Title: DEVICE FOR MEASURING HEAD FORWARD

Abstract: The present invention provides a head forward measurement device [20] using two parts, namely a horizontal guide [22], and a base [24] with protractor scale [26] and pivoted arm [30]. To set up the measurement device [20], the horizontal guide [22] is inserted perpendicularly into a lug [34] of the base [24] structure. Measurement is conducted by placing bottom of horizontal guide [22] at the C7 vertebral level of subject [36] and the pivoted arm [30] is then lined until its highlighted line [32] is in tangent with the subject's auricle. Displacement of the arm [30] will then show the angle of head forward which can be read from the scale [26]. The measurement device [20] can be used for easy and accurate measurement of head forward of any men or women from all ages. The measurement can be easily compared with standard norms to assess the level or degree of severity and the evaluation will provide useful information to medical practitioners, physical educators and fitness instructors in reducing or controlling postural abnormalities.
— with information concerning request for restoration of
the right of priority in respect of one or more priority
claims (Rules 26bis.3 and 48.2(b)(vii))
DEVICE FOR MEASURING HEAD FORWARD

The present invention relates to a device which is used to measure human head forward in terms of postural displacement.

BACKGROUND ART

Human postures changes with time and these abnormalities may go unnoticed if not periodically checked. These changes are influenced by many factors, especially lifestyle choice. Medical professionals recognise that few body illness are due to incorrect posture and has devised various diagnostic methods for the correction thereof.

Head forward is a condition where the human head is displaced from the neck forward. Ideally, the head should sit directly on the neck and shoulders. However, forward head posture conditions bring the head off alignment and puts strain on neck and upper back muscles. The effect influenced by this posture on health includes spinal pain, headache, mood swing, blood pressure, pulse and lung capacity.

A prior art has listed a device that measures the distance that a subject's ear is located from the mid-point of the subject's shoulder. The device consists of a shoulder mounted base that is placed on a subject's shoulder by an examiner. Extending vertically from the shoulder mounted base is a vertical tower consisting of two parallel vertical members. An extension bar holder is slidably positioned overlying the vertical tower such that the vertical distance of the ear from the shoulder can be adjustably spanned by the extension bar holder and locked into place. An extension bar is slidably mounted in the distance that the lateral shoulder is located from the ear. A measuring bar is mounted in the extension bar that includes a distance a subject's ear is located from a subject's shoulder can be quickly and accurately measured.

Another prior art listed the use of a hand held instrument to determine the degree of angular deviation of a line between selected points on a subject from gravity dependent reference is provided having a transparent base through which the selected points on the subject may be viewed, and a gravity dependant indicator mounted on the base for free rotation under the influence of gravity. The base includes indicia complementary
with gravity dependent indicator to provide an indication of the degree of deviation between the gravity dependant indicator and the line between the selected points on the subject when the instrument is held in a substantially upright position. Different aspect of posture of individuals, including head forward, both stationary and in motion can be measured via this instrument.

The above first prior art focuses on the head forward measurement using a relatively complex device. The displacement of the head forward is measured in length. The second prior art is a hand held instrument which can be used to measure different aspect of postures of subject. Although the instrument is simple, the measurement mechanism is relatively complex as it requires functions of gravity dependant indicators and prior points selection. The deviation is measured in degree.

The present invention is made to allow easier accurate measurement of head forward via the use of a simple hand held tool which does not require complex setup or complex working mechanism. The use of this device may provide measurement of the human postural head forward abnormalities and the measurement can be easily compared with standard norms to assess the level or degree of severity. The evaluation will provide useful information to medical practitioners, physical educators and fitness instructors in assisting reduction or control of this postural abnormality.

SUMMARY OF INVENTION

The present invention discloses a device having two parts to measure head forward in terms of postural displacement. The first part comprise of a base with protractor scale, an arm pivoted at the origin of protractor scale, and a straight line along the arm that crosses the origin of protractor scale. The first part is characterized in that the base is provided with a lug, said lug to be fitted with second part, a horizontal guide perpendicular to the base.

The scale is provided with angle measurement from vertical or horizontal axis. A spirit level is provided at the base and aligned to the same angle or right angle of the protractor. Hence, the base can be guided to share the same angle as a person's neck vertical axis.
The second part, the horizontal guide is provided so that the base is at the same angle as a person's neck vertical axis. The horizontal guide is L-shaped elongated bar and has a predetermined length to fit most people's shoulder.

The protractor scale has transparent background and imprinted with angle measurement. The arm is also transparent and has a red line colour. The angle measurement can also incorporate digital electronics to provide display of angle measurement in digital form.

Once set up, the device can be used for easy and accurate measurement of head forward angle of any men or women from all ages. The evaluation will provide useful information in reducing or controlling postural abnormalities.

**BRIEF DESCRIPTION OF DRAWINGS**

Fig. 1 is a drawing of the parts that form the device for measuring head forward.  
Fig. 2 is a drawing of the assembled device for measuring head forward.  
Fig. 3 is a drawing of head forward measurement via the use of the device.

**DESCRIPTION OF EMBODIMENTS**

Hereinafter, the present invention is described in detail.

The invention is a device [20] to measure head forward angle consisting of two parts, namely, a horizontal guide [22] and a base [24] with protractor scale [26]. The two parts tool is shown individually in Figure 1 while Figure 2 shows the assembled measurement device [20].

The horizontal guide [22] is L-shaped elongated bar rod. The base [24] consists of a protector like scale [26] structure and is attached to an arm [30] pivoted at the origin [27] of the protractor scale [26]. On the arm, a highlighted straight line [32] is prominently shown in the centre that crosses the origin of protractor scale. In this preferred
embodiment, the line [32] is red in colour. On top of the scale structure is a lug [34] for insertion of horizontal guide [22] to fit in perpendicularly. Once fit in the measurement device [20], the device is assembled and ready for use.

The scale [26] is provided with angle measurement from vertical or horizontal axis. A spirit level is provided at the base [24] and aligned to the same angle or right angle of the protractor. The aim is to facilitate aligning the base [24] to a person's neck vertical axis from the person's arm.

The elongated bar is L-shaped so that the end of the bar can provide a horizontal guide [22] to a person's shoulder. The bar has a predetermined length to fit most people's shoulder. The bar provides a horizontal guide along the shoulder so that the base can be aligned to a person's neck vertical axis from the back of a person.

The protractor scale [26] has transparent background and imprinted with angle measurement. The arm [30] is also transparent. The angle measurement can also incorporate digital electronics to measure angle and provide measurement on display with electronic means. Person having ordinary skilled in the art will be able to adapt electronic means into the device.

To measure head forward angle, first, the bottom of the horizontal guide [22] is placed at the C7 vertebral level of a person [36]. The horizontal guide must be placed horizontally on the shoulder and the base must be at right angle to share the same angle as the person's neck vertical axis from the back. Next, the base is adjusted from the side of the arm so that the base shares the same angle as the person's neck vertical axis. The pivoted arm [30] of the base [24] is then lined until the red line [32] is in tangent to the auricle of subject. The displacement of the arm [30] will then show the angle of head forward of subject in degree. The reading can be measured from the scale [26] line. The bubble [28] level at the base [24] is to ensure that the measurement device [20] is at even level. At even level, the bubble will be at the centre. The measurement of head forward is as shown in Figure 3.

Accordingly, the invention disclosed a head forward measurement device [20] using two parts, namely a horizontal guide [22], and a base [24] with protractor scale [26] and
pivoted arm [30]. To set up the measurement device [20], the horizontal guide [22] is inserted perpendicularly to the lug [34] of the base [24] structure. Measurement is conducted by placing bottom of bar rod [22] at the C7 vertebral level of subject and the pivoted arm [30] is then lined until its highlighted line [32] is in tangent with the subject's auricle. Displacement of the arm [30] will then show the angle of head forward which can be read from the scale [26]. The measurement device [20] can be used for easy and accurate measurement of head forward of any men or women from all ages. The measurement can be easily compared with standard norms to assess the level or degree of severity and the evaluation will provide useful information in reducing or controlling postural abnormalities.
CLAIMS

1. A device [20] for measuring head forward, comprising:
   a base [24] with protractor scale [26];
   an arm [30] pivoted at the origin [27] of protractor scale [26];
   a straight line [32] along the arm [30] that crosses the origin [27];
   characterised in that,
   the base is provided with a lug [34], said lug to be fitted with a horizontal guide [22] perpendicular to base [24].

2. A device according to claim 1, wherein the scale [26] is provided with angle measurement from vertical axis.

3. A device according to claim 1, wherein the scale [26] is provided with angle measurement from horizontal axis.

4. A device according to claim 1, further comprising a spirit level [28] at the base [24] and aligned to the same angle of the protractor.

5. A device according to claim 1, further comprising a spirit level [28] at the base [24] and aligned to the right angle of the protractor.

6. A device according to claim 1, wherein the horizontal guide [22] is L-shaped elongated bar.

7. A device according to claim 1, wherein the guide [22] has predetermined length to fit most people’s shoulder.

8. A device according to claim 1, wherein the scale [26] has transparent background, and imprinted with angle measurement.

9. A device according to claim 1, wherein the arm [30] is transparent.

10. A device according to claim 1, wherein the line [32] is red in colour.

11. A device according to claim 1, further comprising electronic means to make angle measurement and provide digital display of measurement.
### INTERNATIONAL SEARCH REPORT

**International application No.**

PCT/MY2013/000236

### A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. A61B5/107 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl. A61B5/107

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

- Published examined utility model applications of Japan 1992-1996
- Published unexamined utility model applications of Japan 1971-2014
- Registered utility model specifications of Japan 1994-2014
- Published registered utility model applications of Japan 1994-2014

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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