pump is open and the air bags 300 are deflated, thus the housing is moved upward and repositioned by the spring 400. Compared to the adjustment mechanism in the prior art by adjusting the length of the helmet 100 in the radial direction, the mechanism is much simpler according to the embodiment, the massage heads 230 can contact with the scalp closely so as to achieve a better massage performance. Furthermore, the adjustment mechanism in this embodiment is fixed in the front housing 110, so that the front housing 110 has an integral appearance, and is nicer and neater. At the same time, there is no such noise during mechanical adjustment, the operation is more convenient.

Referring to FIG. 2, FIG. 4 and FIG. 5, the front housing 110 includes a

main housing 111 having an opening (not shown) on the top thereof, an assembly board 112 fixed on the opening actively, and a top cap 113 covered on the assembly board 112. The housing is located on the assembly board 112, a air bag 300 is arranged on each of massage heads 230, and the top cap 113 is covered on top of the air bag 300. The assembly board 112 has a plurality of through holes 1124 which are used for the corresponding massage heads 230 going through respectively. The number of the air bags 300 is the same as that of the massage heads 230, that is, every massage head 230 is provided with one air bag 230 correspondingly. Therefore, when the air bags 300 are inflated, every air bag 300 only presses one massage head 230, so that every massage head 230 can contact the scalp closely to ensure the better massage performance.

As a preferred embodiment, the assembly board 112 is fixed on the opening via a flexible connecting part 114. In the embodiment, the flexible connecting part 114 preferably is a soft sleeve. Since the soft sleeve is flexible and elastic, the assembly board 112 can be fixed on the opening via the soft sleeve and move along with the soft sleeve. Therefore, when the housing is fixed on the assembly board 112, the housing will move upward or downward along with the assembly board 112 under the function of the inflation or deflation of the air bags 300. The soft sleeve provides space for the movement of the massage assembly 200 and the assembly board 112, so that the movement of the massage assembly 200 and the assembly board 112 becomes smoother.

Referring to FIG.2 and FIG.5, the assembly board 112 includes a connecting pole 1121 with a blind hole 1122, and the connecting pole 1121 is provided with a flange 1123 at the top of the blind hole 1122. The spring 400 is inserted in the blind hole 1122 and limited by the flange 1123. In the

meantime, the top cap 113 includes a positioning pole 1131, the positioning pole 1131 is extended into the blind hole 1122 and inserted into the spring 400. That is, the spring 400 is disposed around the positioning pole 1131. When the air bags 300 are inflated, the assembly board 112 will move downward along with the massage assembly 200, and the flange 1123 of the blind hole 1122 will move down to press the spring 400. When the air bags 300 are deflated, the spring 400 will spring back to push assembly board 112 and massage assembly 200 to move upward to the original location.

In the embodiment, the massage provided by the every massage head 300 is a mechanical massage. The air bag 300 inflated with air will press every massage heads 230 to increase the elasticity of the massage head 230, so as to achieve the rigid and flexibility at the same time and increase the massage comfort.

The above descriptions are only preferred embodiments of the invention, and not to limit the invention, any modification, equivalent replacement and improvement without departing from the conception of the present invention shall be considered to be covered within the protection scope of the present invention.

CLAIMS

1. A head massager comprising a front housing, a rear housing connected to the front housing and a massage assembly located at the top of the inside of the front housing, the massage assembly comprising a housing, a plurality of massage heads extended out from a bottom of the housing and a driving assembly located in the housing used to drive the plurality of massage heads, wherein the driving assembly comprises a motor installed horizontally, a bevel gear installed on an output shaft of the motor and a gear assembly installed horizontally and driven by the bevel gear, the plurality of massage heads are divided into two equal groups, the two equal groups are positioned on both sides of the motor, every group of the massage heads is driven by the gear assembly.

2. The head massager of claim 1, wherein the gear assembly comprises a upper gear, a lower gear coaxially connected to the upper gear and two driven gears, the two driven gears are positioned on both sides of the upper gear and engaged with the upper gear, the lower gear engages with the bevel gear, each of the plurality of the massage heads is provided with a driving gear; in each group of the massage heads, the driving gear in the massage heads adjacent to the upper gear engages with the driven gears in each group of the massage heads, a transmission gear engaged with the adjacent driving gears is arranged between two adjacent massage heads.

3. The head massager of claim 1 or claim 2, wherein every massage head comprises a plurality of massage contacts.

4. The head massager of claim 1, wherein an air pump is installed in the rear housing, air bags connected to the air pump and able to move the housing down after the air bags are inflated are arranged on the top of the housing, a spring used for reposition of the housing is arranged between the housing and

the front housing, and a button used for controlling the air pump to inflate or deflate is provided at the top of the front housing.

5. The head massager of claim 4, wherein the front housing comprises a main housing having an opening on the top thereof, an assembly board fixed on the opening actively and a top cap covered on the assembly board, the housing is located on the assembly board, each of the plurality of massage heads is extended from a bottom of the assembly board, the air bags are arranged between the housing and the top cap.

6. The head massager of claim 5, wherein the assembly board is fixed on the opening via a flexible connecting part.

7. The head massager of claim 6, wherein the flexible connecting part is a soft sleeve.

8. The head massager of claim 5, wherein the assembly board comprises a connecting pole with a blind hole, the spring is fixed in the blind hole, the connecting pole is provided with a flange at the top of the blind hole used to limit the spring, a positioning pole able to be extended through the top of the blind hole and inserted into the spring is provided at an inside of the top cap.