inserted into the receptacle **81** formed between this upper and lower halves of the sensor.

An upper half of the sensor shown generally as **70** is mounted above lower half **50** and is pivotally movable between an open position shown in FIG. **2** and a closed position shown in FIG. **3**. As shown in FIG. **7**, the upper enclosure **70** is pivotally joined to the lower enclosure **50** by means of an internal horizontal pin **71** which traverses two small holes **101** and **102** in the vertical supports **103** and **104**, respectively, and one large obround hole **72** in the upper enclosure. The large obround hole **72** allows a desirable cam effect around the pin **71** which permits the pivoting upper lid **70** to elevate and accommodate a variety of finger sizes. Obround hole **72** is formed by a generally unshaped member **105** on the bottom of knob **79**.

Fingertip enclosure **70** has a distal end **76** and a concave surface **77** forming its lower surface and a generally flat upper surface **78**. The lower concave surface **75** cooperates with the upper surface of the fingertip pad to form a receptacle **81** (FIG. **2**) for receiving the fingertip of a user. A knob **79** is carried by the proximal end of enclosure **70**. The purpose of the knob is to allow a user to open the device to accept a patient's finger. Opening the sensor allows insertion of the subject's finger and also turns on the oximeter by closing the mechanical switch **90** from pressure on the switch by prominence **114** (FIG. **4**).

FIG. **4** is a top view of the upper fingertip enclosure **70** which lifts up upon insertion of a finger or with pressure of the operator onto knob **79**. A prominence **114** on the under surface of the knob is located directly over a mechanical switch **90** which turns on the instrument as the lid is raised. The view of the underside of the upper enclosure **70** (FIG. **5**) shows grooves **106** and **107** which hold the concave lid cover and circuit board for the LED assembly.

FIG. **6** shows an internal view of the lower half **50** of the sensor module. A dual pin double row connector **55** plugs into a matching receptacle **56** when the module is inserted into the oximeter on rails **51** and **52**. Internal spring **92** is located adjacent to and just forward of a pivot pin **71** which is held in the small holes **101** and **102**. Internal spring **92** is oriented perpendicular to pin **71** so that spring **92** is stretched by an upward pivoting of upper enclosure **70**. A small hole **108** in gusset **109** is for attachment of the upper end of the spring (FIG. **5**). Shelf **110** holds a small circuit board containing the photodetector and an operational amplifier.

FIG. **7** shows concave fingerrest **75** closing the lower half **70** of the module. A rectangular opening **111** is for the transparent lens of the photodetector.

FIG. **8** shows the assembled sensor module **80**.

FIG. **9** shows the disassembled sensor and its six major plastic parts. Flex circuit **112** provides the electrical connection between the two sensor module circuit boards and is shown in greater than actual length for clarity.

FIG. **10** shows the sensing module **80** used in a combination pulse oximeter and thermometer **120**. An elongated temperature probe **130** is carried by the housing **121**, along with sterile probe covers. The same cordless sensing module can be readily adaptable to many other types of medical instruments such as combinations of O2 saturation with NIBP or end-tidal CO2 or cardiography.

Various design changes may be made without departing from the invention. For example, different internal spring mechanisms may be utilized, as well as different mounting mechanisms for detachably connecting the sensing module to the oximeter.

What is claimed is:

1. A cordless pulse oximeter, comprising:

a body portion carrying an internal power supply and pulse oximetry circuitry,

a recess formed in said body portion,

a sensing module removably carried in said recess,

said sensing module including a lower enclosure and an upper enclosure mounted above said lower enclosure, said upper enclosure being pivotally movable between a closed position and an open position, said upper enclosure cooperating with said lower enclosure to form a receptacle adapted to receive the fingertip of a user, a first sensing element carried by said upper enclosure, and a second sensing element carried by said lower enclosure,

means for removably attaching said sensing module into said recess in said body portion, and

cordless means for detachably connecting said sensing module to said pulse oximeter circuitry in said body portion.

2. The apparatus of claim **1** wherein said means for removably attaching said sensing module to said body portion comprises a system of mounting rails and reciprocal grooves on said body portion and said sensing module to allow the sensing module to be readily attached or detached from said body portion.

3. The apparatus of claim **1** further comprising a mechanical on-off switch which is closed when said fingertip cover is in its open position and which is open when said fingertip cover is in its closed position.

4. The apparatus of claim **3** further comprising a prominence on the upper enclosure which rests on said mechanical switch.

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