

Claims

1. A ring-type pulse oximeter, comprising a rigid ring body (1), wherein a measurement unit (2) is arranged inside the rigid ring body (1), an elastic device (3), a photodiode (4), and at least one light emitting diode (5) are protrudingly disposed on an inner circumferential surface of the rigid ring body (1), and when the ring-type pulse oximeter is worn, the elastic device (3) is pressed, so that the photodiode (4) and the at least one light emitting diode (5) fit with a finger, light emitted by the light emitting diode (5) is attenuated by the finger, then received by the photodiode (4) and processed by the measurement unit (2) to calculate blood oxygen saturation, wherein the elastic device (3) comprises an elastic member (6) and at least one layer of pressing member; the elastic member (6) deforms when the elastic device is pressed, and wherein when the elastic device (3) comprises multiple layers of pressing members, one end of the elastic device is connected to the rigid ring body (1), and the other end of the elastic device is connected to the lowest layer of the pressing member, an upper-layer pressing member of adjacent two layers of pressing members is in an original state in which an upper-layer pressing member is partially embedded in the lower-layer pressing member when the elastic device (3) is not pressed, and the upper-layer pressing member moves towards the inside of the lower-layer pressing member when the elastic device (3) is pressed, and after the pressing disappears, the upper-layer pressing member moves towards the outside of the lower-layer pressing member under an acting force of the elastic member (6) and is restored to the original state.

2. The ring-type pulse oximeter according to claim 1, wherein the elastic member is a spring or a spring plate.

3. The ring-type pulse oximeter according to claim 1, wherein the pressing member is a hollow casing.

4. The ring-type pulse oximeter according to any one of claims 1-3, wherein the elastic device (3), the photodiode (4), and the at least one light emitting diode (5) are located on the same side of the rigid ring body (1).

5. The ring-type pulse oximeter according to claim 4, wherein a pressed surface of the uppermost-layer pressing member of the elastic device (3) has a transparent portion, and the photodiode (4) is located inside the elastic device (3) and fits with the transparent portion.

6. The ring-type pulse oximeter according to claim 5, wherein, comprising two light emitting diodes (5) located on two sides of the elastic device (3).

7. The ring-type pulse oximeter according to claim 4, wherein the photodiode (4) and the at least one light emitting diode (5) are respectively located on two sides of the elastic device (3).

8. The ring-type pulse oximeter according to any one of claims 1-3, wherein the photodiode (4) and the at least one light emitting diode (5) are located on the same side of the rigid ring body (1), and the elastic device (3) is located on the other side of the rigid ring body (1).

5 9. A ring-type pulse oximeter, comprising a rigid ring body (1), wherein a measurement unit (2) is arranged inside the rigid ring body (1), an elastic device (3), a photodiode (4), and at least one light emitting diode (5) are protrudingly disposed on an inner circumferential surface of the rigid ring body (1), and when the ring-type pulse oximeter is worn, the elastic device (3) is pressed, so that the photodiode (4) and the at least one light emitting diode (5) fit with a finger, light emitted by the light emitting diode (5) is attenuated by the finger, then received by the photodiode (4) and processed by the measurement unit (2) to calculate blood oxygen saturation, wherein the elastic device comprises a casing (10) and a silica gel (11), wherein the silica gel (11) is fastened inside the casing (10) and protrudes from a top end of the casing (10), when the silica gel (11) is pressed, the silica gel (11) deforms and moves towards the inside of the casing (10), and is restored to the protruding state after the pressing disappears.

15 10. The ring-type pulse oximeter according to claim 9, wherein the elastic device (3), the photodiode (4), and the at least one light emitting diode (5) are located on the same side of the rigid ring body (1).

11. The ring-type pulse oximeter according to claim 10, wherein the photodiode (4) is located inside the elastic device (3), and fits with the silica gel (11).

20 12. The ring-type pulse oximeter according to claim 11, wherein, comprising two light emitting diodes (5) located on two sides of the elastic device (3).

13. The ring-type pulse oximeter according to claim 10, wherein the photodiode (4) and at least one light emitting diode (5) are respectively located on two sides of the elastic device (3).

14. The ring-type pulse oximeter according to claim 9, wherein the photodiode (14) and the at least one light emitting diode (5) are located on the same side of the rigid ring body (1), and the elastic device (3) is located on the other side of the rigid ring body (1).