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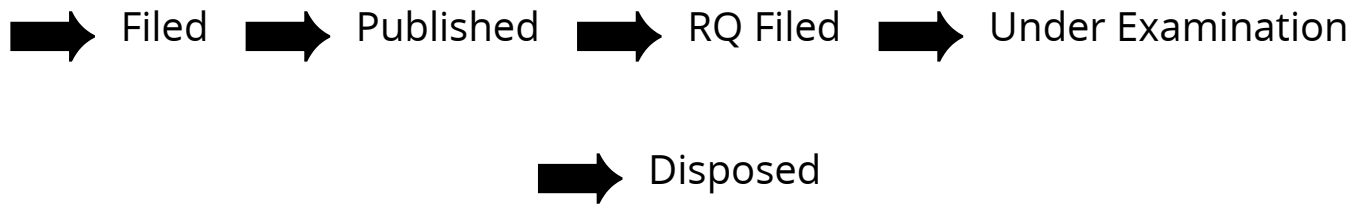
Application Details

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APPLICANT NAME	1 . Dr. N.K. BATRA 2 . Dr. Manu Goyal 3 . Dr. Neera Batra 4 . Hitesh Jangra 5 . Diwaker Tanwer
TITLE OF INVENTION	FLEX SENSOR BASED POSTURE ALARMING SMART VEST
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
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Application Status

APPLICATION STATUS	Awaiting Request for Examination
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FORM 2
THE PATENTS ACT 1970
(39 of 1970)
&
THE PATENT RULES, 2003
COMPLETE SPECIFICATION
(See section 10 and rule 13)

1. TITLE OF THE INVENTION: -

Flex sensor based posture alarming smart vest

2. Applicant(s)

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3. PREAMBLE OF THE DESCRIPTION

The following specification particularly describes the invention and the manner in which it is to be performed

Field of Invention

The present invention relates to alarming posture vest and a method for improving body posture.

Background of the Invention

WO2006121413A1 discloses a posture vest for improving body posture comprising: an elastic waist strap; an elastic back strap having a first portion connected to the waist strap; and a pair of length-adjustable elastic shoulder straps connected from a second portion of the back strap to the first portion of the back strap.

US20120278966 discloses a posture support vest, including a bodysuit having an elastic waistband for slimming the abdomen, elastic shoulder straps for helping to keep the shoulders and back straight, and a bottom strap to prevent the waistband from slipping upward. The bottom strap also allows the user to maintain proper vertical tension in the back of the garment. Also included is a method for correcting and maintaining good posture.

US20120078149 discloses one embodiment of an orthopedic posture brace comprising a holster strap that forms two arm loops when attached to an axial strap and two abdominal straps. When worn, the holster straps encircle the user's shoulders. The axial strap will rest against the thoracic region of the user's back. After the two abdominal straps pass through a loop at the bottom of the axial strap, the two ends not connected to the holster strap may be fastened together around the front of the user's abdomen. Tightening the ends of the abdominal

strap will cause tension in the holster straps urging the user's shoulders rearward to encourage proper spinal alignment and reduced slouching or hunching over. The amount of tension generated by tightening the abdominal straps will determine how far back toward the spinal column the user's shoulders are pulled.

US4750480A discloses an orthopaedic posture brace comprising a holster strap that forms two arm loops when attached to an axial strap and two abdominal straps. When worn, the holster straps encircle the user's shoulders. The axial strap will rest against the thoracic region of the user's back. After the two abdominal straps pass through a loop at the bottom of the axial strap, the two ends not connected to the holster strap may be fastened together around the front of the user's abdomen. Tightening the ends of the abdominal strap will cause tension in the holster straps urging the user's shoulders rearward to encourage proper spinal alignment and reduced slouching or hunching over.

US20050070830A1 Discloses is an apparatus that serves to alert an individual to a change in the individual's posture. A responder that provides an alerting signal to the wearer of the apparatus is mounted on an elastic band that is worn by the individual. When the individual's posture is correct, there is no alerting signal. When the individual's posture changes, and in particular by slouching, the elastic band stretches, a switch is then closed in the responder thereby completing an electrical circuit which generates an alerting signal such as a small buzz or tone to the wearer. In response to this signal, the wearer can correct posture and thus turn off the alerting signal.

Brief Description of the Drawings

FIG. 1 is a diagrammatic illustration showing the flow diagram.

FIG.2 is a diagrammatic illustration showing the hardware used.

FIG. 3 is a diagrammatic illustration showing the front view of the invented flex sensor based posture alarming smart vest.

Summary of the Invention

The present invention relates to alarming posture vest and a method for improving body posture. The objective of the present invention is to provide a smart alarming posture vest comprising: Two elastomeric axial strap having a top and a bottom to be disposed in alignment with the spinal column from the Cervicothoracic junction to the mid-thoracic area when worn to which a microcontroller device is attached which provides a warning if the person adopts an abnormal posture.

Detailed Description of the Invention

The device is attached to the vest with the help of two straps. Whenever a person adopts a bending posture beyond its normal limits for up to three minutes continuously, the sensor gives a feedback to the microcontroller. The microcontroller operates and sends power supply to the buzzer attached. The buzzer operates and provides a warning to the concerned person to correct his posture.

The following components are used in the invention:

Arduino Uno (101)

Flex sensor (102)

Buzzer (103)

LED (104)

Resistor 10K (105)

Elastic Straps: Two (3 inches width) adhesive straps are attached to the vest at a gap of 10 cm.

Microcontroller: Arduino Uno is attached on the lower strap

Flex sensor: An 8 cm long flex sensor is used in the circuit. One end of flex sensor is attached to the microcontroller and other end is attached to the upper elastic strap.

Buzzer: A buzzer which is powered by microcontroller is fixed near the shoulder through insulated flexible wires.

Power Supply: A 9 volt battery is attached to the microcontroller which provides power to the buzzer.

We claim:

1. A flex sensor based posture alarming smart vest comprises Microcontroller Arduino Uno (101), Flex sensor (102), Buzzer (103), LED (104), Resistor 10K (105);

wherein Two Elastic Straps (3 inches width) adhesive straps are attached to the vest at a gap of 10 cm.

2. The vest as claimed in claim 1, wherein said Arduino Uno is attached on the lower strap.

3. The vest as claimed in claim 1, wherein an 8 cm long flex sensor is used in the circuit.

4. The vest as claimed in claim 1, wherein one end of flex sensor is attached to the microcontroller and other end is attached to the upper elastic strap.

5. The vest as claimed in claim 1, wherein a buzzer which is powered by microcontroller is fixed near the shoulder through insulated flexible wires.

6. The vest as claimed in claim 1, wherein a 9 volt battery is attached to the microcontroller which provides power to the buzzer.

Dated this June 18, 2020



(Ashish Sharma)
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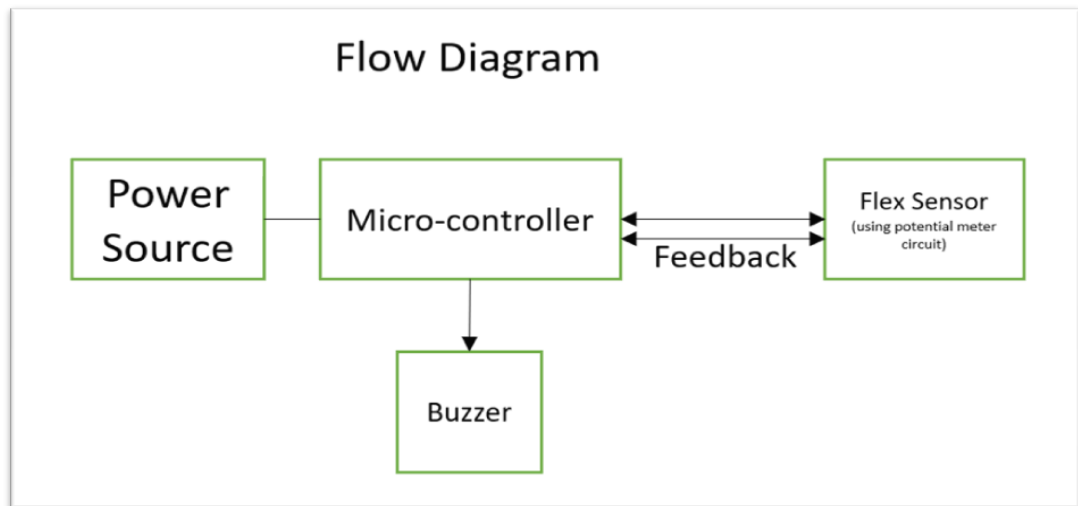


Figure 1

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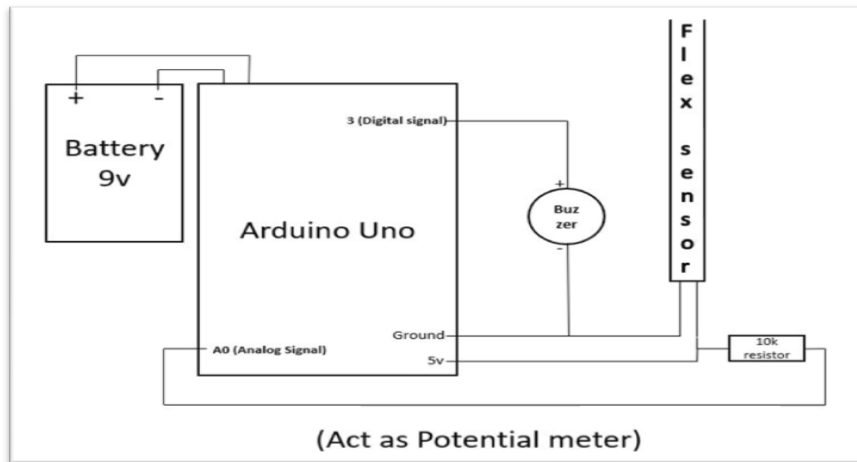


Figure 2

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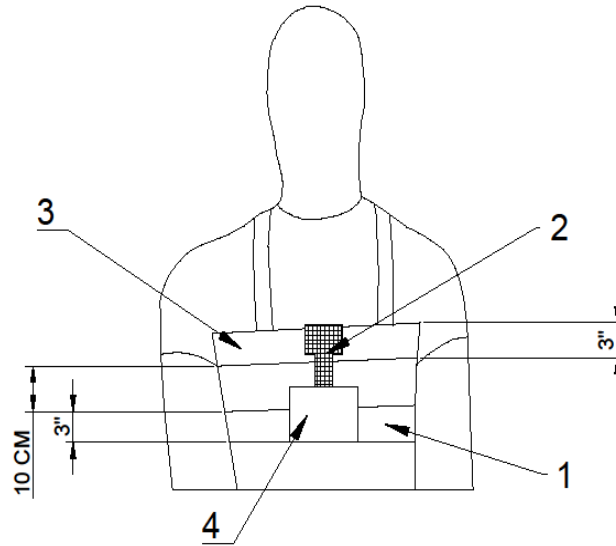


Figure 3.

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ABSTRACT

FLEX SENSOR BASED POSTURE ALARMING SMART VEST

The present invention relates to alarming posture vest and a method for improving body posture. Wrong body posture has various harmful effect on human's health. Improper sitting posture results in various work-related musculoskeletal disorders such as neck pain, shoulder girdle pain, headaches, and even lower back pain. Even the poor posture looks unpleasant to eyes with the person having rounded shoulders with hunched back, short neck and forward head posture.. Existing posture correcting devices comprising of elastic shoulder strap and waist strap can result in excessive pulling of the strap for correcting posture but causes discomfort to the users. A need therefore exist for smarter vest which address the problem of Experienced by the users In the present invention a vest has been fabricated which provides a warning In an abnormal sitting posture. In the present invention a device is attached to the vest which provides a warning in case of poor posture. The device works on the principle of bending. The device consist of flex sensor and resistor controlled by microcontroller.