



New connection on: : 07-12-2017 : 23:20:42 - Last disconnection on: : 07-12-2017 : 20:21:26

V 4.0.0.44164(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201714)) (RPM D201714)

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[EPODOC: SS 15] ..er all

[SS 1] ..fi

Select a database: ..FI EPODOC

 Database: EPODOC

[EPODOC: SS 1] sensor ans pressure and (layer or film) and polym+

Results in EPODOC 0

EPODOC: term 'SENSOR ANS PRESSURE' not found in index 'BI'. WARNING(1)

[SS 2] sensor and pressure and (layer or film) and polym+

Results in EPODOC 413

[SS 3] 2 and mech

Results in EPODOC 0

[SS 4] 3 and (pad+ or mattre+)

Results in EPODOC 0

[SS 5] 2 and (pad+ or mattre+)

Results in EPODOC 18

[SS 6] ..v

[EPODOC: SS 6] ..li



PN	- US2017135494 A1 20170518
PNFP	- US9833081 B2 20171205
PR	- US201615352793 20161116; US201562256404P 20151117
AP	- US201615352793 20161116
DT	- *; Rep
CCI	- A47C27/002 ; A47C27/05 ; A47C27/121 ; A47C31/123
CQI	- A47C31/00
PA	- (A1 B2) DREAMWELL LTD [US]
TI	- (A1) MATTRESS WITH FLEXIBLE PRESSURE SENSOR - (B2) Mattress with flexible pressure sensor
AB	- (A1 B2) Mattresses including a polymeric contact sensor configured to provide real- time dynamic contact information, which can then be used to report sleep quality, body position and/or pressure distributions to the user. The polymeric contact sensors could also be used to control parameters of the mattress and/or foundation with adjustable firmness for a given position and/or body shape/type/size. The polymeric contact sensor includes a plurality of flexible strips formed of a polymeric material and a conductive filler, wherein the polymeric contact sensor is in electrical communication with a data acquisition terminal, wherein the polymeric contact sensor is disposed on or within the upholstery layer , or on or within the quilt layer , or on a top surface of the innercore unit.

PN	- CN205358441U U 20160706	
PR	- CN201521141647U 20151231	
AP	- CN201521141647U 20151231	
DT	- I	
PA	- GUANGDONG BIZYI CHINA NETWORK TECH CO LTD	
TI	- Intelligent insole	
AB	- The utility model discloses an intelligent insole, including shoe - pad upper strata and shoe - pad lower floor, it is protruding that shoe - pad upper strata surface is equipped with a plurality of, the shoe - pad upper strata is equipped with pressure sensor , temperature sensor , humidity transducer and odor sensor , the shoe - pad upper strata still is equipped with blow hole, and mouthful sub -unit connection of blowing there is miniature hairdryer, miniature hairdryer next door is equipped with the smell annihilator, and establish on the shoe - pad upper surface on smell annihilator upper portion, shoe - pad lower floor is equipped with the battery, be connected with the wireless module of charging on the battery, shoe - pad lower floor still is equipped with controller, wireless transmission module and orientation module, the polymer lithium ion battery of battery for can charge many times, the controller is the singlechip, the carbon element heater is layer arrangement web formation check type on the shoe - pad , the utility model discloses simple structure, it is multiple functional, reasonable in design, temperature, humidity and the smell on the adjustable shoe - pad of this intelligent	

insole surface.

3/18 © EPODOC / EPO

PN - [JP2015210244](#) A 20151124
PR - JP20140093943 20140430
AP - JP20140093943 20140430
DT - I
CT - || STSE (A)
[JP2009053109](#) A 20090312
[Y] (AISIN SEIKI, et al)
[Y] 1-3
* Paragraphs0020-0026,
Figures1-3 *;
[JPS62135460U](#) U 19870826 [Y]
[Y] 1-3
* Page4 Line16 - Page5
Line11, Figures *;
[EP2521193](#) A1 20121107
[A] (BAYER MATERIALSCIENCE
AG [DE])
[A] -
* Whole Document *
FI - G01L1/16&B
PA - FUJITSU LTD; KAWAMURA
SANGYO CO LTD
TI - **PRESSURE-SENSITIVE
POLYMER DEVICE**
AB - PROBLEM TO BE SOLVED: To
provide a **pressure**-sensitive
device excellent in **sensor**
sensitivity.SOLUTION:
A **pressure**-sensitive **polymer**
device comprises: an electret
material indicating
a **pressure** sensitivity; an
organic insulation dielectric
material arranged around the
electret material; a
conductor **pad** arranged on
the organic insulation
dielectric material; and a
signal line lead out from the
conductor **pad**. The
conductor **pad** is provided on
each of opposite faces of a
first circuit board and a
second circuit board that are
arranged opposite to each
other. The electret material is
provided on at least one of
the conductor **pads** provided



on the first circuit board and the second circuit board. The organic insulation dielectric material includes: an insulative adhesion **layer** bonding the conductor **pad** and the electret material; and a filling **layer** formed between the first circuit board and the second circuit board.

4/18 © EPODOC / EPO

- PN - [US2015219513](#) A1 20150806
- PR - JP20120262107 20121130; WO2013JP80468 20131111
- AP - US201514687188 20150415
- DT - *; Rep
- CT - || R141 (A1)
[US4461180](#) A 19840724 [] (HELLOUIN DE MENIBUS OLIVIER [FR]);
[US5285690](#) A 19940215 [] (KOEN EDWARD F [US], et al);
[US5412992](#) A 19950509 [] (TOBITA TOMOYUKI [JP], et al);
[US5424097](#) A 19950613 [] (OLSON ROGER A [US], et al);
[US5438876](#) A 19950808 [] (LEWIS BRIAN D [US]);
[US5780928](#) A 19980714 [] (ROSTOKER MICHAEL D [US], et al);
[US6140144](#) A 20001031 [] (NAJAFI NADER [US], et al);
[US6512255](#) B2 20030128 [] (AOKI TAKASHI [JP], et al);
[US6561038](#) B2 20030513 [] (GRAVEL JAMES L [US], et al);
[US6807864](#) B2 20041026 [] (TAKAKUWA MASAKI [JP], et al);
[US6962081](#) B2 20051108 [] (UEYANAGI KATSUMICHI [JP], et al);
[US7119657](#) B2 20061010 [] (UEYANAGI KATSUMICHI [JP], et al);
[US7216545](#) B2 20070515 [] (UCHIDA KOUJI [JP], et al);
[US7454976](#) B2 20081125 [] (WANAMI SHINGO [JP], et al);
[US8671766](#) B2 20140318 [] (STERLING JAMES WILLIAM [US], et al);
[US8674462](#) B2 20140318 [] (WOMBACHER RALF [DE], et al);
[US9366593](#) B2 20160614 [] (VAUPEL MATHIAS [DE], et al)
- CCI - [G01L9/0052](#) ; [G01L19/0069](#) ; [G01L19/0654](#) ; [H01L23/057](#) ; [H01L24/85](#)
- CQI - [G01L19/0084](#) ; [H05K13/00](#)
- CLC - [H01L2924/181](#) , [H01L2924/00012](#) , ADD
- [H01L2224/48091](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45144](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48091](#) , [H01L2924/00](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01074](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01007](#) , ADD
- [H01L2224/05124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/05644](#) , [H01L2924/00014](#) , ADD
- [H01L2224/85444](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48247](#) , [H01L2924/00](#) , ADD
- CCA - [H01L2924/181](#) ; [H01L23/24](#) ; [H01L24/05](#) ; [H01L24/45](#) ; [H01L2224/05124](#) ;
[H01L2224/05166](#) ; [H01L2224/05644](#) ; [H01L2224/32225](#) ; [H01L2224/45124](#) ;
[H01L2224/45144](#) ; [H01L2224/48091](#) ; [H01L2224/48247](#) ; [H01L2224/48465](#) ;

[H01L2224/73265](#) ; [H01L2224/85444](#) ; [H01L2224/8592](#) ; [Y10T29/49171](#)

- PA - FUJI ELECTRIC CO LTD [JP]
TI - **PRESSURE**SENSOR DEVICE AND METHOD FOR MANUFACTURING THE SAME
AB - In aspects of the invention, a **sensor** unit is stored in a recessed **sensor** mount portion formed in a resin case. The **sensor** unit can be formed so that a semiconductor **pressure sensor** chip is joined to one side of a glass pedestal, and the other side of the glass pedestal is die-bonded to the bottom of the **sensor** mount portion through an adhesive. An electrode **pad** on the semiconductor **pressure sensor** chip is electrically connected through a bonding wire to a lead terminal for leading externally that pierces through the resin case and is integrally insert-molded therein. An entire surface of the **sensor** unit, an exposed part of the lead terminal internally-located in the resin case, the bonding wire, and an exposed part of an inner wall of the resin case can be coated with the protective **film** composed of a poly (p-xylylene)-family **polymer** including fluorine.

5/18 © EPODOC / EPO

- PN - [CN104736984](#) A 20150624
PNFP - CN104736984B B 20170908
PR - WO2013JP80468 20131111; JP20120262107 20121130
AP - CN2013854665 20131111
DT - I
CT - || STSE (A)
[US2004021209](#) A1 20040205 [A] (SHIONO MIKIO [JP], et al)
[A] 1-11
* 全文 *;
[JP2005283587](#) A 20051013 [A] (DENSO CORP)
[A] 1-11
* 全文 *;
[CN101459221](#) A 20090617 [Y] (SEIKO EPSON CORP [JP])
[Y] 7
* 具体实施方式 *;
[CN101145532](#) A 20080319 [AY] (DENSO CORP [JP])
[A] 1-11
* 具体实施方式及附图 *
[Y] 1-11;
[US2006137458](#) A1 20060629 [A] (UCHIDA KOUJI [JP], et al)
[A] 1-11
* 全文 *;
[JP2007033047](#) A 20070208 [A] (MITSUBISHI ELECTRIC CORP)
[A] 1-11
* 全文 *;
[CN1645079](#) A 20050727 [YX] (DENSO CORP [JP])
[Y] 1-11
* 具体实施方式及附图 *
[X] 1-6,8-11;
[US2009026560](#) A1 20090129 [Y] (WOMBACHER RALF [DE], et al)
[Y] 1-9
* 说明书第[0014]-[0023]段及附图1 *;
[CN102786025](#) A 20121121 [Y] (INFINEON TECHNOLOGIES AG)
[Y] 1-9
* 说明书第[0018]段及附图3 *

- CCI - [G01L9/0052](#) ; [G01L19/0069](#) ; [G01L19/0654](#) ; [H01L23/057](#) ; [H01L24/85](#)
- CQI - [G01L19/0084](#) ; [H05K13/00](#)
- CLC - [H01L2924/181](#) , [H01L2924/00012](#) , ADD
- [H01L2224/48091](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45144](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48091](#) , [H01L2924/00](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01074](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01007](#) , ADD
- [H01L2224/05124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/05644](#) , [H01L2924/00014](#) , ADD
- [H01L2224/85444](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48247](#) , [H01L2924/00](#) , ADD
- CCA - [H01L2924/181](#) ; [H01L23/24](#) ; [H01L24/05](#) ; [H01L24/45](#) ; [H01L2224/05124](#) ;
[H01L2224/05166](#) ; [H01L2224/05644](#) ; [H01L2224/32225](#) ; [H01L2224/45124](#) ;
[H01L2224/45144](#) ; [H01L2224/48091](#) ; [H01L2224/48247](#) ; [H01L2224/48465](#) ;
[H01L2224/73265](#) ; [H01L2224/85444](#) ; [H01L2224/8592](#) ; [Y10T29/49171](#)
- PA - (A)
FUJI ELECTRIC CO LTD
- TI - (A)
Pressure sensor device and pressure sensor device manufacturing method
- AB - (A)
A **sensor** unit (10) is housed in a recessed **sensor** mount part (2) formed in a resin case (1). The **sensor** unit (10) is configured so that a semiconductor **pressure sensor** chip (11) and a glass base (12) are joined, and the glass base (12) side of the unit is die bonded, using an adhesive (13), to the bottom of the **sensor** mount part (2). An electrode **pad** on the semiconductor **pressure sensor** chip (11) is electrically connected, via a bonding wire (4), to a lead terminal (3) that is for external lead out and that passes through and is integrally inserted-molded with the resin case. The entire surface of the **sensor** unit (10), the portions of the lead terminal (3) that are exposed to the inside of the resin case (1), the bonding wire (4), and the exposed portions (including the inner walls of the **sensor** mount part (2)) of the inner wall (1a) of the resin case (1) are covered by a protective **film** (5) comprising a poly-paraxylylene **polymer** that contains fluorine. As a result of the foregoing, the reliability of the **pressure sensor** device can be improved.

6/18 © EPODOC / EPO

- PN - [WO2015081589](#) A1 20150611
- PR - CN20131656456 20131206
- AP - WO2013CN90041 20131220
- DT - *; Rep
- CT - [CN] ISR (A1)
[JPH0819581](#) A 19960123
[X] (KATAGIRI SHIRO, et al);
[CN102058936](#) A 20110518
[A] (SHANDONG RES INST OF
CANCER PREVENTION AND
TREAT);
[CN101224105](#) A 20080723

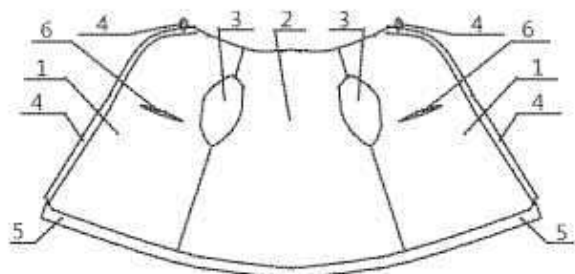


图 1 / Fig.1

	[A] (XINAOMDT TECHNOLOGY CO LTD [CN]); CN101884536 A 20101117 [A] (SHENZHEN MINDRAY BIO MEDELECT); US2005234372 A1 20051020 [A] (HANSEN CRAIG N [US], et al); US2006004281 A1 20060105 [A] (SARACEN MICHAEL [US])
CCI	- A61B5/1135 ; A61B5/6805
CCA	- A61N5/1068 ; A61B2562/0247
PA	- LIU MIAOSHENG [CN]
TI	- INFLATABLE VEST CAPABLE OF MONITORING AND CONTROLLING AMPLITUDE AND PHASE OF RESPIRATORY MOTION
AB	- An inflatable vest capable of monitoring and controlling the amplitude and phase of respiratory motion, the inflatable vest comprising front pieces (1), a back piece (2), at least one inflatable layer (8), in the front pieces (1) and back piece (2), divided into an inner layer , an outer layer , and a middle, and at least one of the front pieces (1) and back piece (2) are made of a polymeric material impermeable to air. The inflatable vest may be connected to a pressure measurement device (11), i.e. a flow sensor (14) or pressure sensor (13), and by means of the pressure measurement device (11), the pressure of the gas in the inflatable layer (8) of the inflatable vest is monitored in real time and changed into an electrical signal. In the inflatable vest, the front piece inner layer (1) and outer layer can be directly stitched or adhesively fixed on a vacuum pad (14), the

vacuum **pad** (14) serving as the back piece (2), thus forming a combination inflatable vest; or, after a body membrane is fixed, the inflatable vest is again placed below the body membrane and used in combination. By means of monitoring and controlling the **pressure** inside the inflatable vest inflatable **layer** (8), the amplitude and phase of respiratory motion can be monitored and controlled in real time.

7/18 © EPODOC / EPO

PN - [EP2927656](#) A1 20151007

PNFP - EP2927656 A4 20160629

PR - JP20120262107 20121130; WO2013JP80468 20131111

AP - EP20130859540 20131111

DT - **

CT - || STSE (A4)

[US2012291559](#) A1 20121122 [XI] (STERLING JAMES WILLIAM [US], et al)
[X] 1,2,6,8

* abstract *

* figure 3 *

* paragraphs [0012] - [0018] *

[I] 3-5,7,9-11;

[FR2798732](#) A1 20010323 [I] (DENSO CORP [JP])

[I] 1-11

* abstract *

* figures 8A-10A *

* page 1, lines 31-33 *

* page 2, lines 1,15-33 *

* page 10, lines 17-19 *

* pages 21-22 *;

[US2009026560](#) A1 20090129 [I] (WOMBACHER RALF [DE], et al)

[I] 1-11

* abstract *

* figure 1 *

* paragraphs [0017] - [0023] *

* paragraphs [0029] - [0036] *;

[US5424097](#) A 19950613 [A] (OLSON ROGER A [US], et al)

[A] 1-11

* abstract *

* column 1, line 15 - column 2, line 7 *

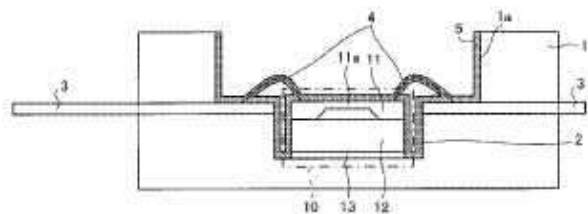
CCI - [G01L9/0052](#) ; [G01L19/0069](#) ; [G01L19/0654](#) ; [H01L23/057](#) ; [H01L24/85](#)

CQI - [G01L19/0084](#) ; [H05K13/00](#)

- CLC - [H01L2924/181](#) , [H01L2924/00012](#) , ADD
- [H01L2224/48091](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45144](#) , [H01L2924/00014](#) , ADD
- [H01L2224/45124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48091](#) , [H01L2924/00](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01074](#) , ADD
- [H01L2224/05166](#) , [H01L2924/01007](#) , ADD
- [H01L2224/05124](#) , [H01L2924/00014](#) , ADD
- [H01L2224/05644](#) , [H01L2924/00014](#) , ADD
- [H01L2224/85444](#) , [H01L2924/00014](#) , ADD
- [H01L2224/48465](#) , [H01L2224/48247](#) , [H01L2924/00](#) , ADD
- CCA - [H01L2924/181](#) ; [H01L23/24](#) ; [H01L24/05](#) ; [H01L24/45](#) ; [H01L2224/05124](#) ;
[H01L2224/05166](#) ; [H01L2224/05644](#) ; [H01L2224/32225](#) ; [H01L2224/45124](#) ;
[H01L2224/45144](#) ; [H01L2224/48091](#) ; [H01L2224/48247](#) ; [H01L2224/48465](#) ;
[H01L2224/73265](#) ; [H01L2224/85444](#) ; [H01L2224/8592](#) ; [Y10T29/49171](#)
- PA - (A1 A4)
FUJI ELECTRIC CO LTD [JP]
- TI - (A1 A4)
PRESSURESENSOR DEVICE AND **PRESSURESENSOR** DEVICE MANUFACTURING METHOD
- AB - (A1)
A **sensor** unit (10) is stored in a recessed **sensor** mount portion (2) formed in a resin case (1). The **sensor** unit (10) is formed so that a semiconductor **pressure sensor** chip (11) is joined to one side of a glass pedestal (12), and the other side of the glass pedestal (12) is die-bonded to the bottom of the **sensor** mount portion (2) through an adhesive (13). An electrode **pad** on the semiconductor **pressure sensor** chip (11) is electrically connected through a bonding wire (4) to a lead terminal (3) for leading externally that pierces through the resin case (1) and is integrally insert-molded therein. An entire surface of the **sensor** unit (10), an exposed part of the lead terminal (3) internally-located in the resin case (1), the bonding wire (4), and an exposed part of an inner wall (1a) of the resin case (1) (including the inner wall of the **sensor** mount portion (2)) is coated with the protective **film** (5) composed of a poly(p -xylylene)-family **polymer** including fluorine. This allows the **pressure sensor** device to improve reliability.

8/18 © EPODOC / EPO

- PN - [WO2014084033](#) A1 20140605
- PR - JP20120262107 20121130
- AP - WO2013JP80468 20131111
- DT - **
- CT - [JP] ISR (A1)
[JPH05223670](#) A 19930831
[A] (FUJIKURA LTD);
[JPH0873569](#) A 19960319
[A] (FUJI ELECTRIC CO LTD)
- CCI - [G01L9/0052](#) ; [G01L19/0069](#) ;
[G01L19/0654](#) ; [H01L23/057](#) ;
[H01L24/85](#)
- CQI - [G01L19/0084](#) ; [H05K13/00](#)
- CLC - [H01L2924/181](#) ,



	H01L2924/00012 , ADD - H01L2224/48091 , H01L2924/00014 , ADD - H01L2224/45144 , H01L2924/00014 , ADD - H01L2224/45124 , H01L2924/00014 , ADD - H01L2224/48465 , H01L2224/48091 , H01L2924/00 , ADD - H01L2224/05166 , H01L2924/01074 , ADD - H01L2224/05166 , H01L2924/01007 , ADD - H01L2224/05124 , H01L2924/00014 , ADD - H01L2224/05644 , H01L2924/00014 , ADD - H01L2224/85444 , H01L2924/00014 , ADD - H01L2224/48465 , H01L2224/48247 , H01L2924/00 , ADD
CCA	- H01L2924/181 ; H01L23/24 ; H01L24/05 ; H01L24/45 ; H01L2224/05124 ; H01L2224/05166 ; H01L2224/05644 ; H01L2224/32225 ; H01L2224/45124 ; H01L2224/45144 ; H01L2224/48091 ; H01L2224/48247 ; H01L2224/48465 ; H01L2224/73265 ; H01L2224/85444 ; H01L2224/8592 ; Y10T29/49171
PA	- FUJI ELECTRIC CO LTD [JP]
TI	- PRESSURESENSOR DEVICE AND PRESSURESENSOR DEVICEMANUFACTURING METHOD
AB	- A sensor unit (10) is housed in a recessed sensor mount part (2) formed in a resin case (1). The sensor unit (10) is configured so that a semiconductor pressure sensor chip (11) and a glass base (12) are joined, and the

glass base (12) side of the unit is die bonded, using an adhesive (13), to the bottom of the **sensor** mount part (2). An electrode **pad** on the semiconductor **pressure sensor** chip (11) is electrically connected, via a bonding wire (4), to a lead terminal (3) that is for external lead out and that passes through and is integrally inserted-molded with the resin case. The entire surface of the **sensor** unit (10), the portions of the lead terminal (3) that are exposed to the inside of the resin case (1), the bonding wire (4), and the exposed portions (including the inner walls of the **sensor** mount part (2)) of the inner wall (1a) of the resin case (1) are covered by a protective **film** (5) comprising a poly-paraxylylene **polymer** that contains fluorine. As a result of the foregoing, the reliability of the **pressure sensor** device can be improved.

9/18 © EPODOC / EPO

PN - [CN203609770U](#) U 20140528

PR - CN20132800829U 20131206

AP - CN20132800829U 20131206

DT - I

PA - LIU MIAOSHENG

TI - Inflatable waistcoat capable of monitoring and controlling amplitude and time phase of respiratory movement

AB - The utility model provides an inflatable waistcoat capable of monitoring and controlling amplitude and time phase of respiratory movement. The inflatable waistcoat comprises a front piece and a back piece, wherein at least one of the front piece and the back piece can be divided into an inner **layer**, an outer **layer** and an inflatable **layer** in the middle, and at least one of the front piece and the back piece is made of gastight high **polymer** materials. The inflatable waistcoat can be connected with a **pressure** measuring device, i.e. a flow **sensor** or a **pressure sensor**, and the gas **pressure** in the inflatable **layer** of the inflatable waistcoat can be monitored in real time through the pressuring measuring device and can be converted into an electric signal. According to the inflatable waistcoat, the inner **layer** and the outer **layer** of the front piece can be directly fixed to a

vacuum **pad** in a sewed or adhered manner, the vacuum **pad** is served as the back piece, thereby forming the combined inflatable waistcoat, or the inflatable waistcoat is put under a mantle for combined utilization after fixing the mantle. According to the inflatable waistcoat, the amplitude and time phase of respiratory movement can be monitored in real time and controlled through monitoring and controlling the **pressure** inside the inflatable **layer** of the inflatable waistcoat.

10/18 © EPODOC / EPO

PN - [US2012279953](#) A1 20121108

PR - US201213422279 20120316; US201161453311P 20110316

AP - US201213422279 20120316

DT - **

CT - || R141 (A1)
[US6967309](#) B2 [];
[US2009095735](#) A1 [];
[US2007272673](#) A1 [];
[US2010161016](#) A1 [];
[US8065763](#) B2 [];
[US2008283513](#) A1 [];
[US4423308](#) A [];
[US6582456](#) B1 [];
[WO9902399](#) A1 [];
[US2715674](#) A [];
[US3780262](#) A [];
[US3808403](#) A [];
[US4495402](#) A [];
[US5023433](#) A [];
[US5723845](#) A [];
[US5932129](#) A [];
[US6084217](#) A [];
[US6189487](#) B1 [];
[US6215111](#) B1 [];
[US6229123](#) B1 [];
[US6240623](#) B1 [];
[US6373034](#) B1 [];
[US6403935](#) B2 [];
[US6434328](#) B2 [];
[US2002124312](#) A1 [];
[US2004164499](#) A1 [];
[US6770854](#) B1 [];
[US2004237206](#) A1 [];
[US2005016982](#) A1 [];
[US6872758](#) B2 [];
[US6933469](#) B2 [];
[US7053344](#) B1 [];
[US2006260060](#) A1 [];
[US7161120](#) B1 [];
[US7176419](#) B2 [];
[US2007108190](#) A1 [];
[US2007152479](#) A1 [];
[US2008255641](#) A1 [];
[US2009078690](#) A1 [];

	US7543344 B2 []; US2009222996 A1 []; US7714255 B2 []; US2010224612 A1 []; US2010283295 A1 []; US7851729 B2 []; US2011031230 A1 []; US2012111846 A1 []; US8288693 B2 []; US8283602 B2 []; US2012273475 A1 []; US8418297 B2 []; US8624164 B2 []; US2014074086 A1 []; US8698044 B2 []
CCI	- A61G13/12 ; A61G13/1265 ; A61F7/007 ; A61F7/0097 ; A61F7/08
CCA	- A61F2007/0071 ; A61F2007/0091 ; A61F2007/0288 ; A61F2007/0295 ; A61G2203/46 ; A61G2210/90
PA	- AUGUSTINE SCOTT D [US]; AUGUSTINE RYAN S [US]; ARNOLD RANDALL C [US]; DEIBEL RUDOLF A [US]; ENTENMAN SCOTT A [US]; NEILS THOMAS F [US]; LELAND KEITH J [US]; AUGUSTINE BIOMEDICAL AND DESIGN LLC [US]
TI	- HEATED UNDER-BODY WARMING SYSTEMS
AB	- A heated underbody supports including heated mattresses , heated mattress overlays and heated pads , and methods of using heated underbody supports, for therapeutic warming. The heated underbody supports include a heater assembly and a layer of compressible support material. The heater assembly includes a flexible heating element , first and second bus bars, and a temperature sensor . The flexible heating element is a conductive fabric which can be adapted to stretch into a 3-dimensional compound curve without wrinkling or folding while maintain electrical conductivity, and wherein the heating element is adapted to return to the planar shape when pressure is removed. The flexible heating element may include a fabric which is coated with a conductive or semi-conductive polymer . The heated underbody support may also include a water resistant shell which may encase the heater assembly and the compressible support material.

PN - [US2012256838](#) A1 20121011

PNFP - US8692646 B2 20140408

PR - US201113080024 20110405

AP - US201113080024 20110405

DT - *; Rep

CT - || STSE (B2)
[US8237680](#) B2 20120807 [
] (JIANG KAI-LI [CN], et al)
[US2010001972](#) A1 20100107
 [] (JIANG KAI-LI [CN], et al)
[US2010108409](#) A1 20100506
 [] (TANAKA JUN [JP], et al)
[US2010149076](#) A1 20100617
 [] (YOO YOUNG-GIL [KR])
 - || R141 (A1)
[US2010001972](#) A1 [];
[US2010149076](#) A1 [];
[US2010108409](#) A1 [];
[US8237680](#) B2 []

CTNP - || STSE (B2)
 [] Applied Physics Letters
 88, 123109 (2006), Zhou et al.,
 Mar. 22, 2006
 - || R141 (A1)
 [] Applied Physics Letters
 88, 123109 (2006), Zhou et al.,
 March 22, 2006

CCI - [G06F3/0414](#) ; [H03K17/9643](#)

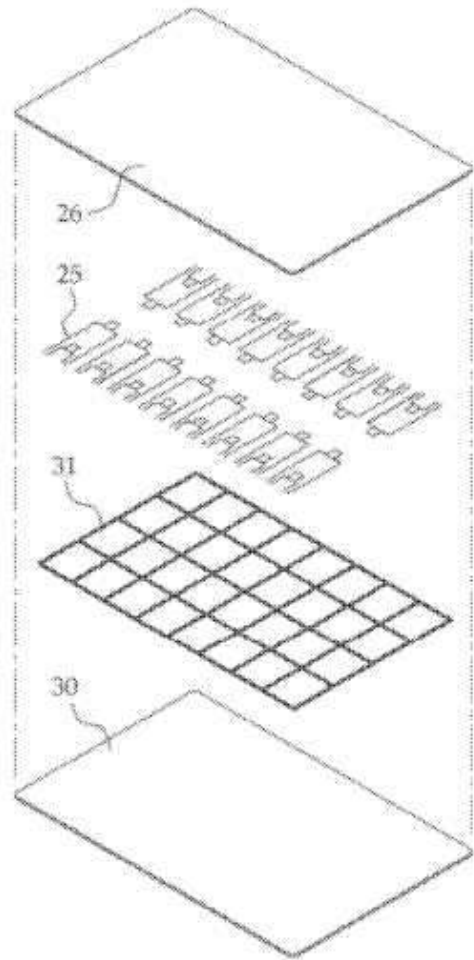
CUI - [H01C10/10](#) ; [H01C10/12](#) ;
[H01C17/00](#) ; [H01H65/00](#)

CCA - [G06F2203/04103](#) ;
[Y10T29/49002](#)

PA - (A1 B2)
 LEE KANG WON [KR]; LEE
 SEUNG SEOB [KR]; LEE JUNG A
 [KR]; LEE KWANG CHEOL [KR]

TI - (A1 B2)
 PIEZORESISTIVE TYPE TOUCH
 PANEL, MANUFACTURING
 METHOD THEREOF; AND
 DISPLAY DEVICE, TOUCH **PAD**,
PRESSURE SENSOR,
 TOUCH **SENSOR**, GAME
 CONSOLE AND KEYBOARD
 HAVING THE PANEL

AB - (A1 B2)
 The present invention relates
 to a touch panel, more
 specifically a piezoresistive
 type touch panel. According



to the present invention, it is provided a manufacturing method of a piezoresistive type touch panel, comprising manufacturing a **polymer** membrane in which a piezoresistive type **film** pattern, of which resistance varies with applied **pressure**, is embedded; manufacturing a spacer **layer** and attaching one side of the spacer **layer** to a surface of the **polymer** membrane; and then attaching a bottom substrate to the other side of the spacer **layer**.

12/18 © EPODOC / EPO

PN - [KR20110042924](#) A 20110427

PNFP - KR101094165B B1 20111214

PR - KR20090099798 20091020

AP - KR20090099798 20091020

DT - I

CNOI - (A)
[G06F3/0412](#) ; [G06F3/0414](#) ; [G06F3/045](#)

CNOA - (A)
[G06F2203/04103](#)

PA - (A)
KOREA ADVANCED INST SCI & TECH [KR]; KOREA RES INST OF STANDARDS [KR]

TI - (A B1)
PIEZORESISTIVE-TYPE TOUCH PANEL, MANUFACTURING METHOD THEREOF, DISPLAY DEVICE, TOUCH **PAD** AND **PRESSURESENSOR** HAVING IT

AB - (A)
PURPOSE: A **pressure sensor** for a piezoresistive-type touch panel and a method for manufacturing the same are provided to vary resistance value according to a **pressure** on the **pressure sensor**. CONSTITUTION: A piezoresistive **film** pattern senses the variation of a resistance value by the **pressure** variation. A **polymer film** (26) includes the piezoresistive **film** pattern. A spacer **layer**(31) is attached to a single-side of the **polymer layer**. A bottom substrate(30) is attached to a single-side of the spacer **layer**.

13/18 © EPODOC / EPO

PN - [US6216545](#) B1 20010417

PR - US19950557863 19951114

AP - US19950557863 19951114

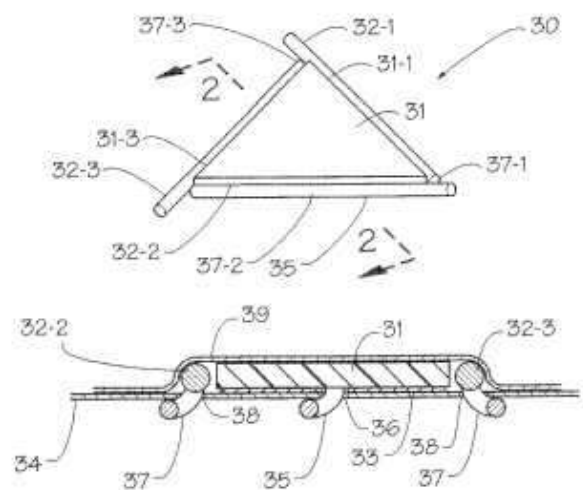
DT - **

CT - [US4745930](#) A []; [US5079949](#) A [];
[US5237879](#) A []; [US5323650](#) A [];
[US5408873](#) A []

- CCI - [A61B5/1036](#) ; [G01L1/205](#)
- CCA - [A61B2562/0247](#) ; [A61B2562/046](#)
- TI - Piezoresistive foot **pressure** measurement
- AB - A method and apparatus for measuring pressures exerted on human feet or horses' hooves comprises a rectangular array of piezoresistive force sensors encapsulated in a thin **polymer** package that is inserted into a shoe, or incorporated into a sock that may be pulled over a foot or hoof. The preferred embodiment employs novel piezoresistive normal force or **pressure** sensing elements which include a **polymer** fabric mesh impregnated with conductive particles suspended in an elastomeric vehicle, preferably silicone rubber. The piezoresistive mesh **layer** is sandwiched between an array of row and column conductor strip laminations, preferably made of a nylon mesh impregnated with printed metallic paths. In a variation of the basic embodiment, each normal force **sensor** element is bordered by laterally and longitudinally disposed pairs of shear force **sensor** elements, each of the latter comprising a pair of adjacent resilient piezoresistive **pads** that have longitudinally contacting lateral surfaces. The **pads** are slidably movable, and when urged into more or less intimate contact in response to shear forces directed normal to their tangent contact plane, the electrical resistance between the **pads** varies in a predetermined way as a function of the shear forces.

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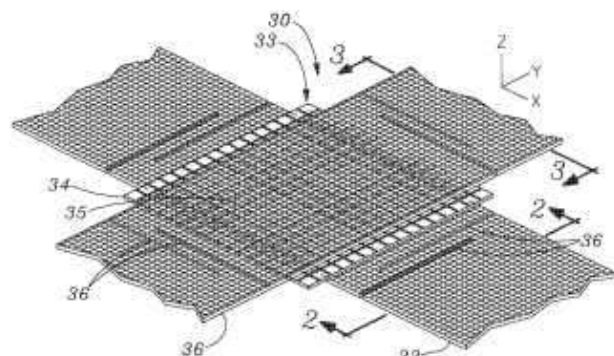
- PN - [US5571973](#) A 19961105
- PR - US19940254918 19940606
- AP - US19940254918 19940606
- DT - *
- CT - [US4644801](#) A []; [US4703663](#) A [];
[US4802371](#) A []; [US4827763](#) A [];
[US4934197](#) A []; [US5010774](#) A [];
[US5054323](#) A []; [US5060527](#) A [];
[US5083467](#) A []; [US5209126](#) A [];
[US5341687](#) A []



- CCI - [A61B5/6892](#) ; [A61B5/1036](#) ; [G01L1/205](#)
- CCA - [A61B5/4519](#) ; [Y10S73/04](#)
- TI - Multi-directional piezoresistive shear and normal force sensors for hospital **mattresses** and seat cushions
- AB - Thin, planar sensors for measuring forces exerted by **mattresses** or chair **pads** on a patient's body include a central conductive elastomeric **pad** movable in a

horizontal plane into more or less intimate contact with flexible peripheral conductors adjacent the central **pad**, thus varying electrical conductivity between the central **pad** and peripheral conductors by a surface piezoresistive effect proportional to the magnitude and direction of horizontal shear forces exerted on the **pad**. The preferred embodiment comprises a matrix area array of thin, square central conductive elastomeric **pads**, each surrounded by four square peripheral conductive elastomeric **pads** forming a close pack tiling arrangement that utilizes inner peripheral conductors in the array to function as one of the peripheral conductors for two or three nearest-neighbor sensors. In one embodiment of the invention, a **sensor** having a thin, flat **layer** formed of a non-conductive elastomeric **polymer** matrix filled with electrically conductive particles is sensitive to **pressure** or normal forces exerted on the **sensor**, such forces reducing the volume of the **layer** and therefore its electrical resistance, by a bulk on volume piezoresistive effect.

- 15/18** © EPODOC / EPO
- PN - [US6155120](#) A 20001205
- PR - WO1996IB01467
19961114; US19950557863
19951114
- AP - US19980068797 19980513
- DT - **
- CT - [US4739211](#) A []; [US4754930](#)
A [];
[US5079949](#) A []; [US5503029](#)



A [];
[US5515738](#) A []; [US5571973](#)
A []

CCI - [A61B5/1036](#) ; [G01L1/205](#)

CCA - [A61B2562/0247](#) ;
[A61B2562/046](#)

TI - Piezoresistive foot **pressure**
measurement method and
apparatus

AB - PCT No. PCT/IB96/01467 Sec.
371 Date May 13, 1998 Sec.
102(e) Date May 13, 1998 PCT
Filed Nov. 14, 1996 PCT Pub.
No. WO97/18450 PCT Pub.
Date May 22, 1997A method
and apparatus (68, 40) for
measuring pressures exerted
on 6 human feet or horses'
hooves comprises a
rectangular array of
piezoresistive force sensors
encapsulated in a
thin **polymer** package (40)
that is inserted into a shoe, or
incorporated into a sock that
may be pulled over a foot or
hoof. The preferred
embodiment employs novel
piezoresistive normal force
or **pressure** sensing elements
(36) which include a **polymer**
fabric mesh impregnated with
conductive particles
suspended in an elastomeric
vehicle, preferably silicone
rubber. The piezoresistive
mesh **layer** (33) is
sandwiched between an array
of row (34) and column (31)
conductor strip laminations,
preferably made of a nylon
mesh impregnated with
printed metallic paths. In a
variation (100) of the basic
embodiment, each normal
force **sensor** element (30) is
bordered by laterally and
longitudinally disposed pairs
(80) of shear force **sensor**
elements, each of the latter
comprising a pair of adjacent
resilient piezoresistive **pads**

(83) that have longitudinally contacting lateral surfaces. The **pads** are slidably movable, and when urged into more or less intimate contact in response to shear forces directed normal to their tangent contact plane, the electrical resistance between the **pads** varies in a predetermined way as a function of the shear forces.

16/18 © EPODOC / EPO

- PN - [KR100685884B](#) B1 20070215
- PR - KR20050102215 20051028
- AP - KR20050102215 20051028
- DT - I
- CT - || STSE (B1)
[KR20020026797](#) A 20020412 [] (SEMICONDUCTOR LEADING EDGE TEC)
- PA - DONGBU ELECTRONICS CO LTD [KR]
- TI - POLISHING **PAD** IN CHEMICAL MECHANICAL POLISHING AND METHOD FOR MANUFACTURING THE SAME
- AB - A polishing **pad** of CMP equipment and a manufacturing method thereof are provided to monitor **pressure** distribution of wafer using **polymer** sensors. **Polymer** sensors (120) are arranged on a rear of a **polymer film**(111) at regular intervals. The **polymer sensor** consists of a piezoelectric device of polyurethane which is freely bent without being damaged. Therefore, the **polymer sensor** is freely attached to an any region. When a voltage is applied from the external, the **polymer sensor** generates displacement at a polishing **pad**. When displacement is generated at the **polymer sensor**, a voltage is generated at the polishing **pad**.

17/18 © EPODOC / EPO

- PN - [KR20000059546](#) A 20001005
- PNFP - KR100287342B B1 20010416
- PR - KR19990007219 19990305
- AP - KR19990007219 19990305
- DT - I
- PA - (A)
LIM JUNG OK [KR]; BAEK YOON LEE [KR]; HUH JEUNG SOO [KR]
- TI - (A)
METHOD FOR PRODUCING HEAT GENERATING CLOTH FOR MAINTAINING PATIENT BODY TEMPERATURE BY EMPLOYING ELECTRICITY CONDUCTIVE **POLYMER**
- (B1)
Manufacturing for heating **pad** for maintaining patient's body temperature by electrically conducting **polymers**
- AB - (A)
PURPOSE: A method for coating conductive high **polymer** on cloth is provided, which provides a heat generating fabric employing the performance of heat generation of

the **polymer** for a patient to keep body temperature steady. CONSTITUTION: The method comprises the processes of: chemical **polymerization** which places a piece of cloth(1) of synthetic fiber including nylon and polyester in a tank to steep and treat it in a liquid mixture of a dopant, a distilled high **polymer** monomer and an oxidant under a high temperature and a high **pressure** to form an electricity conductive **polymer film** on it(1); electrical **polymerization** which washes the piece of cloth(1) from the prior process to remove weakly attached powders off the cloth for using it as an electrode to form a conductive **polymer film** for 2nd surface **polymerization**; patterning of a design on the cloth and attachment of a heat **sensor** and a power supply to the cloth(1).

18/18 © EPODOC / EPO

- PN - [WO9718450](#) A1 19970522
- PR - US19950557863 19951114
- AP - WO1996IB01467 19961114
- DT - *; Rep
- CT - |EP| ISR (A1)
[WO8701574](#) A1 19870326 [XY] (ISTITUTO SUPERIORE SANITA [IT])
[X] 1
* figure 1; claim 1 *
[Y] 2-6,8;
[WO9210823](#) A1 19920625 [Y] (ASHER DAVID J [US])
[Y] 2
* page 16, line 24 - line 31; figure 10 *;
[XP002028478](#) A[Y];
[US5033291](#) A 19910723 [A] (PODOLOFF ROBERT M [US], et al)
[A] 20,22
* the whole document *;
[EP0331769](#) A1 19890913 [A] (BRUNNER WOLFGANG [DE], et al)
[A] 11
* abstract *
- CTNP - |EP| ISR (A1)
[Y] - ROBERTSON ET AL., "tactile sensor system for robotics", MEASUREMENT + CONTROL, LONDON , GB, (198509), vol. 18, no. 7, pages 262 - 265, XP002028478
[Y] 3-6,8
* the whole document *
- CCI - [A61B5/1036](#) ; [G01L1/205](#)
- CCA - [A61B2562/0247](#) ; [A61B2562/046](#)
- PA - TAYLOR GEOFFREY L [CA]
- TI - PIEZORESISTIVE FOOT **PRESSURE** MEASUREMENT METHOD AND APPARATUS
- AB - A method and apparatus (68, 40) for measuring pressures exerted on human feet or horses' hooves comprises a rectangular array of piezoresistive force sensors encapsulated in a thin **polymer** package (40) that is inserted into a shoe, or incorporated into a sock that may be pulled over a foot or hoof. The preferred embodiment employs novel piezoresistive normal force or **pressure** sensing elements (36) which include a **polymer** fabric mesh impregnated with conductive particles suspended in an elastomeric vehicle, preferably silicone rubber. The piezoresistive mesh **layer** (33) is sandwiched between an array of row (34) and column (31) conductor strip laminations, preferably made of a nylon mesh impregnated with printed metallic paths. In a variation (100) of the basic embodiment, each normal force **sensor** element (30) is bordered by laterally and

longitudinally disposed pairs (80) of shear force **sensor** elements, each of the latter comprising a pair of adjacent resilient piezoresistive **pads** (83) that have longitudinally contacting lateral surfaces. The **pads** are slidably movable, and when urged into more or less intimate contact in response to shear forces directed normal to their tangent contact plane, the electrical resistance between the **pads** varies in a predetermined way as a function of the shear forces.

[SS 6]