AO 120 (Rev. 08/10)

| TO: | REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK |
|---|---|
| Mail Stop 8<br>Director of the U.S. Patent and Trademark Office<br>P.O. Box 1450<br>Alexandria, VA 22313-1450 | |

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. ( ☐ the patent action involves 35 U.S.C. § 292.):

| DOCKET NO. | DATE FILED | U.S. DISTRICT COURT |
|---|---|---|
| 2:22-CV-08396 | 11/17/2022 | Central District of California |

| PLAINTIFF | DEFENDANT |
|---|---|
| PURPLE INNOVATION, LLC | DIAMOND MATTRESS COMPANY, INC. |

| | PATENT OR TRADEMARK NO. | DATE OF PATENT OR TRADEMARK | HOLDER OF PATENT OR TRADEMARK |
|---|---|---|---|
| 1 | 11,317,733 | 5/3/2022 | Purple Innovation, LLC |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

| DATE INCLUDED | INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading | |
|---|---|---|
| PATENT OR TRADEMARK NO. | DATE OF PATENT OR TRADEMARK | HOLDER OF PATENT OR TRADEMARK |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

In the above—entitled case, the following decision has been rendered or judgement issued:

| DECISION/JUDGEMENT |
|---|
| |

| CLERK | (BY) DEPUTY CLERK | DATE |
|---|---|---|
| | | |

**Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director**
**Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy**

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT8099007

| | |
|---|---|
| **SUBMISSION TYPE:** | NEW ASSIGNMENT |
| **NATURE OF CONVEYANCE:** | SECURITY INTEREST |

**CONVEYING PARTY DATA**

| Name | Execution Date |
|---|---|
| PURPLE INNOVATION, LLC | 08/07/2023 |
| PURPLE INNOVATION, INC. | 08/07/2023 |
| INTELLIBED, LLC | 08/07/2023 |

**RECEIVING PARTY DATA**

| | |
|---|---|
| **Name:** | CALLODINE COMMERCIAL FINANCE, LLC, AS ADMINISTRATIVE AGENT |
| **Street Address:** | 545 BOYLSTON STREET, 10TH FLOOR |
| **City:** | BOSTON |
| **State/Country:** | MASSACHUSETTS |
| **Postal Code:** | 02116 |

**PROPERTY NUMBERS Total: 167**

| Property Type | Number |
|---|---|
| **Patent Number:** | 6767621 |
| **Patent Number:** | 6843873 |
| **Patent Number:** | 6871365 |
| **Patent Number:** | 9051169 |
| **Patent Number:** | 7964664 |
| **Patent Number:** | 7666341 |
| **Patent Number:** | 8424137 |
| **Patent Number:** | 8434748 |
| **Patent Number:** | 8075981 |
| **Patent Number:** | 8932692 |
| **Patent Number:** | 8628067 |
| **Patent Number:** | 9315648 |
| **Patent Number:** | 9603461 |
| **Patent Number:** | 8784982 |
| **Patent Number:** | 8919750 |
| **Patent Number:** | 9446542 |
| **Patent Number:** | 9796522 |
| **Patent Number:** | 10807811 |

| Property Type | Number |
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| **Patent Number:** | 11589693 |
| **Patent Number:** | 10555618 |
| **Patent Number:** | 10772445 |
| **Patent Number:** | 10202234 |
| **Patent Number:** | 11089878 |
| **Patent Number:** | 10881217 |
| **Patent Number:** | 10661492 |
| **Patent Number:** | 11229298 |
| **Patent Number:** | 11317733 |
| **Patent Number:** | 7730566 |
| **Patent Number:** | 8607387 |
| **Patent Number:** | 10863837 |
| **Patent Number:** | 11008158 |
| **Patent Number:** | 7827636 |
| **Patent Number:** | 11179873 |
| **Patent Number:** | 11602227 |
| **Patent Number:** | 11174110 |
| **Patent Number:** | 10836563 |
| **Patent Number:** | 7823234 |
| **Patent Number:** | 7823233 |
| **Patent Number:** | 11547218 |
| **Patent Number:** | 8549684 |
| **Patent Number:** | 11213139 |
| **Patent Number:** | 11311111 |
| **Patent Number:** | D902627 |
| **Patent Number:** | D799858 |
| **Patent Number:** | D784731 |
| **Patent Number:** | D831478 |
| **Patent Number:** | D917206 |
| **Patent Number:** | D917927 |
| **Patent Number:** | D928535 |
| **Patent Number:** | D929773 |
| **Patent Number:** | D959176 |
| **Patent Number:** | D951670 |
| **Patent Number:** | D983265 |
| **Patent Number:** | D917926 |
| **Patent Number:** | D909092 |
| **Patent Number:** | D909790 |

| Property Type | Number |
|---|---|
| **Patent Number:** | D990930 |
| **Patent Number:** | D864613 |
| **Application Number:** | 15062674 |
| **Application Number:** | 15335332 |
| **Application Number:** | 29779628 |
| **Application Number:** | 29779644 |
| **Application Number:** | 15062621 |
| **Application Number:** | 17123007 |
| **Application Number:** | 17568478 |
| **Application Number:** | 17729965 |
| **Application Number:** | 17170558 |
| **Application Number:** | 17348513 |
| **Application Number:** | 17682649 |
| **Application Number:** | 29779620 |
| **Application Number:** | 29779624 |
| **Application Number:** | 29779635 |
| **Application Number:** | 62716888 |
| **Application Number:** | 62130364 |
| **Application Number:** | 62397818 |
| **Application Number:** | 62435343 |
| **Application Number:** | 62588211 |
| **Application Number:** | 62861119 |
| **Application Number:** | 62861138 |
| **Application Number:** | 62971016 |
| **Application Number:** | 62976173 |
| **Application Number:** | 63005911 |
| **Application Number:** | 63039281 |
| **Application Number:** | 63089282 |
| **Application Number:** | 63106711 |
| **Application Number:** | 63110936 |
| **Application Number:** | 63154423 |
| **Application Number:** | 63164358 |
| **Application Number:** | 63158753 |
| **Application Number:** | 29782165 |
| **Application Number:** | 15058637 |
| **Application Number:** | 17978119 |
| **Application Number:** | 17978141 |
| **Application Number:** | 17978167 |

| Property Type | Number |
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| **Application Number:** | 17978173 |
| **Application Number:** | 17978186 |
| **Application Number:** | 17978198 |
| **Application Number:** | 18100818 |
| **Application Number:** | 18102671 |
| **Application Number:** | 17021962 |
| **Application Number:** | 18104699 |
| **Application Number:** | 16901783 |
| **Application Number:** | 17963845 |
| **Application Number:** | 18097815 |
| **Application Number:** | 29763711 |
| **Application Number:** | 29779639 |
| **Application Number:** | 29882963 |
| **Application Number:** | 29883287 |
| **Application Number:** | 29883292 |
| **Application Number:** | 29883295 |
| **Application Number:** | 29842403 |
| **Application Number:** | 63246201 |
| **Application Number:** | 63253947 |
| **Application Number:** | 63299671 |
| **Application Number:** | 63391995 |
| **Application Number:** | 63440591 |
| **Application Number:** | 63440815 |
| **Application Number:** | 63441571 |
| **Application Number:** | 63441581 |
| **Application Number:** | 63441789 |
| **Application Number:** | 63444514 |
| **Application Number:** | 63444517 |
| **Application Number:** | 15062847 |
| **Application Number:** | 15063143 |
| **Application Number:** | 15700786 |
| **Application Number:** | 15654948 |
| **Application Number:** | 16193807 |
| **Application Number:** | 15861278 |
| **Application Number:** | 17479868 |
| **Application Number:** | 17110137 |
| **Application Number:** | 17105208 |
| **Application Number:** | 17584183 |

| Property Type | Number |
|---|---|
| **Application Number:** | 17735795 |
| **Application Number:** | 18096517 |
| **Application Number:** | 18121549 |
| **Application Number:** | 15611567 |
| **Application Number:** | 17497683 |
| **Application Number:** | 17521604 |
| **Application Number:** | 17691009 |
| **Application Number:** | 17701446 |
| **PCT Number:** | US2017020721 |
| **PCT Number:** | US2017020726 |
| **PCT Number:** | US2017020741 |
| **PCT Number:** | US2017020781 |
| **PCT Number:** | US2017020788 |
| **PCT Number:** | US2017057127 |
| **PCT Number:** | US2017052462 |
| **PCT Number:** | US2017052421 |
| **PCT Number:** | US2017057215 |
| **PCT Number:** | US2017057210 |
| **PCT Number:** | US2017065144 |
| **PCT Number:** | US2018041455 |
| **PCT Number:** | US2018042331 |
| **PCT Number:** | US2018060701 |
| **PCT Number:** | US2018061584 |
| **PCT Number:** | US2018060680 |
| **PCT Number:** | US2017020789 |
| **PCT Number:** | US2020037777 |
| **PCT Number:** | US2021017112 |
| **PCT Number:** | US2021018173 |
| **PCT Number:** | US2021026033 |
| **PCT Number:** | US2021037492 |
| **PCT Number:** | US2021058461 |
| **PCT Number:** | US2022018173 |
| **PCT Number:** | US2022019635 |
| **PCT Number:** | US2022046312 |
| **PCT Number:** | US2022021400 |

**CORRESPONDENCE DATA**

**Fax Number:** (617)341-7701

***Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***


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**Email:** michelle.bramwell@morganlewis.com
**Correspondent Name:** MICHELLE BRAMWELL
**Address Line 1:** ONE FEDERAL STREET
**Address Line 2:** C/O MORGAN, LEWIS & BOCKIUS LLP
**Address Line 4:** BOSTON, MASSACHUSETTS 02110


| | |
|---|---|
| **ATTORNEY DOCKET NUMBER:** | 118373-01-0046 |
| **NAME OF SUBMITTER:** | MICHELLE BRAMWELL |
| **SIGNATURE:** | /Michelle Bramwell/ |
| **DATE SIGNED:** | 08/07/2023 |
| | This document serves as an Oath/Declaration (37 CFR 1.63). |

**Total Attachments: 36**
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## GRANT OF A SECURITY INTEREST -- PATENTS

This Patent Security Agreement (this "**Patent Security Agreement**") is made as of August 7, 2023, by the Grantors listed on the signature pages hereof (collectively, "**Grantor**"), in favor of CALLODINE COMMERCIAL FINANCE, LLC, in its capacity as administrative agent for itself and the other Secured Parties (together with its successors and assigns in such capacity, "**Grantee**").

**WHEREAS**, the Grantor holds all right, title and interest in the letter patents, design patents and utility patents listed on the attached Schedule A, which patents are issued or applied for in the United States Patent and Trademark Office (the "**Patents**");

**WHEREAS**, the Grantor, among others, has entered into a Pledge and Security Agreement, dated August 7, 2023 (as amended, restated, supplemented, modified or otherwise changed from time to time, the "**Security Agreement**"), in favor of Grantee; and

**WHEREAS**, pursuant to the Security Agreement, the Grantor has granted to the Grantee for the benefit of the Secured Parties (as defined in the Security Agreement), a continuing security interest in all right, title and interest of the Grantor in, to and under the Patents and the applications and registrations thereof, and all proceeds thereof, including, without limitation, any and all causes of action which may exist by reason of infringement thereof and any and all damages arising from past, present and future violations thereof (the "**Collateral**"), to secure the payment, performance and observance of the Secured Obligations (as defined in the Security Agreement).

**NOW, THEREFORE**, as collateral security for the payment, performance and observance of all of the Secured Obligations, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantor does hereby grant to the Grantee and grant to the Grantee for the benefit of the Secured Parties, a continuing security interest in the Collateral to secure the prompt payment, performance and observance of the Secured Obligations. Notwithstanding anything herein to the contrary, the term "Collateral" shall not include, and no Grantor is pledging, nor granting a security interest hereunder in, any Excluded Assets; provided, however, that if and when any asset shall cease to be an Excluded Asset, a Lien on and security interest in such property shall immediately be deemed granted hereunder.

All capitalized terms used but not otherwise defined herein have the meanings given to them in the Security Agreement.

The Grantor does hereby further acknowledge and affirm that the rights and remedies of the Grantee with respect to the Collateral are more fully set forth in the Security Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein.

This Patent Security Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

This Patent Security Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed shall be deemed to be

an original and all of which taken together shall constitute one and the same agreement. Delivery of an executed counterpart by facsimile or electronic mail shall be equally effective as delivery of an original executed counterpart.

*[Remainder of page intentionally left blank]*

**IN WITNESS WHEREOF**, the Grantors have caused this Patent Security Agreement to be duly executed by its officer thereunto duly authorized as of the date first set forth above.

**GRANTORS:**

**PURPLE INNOVATION, LLC**, a Delaware limited liability company

By:_____
Name: Bennett Nussbaum
Title: Chief Financial Officer and Treasurer

**PURPLE INNOVATION, INC.**, a Delaware corporation

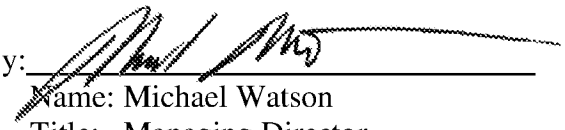
By:_____
Name: Bennett Nussbaum
Title: Chief Financial Officer and Treasurer

**INTELLIBED, LLC**, a Delaware limited liability company

By:_____
Name: Casey K. McGarvey
Title: President, Treasurer and Secretary

Acknowledged and Accepted:

CALLODINE COMMERCIAL FINANCE, LLC,
as the Administrative Agent

By: 
Name: Michael Watson
Title: Managing Director

SCHEDULE A TO GRANT OF A SECURITY INTEREST

Patents and Patent Applications

[Attached.]

| TITLE | COUNTRY | STATUS | APPLICATION # | DATE FILED | PATENT # |
|---|---|---|---|---|---|
| Gelatinous Composite Article And Construction | United States of America | Expired | 10/214,252 | 8/7/02 | 6767621 |
| Method Of Making A Gelatinous Composite | United States of America | Expired | 10/170,768 | 6/12/02 | 6843873 |
| Supported Hypo/Hyperthermia Pad | United States of America | Expired | 10/438,058 | 5/14/03 | 6871365 |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Japan | Abandoned | 2018-545846 | Mar 3, 2017 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | United States of America | Abandoned | 15/062,674 | Mar 7, 2016 | |
| TALL AND STURDY METAL MATTRESS PLATFORMS | United States of America | Abandoned | 15/335,332 | Oct 26, 2016 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Australia | Abandoned | 2017228982 | Mar 3, 2017 | |
| TALL AND STURDY METAL MATTRESS PLATFORMS | European Patent Office | Abandoned | 17865811.8 | Oct 18, 2017 | |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | Japan | Abandoned | 2018-545841 | Mar 3, 2017 | |
| MATTRESS COVER WITH WAVE PATTERN | United States of America | Abandoned | 29/779,628 | Apr 20, 2021 | |
| MATTRESS COVER WITH WAVE PATTERN | United States of America | Abandoned | 29/779,644 | Apr 20, 2021 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING | United States of America | Allowed | 15/062,621 | Mar 7, 2016 | |

| | | | | | |
|---|---|---|---|---|---|
| KNITTED FABRIC, AND RELATED METHODS | | | | | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION MATERIALS | United States of America | Allowed | 17/123,007 | Dec 15, 2020 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | United States of America | Allowed | 17/568,478 | Jan 4, 2022 | |
| AIR DISTRIBUTION FOR MATTRESSES | United States of America | Allowed | 17/729,965 | Apr 26, 2022 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Japan | Allowed | 2019-167768 | Sep 20, 2017 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Republic of Korea | Allowed | 10-2022-7036758 | Sep 20, 2017 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Republic of Korea | Allowed | 10-2022-7036762 | Sep 20, 2017 | |
| Printed Elastomeric Elements | United States of America | Allowed | 17/170,558 | Feb 8, 2021 | |
| REMOTELY CONTROLLING BEDS | United States of America | Allowed | 17/348,513 | Jun 15, 2021 | |
| CUSHIONING ELEMENTS WITH PRESSURIZABLE CELLS | United States of America | Allowed | 17/682,649 | Feb 28, 2022 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING | Japan | Allowed | 2019-545329 | Jul 10, 2018 | |

| | | | | | |
|---|---|---|---|---|---|
| ELEMENT AND RELATED METHODS | | | | | |
| MATTRESS COVER WITH WAVE PATTERN | United States of America | Allowed | 29/779,620 | Apr 20, 2021 | |
| MATTRESS COVER WITH WAVE PATTERN | United States of America | Allowed | 29/779,624 | Apr 20, 2021 | |
| MATTRESS COVER WITH WAVE PATTERN | United States of America | Allowed | 29/779,635 | Apr 20, 2021 | |
| CYLINDRICAL CUSHION | Republic of Korea | Allowed | 30-2021-0049532 | Oct 20, 2021 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | PCT | Expired | US2017/020721 | Mar 3, 2017 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | PCT | Expired | 2017/020726 | Mar 3, 2017 | |
| ELASTOMERIC CUSHION MEMBERS INCLUDING PERFORATED SKINS AND RELATED METHODS | PCT | Expired | 2017/020741 | Mar 3, 2017 | |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | PCT | Expired | PCT/US2017/020781 | Mar 3, 2017 | |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | PCT | Expired | 2017/020788 | Mar 3, 2017 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | PCT | Expired | 2017/057127 | Oct 18, 2017 | |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS | PCT | Expired | 2017/052462 | Sep 20, 2017 | |

| | | | | | |
|---|---|---|---|---|---|
| PROTECTORS, AND RELATED METHODS | | | | | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | PCT | Expired | 2017/052421 | Sep 20, 2017 | |
| TALL AND STURDY METAL MATTRESS PLATFORMS | PCT | Expired | 2017/057215 | Oct 18, 2017 | |
| BED LINEN PACKAGING | PCT | Expired | 2017/057210 | Oct 18, 2017 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | PCT | Expired | PCT/US2017/065144 | Dec 7, 2017 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | PCT | Expired | 2018/041455 | Jul 10, 2018 | |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | PCT | Expired | 2018/042331 | Jul 16, 2018 | |
| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | PCT | Expired | 2018/060701 | Nov 13, 2018 | |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | PCT | Expired | PCT/US2018/061584 | Nov 16, 2018 | |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | PCT | Expired | PCT/US2018/060680 | Nov 13, 2018 | |
| MATTRESS TOPPERS, AIR TABLES FOR | PCT | Expired | 2017/020789 | Mar 3, 2017 | |

| | | | | | |
|---|---|---|---|---|---|
| MAKING MATTRESS TOPPERS, AND RELATED METHODS | | | | | |
| Pillows and Covers | PCT | Expired | PCT/US2020/037777 | Jun 15, 2020 | |
| BLANKET WITH ELASTOMERIC WEIGHTING ELEMENTS | PCT | Expired | PCT/US2021/017112 | Feb 8, 2021 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | PCT | Expired | PCT/US2021/018173 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | PCT | Expired | PCT/US2021/026033 | Apr 6, 2021 | |
| REMOTELY CONTROLLING BEDS | PCT | Expired | PCT/US2021/037492 | Jun 15, 2021 | |
| PILLOW COVERS AND PILLOWS | United States of America | Expired | 62/716,888 | Aug 9, 2018 | |
| GRIPPY INTEGRALLY MOLDED MATS | United States of America | Expired | 62/130,364 | Mar 9, 2015 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | United States of America | Expired | 62/397,818 | Sep 21, 2016 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | United States of America | Expired | 62/435,343 | Dec 16, 2016 | |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | United States of America | Expired | 62/588,211 | Nov 17, 2017 | |
| Fabric Elongation Resistance Evaluation Equipment | United States of America | Expired | 62/861,119 | Jun 13, 2019 | |
| Pillows and Covers | United States of America | Expired | 62/861,138 | Jun 13, 2019 | |
| BLANKET WITH ELASTOMERIC WEIGHTING ELEMENTS | United States of America | Expired | 62/971,016 | Feb 6, 2020 | |

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|---|---|---|---|---|---|
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | United States of America | Expired | 62/976,173 | Feb 13, 2020 | |
| VENTILATED COMPOSITE MATTRESSES | United States of America | Expired | 63/005,911 | Apr 6, 2020 | |
| REMOTELY CONTROLLING BEDS | United States of America | Expired | 63/039,281 | Jun 15, 2020 | |
| MATTRESS FOOT COVER | United States of America | Expired | 63/089,282 | Oct 8, 2020 | |
| REDUCED TACK ELASTOMERIC GEL MATERIALS AND CUSHIONING ELEMENTS AND OTHER ARTICLES OF MANUFACTURE FORMED THEREFROM | United States of America | Expired | 63/106,711 | Oct 28, 2020 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | United States of America | Expired | 63/110,936 | Nov 6, 2020 | |
| CUSHIONING ELEMENTS WITH PRESSURIZABLE CELLS | United States of America | Expired | 63/154,423 | Feb 26, 2021 | |
| MATTRESS ASSEMBLIES | United States of America | Expired | 63/164,358 | Mar 22, 2021 | |
| ADJUSTABLE MATTRESS SIDE RAILS | United States of America | Expired | 63/158,753 | Mar 9, 2021 | |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | Australia | Issued | 2017228991 | Mar 3, 2017 | 2017228991 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Australia | Issued | 2018226458 | Sep 6, 2018 | 2018226458 |
| MATTRESS TOPPERS, AIR TABLES FOR MAKING MATTRESS TOPPERS, AND RELATED METHODS | China | Issued | 2017800159429 | Mar 7, 2017 | ZL2017800159429 |

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| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | China | Issued | 2018108116841 | Jul 23, 2018 | ZL 2018108116841 |
| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | China | Issued | 2018107858257 | Jul 17, 2018 | ZL 2018107858257 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | China | Issued | 2018107865369 | Jul 17, 2018 | ZL 2018107865369 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | European Patent Office | Issued | 18193646.9 | Sep 11, 2018 | 3453272 |
| PACKAGING FOR BED LINEN | Japan | Issued | 12530/2017 | Jun 12, 2017 | 1594708 |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Taiwan | Issued | 106107364 | Mar 7, 2017 | I724122 |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | Taiwan | Issued | 106144221 | Dec 15, 2017 | I704892 |
| TALL AND STURDY METAL MATTRESS PLATFORMS | Taiwan | Issued | 106136734 | Oct 25, 2017 | I653014 |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Taiwan | Issued | 106132218 | Sep 20, 2017 | I644641 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | Taiwan | Issued | 107126144 | Jul 27, 2018 | I674861 |

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| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Taiwan | Issued | 107125120 | Jul 20, 2018 | I673028 |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | Taiwan | Issued | 106132217 | Sep 20, 2017 | I720252 |
| BED LINEN PACKAGING | Taiwan | Issued | 106136732 | Oct 25, 2017 | I642391 |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | Taiwan | Issued | 106107013 | Mar 3, 2017 | I719155 |
| MATTRESS TOPPERS, AIR TABLES FOR MAKING MATTRESS TOPPERS, AND RELATED METHODS | Taiwan | Issued | 106107014 | Mar 3, 2017 | I731939 |
| Cushions including a coated elastomeric cushioning element and related methods | Taiwan | Issued | 106107365 | Mar 7, 2017 | I712383 |
| ELASTOMERIC CUSHION MEMBERS INCLUDING PERFORATED SKINS AND RELATED METHODS | Taiwan | Issued | 106107011 | Mar 7, 2016 | I742050 |
| Beds Linens, and Related Bedding Assemblies and Methods | Taiwan | Issued | 106136182 | Oct 20, 2017 | I770073 |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | Taiwan | Issued | 106107012 | Mar 3, 2017 | I739809 |
| PORTABLE CUSHIONS INCLUDING DEFORMABLE WALL MEMBERS, AND RELATED METHODS | United States of America | Issued | 14/213,229 | Mar 14, 2014 | 9051169 |

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| GEL WITH WIDE DISTRIBUTION OF MW IN MID-BLOCK | United States of America | Issued | 11/345,622 | Feb 1, 2006 | 7964664 |
| Screed Mold Method | United States of America | Issued | 10/775,043 | Feb 7, 2004 | 7666341B2 |
| (X-Gel) Ribbed Gel | United States of America | Issued | 12/287,057 | Oct 3, 2008 | 8424137 |
| Cushions Comprising Gel Springs (as amended) | United States of America | Issued | 12/287,047 | Oct 3, 2008 | 8434748 |
| Alternating Pattern Gel Cushioning elements and Related Methods | United States of America | Issued | 12/229,724 | Aug 25, 2008 | 8075981 |
| CUSHIONS COMPRISING DEFORMABLE MEMBERS AND RELATED METHODS | United States of America | Issued | 12/784,247 | May 20, 2010 | 8932692 |
| CUSHIONS COMPRISING CORE STRUCTURES AND RELATED METHODS | United States of America | Issued | 12/784,346 | May 20, 2010 | 8628067 |
| GEL PUTTIES, ARTICLES COMPRISING SAME, AND METHODS OF FORMING SUCH GEL PUTTIES AND ARTICLES | United States of America | Issued | 13/098,182 | Apr 29, 2011 | 9315648 |
| BREATHABLE GEL | United States of America | Issued | 13/420,999 | Mar 15, 2012 | 9603461 |
| CUSHIONING ELEMENTS COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | United States of America | Issued | 13/454,874 | Apr 24, 2012 | 8784982 |
| CUSHIONING ELEMENTS COMPRISING BUCKLING WALLS AND METHODS OF FORMING SUCH CUSHIONING ELEMENTS | United States of America | Issued | 13/566,763 | Aug 3, 2012 | 8919750 |
| SMALL FOOTPRINT APPARATUS, METHOD, AND TOOLING FOR MOLDING LARGE | United States of America | Issued | 14/144,362 | Dec 30, 2013 | 9446542 |

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| THERMOPLASTIC PARTS | | | | | |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | United States of America | Issued | 15/063,114 | Mar 7, 2016 | 9796522 |
| MATTRESS TOPPERS, AIR TABLES FOR MAKING MATTRESS TOPPERS, AND RELATED METHODS | United States of America | Issued | 15/063,192 | Mar 7, 2016 | 10807811 |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | United States of America | Issued | 15/298,759 | Oct 20, 2016 | 11589693 |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | United States of America | Issued | 15/272,162 | Sep 21, 2016 | 10555618 |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | United States of America | Issued | 15/333,486 | Oct 25, 2016 | 10772445 |
| BED LINEN PACKAGING | United States of America | Issued | 15/334,093 | Oct 25, 2016 | 10202234 |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | United States of America | Issued | 15/835,052 | Dec 7, 2017 | 11089878 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | United States of America | Issued | 15/662,934 | Jul 28, 2017 | 10881217 |
| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | United States of America | Issued | 15/816,895 | Nov 17, 2017 | 10661492 |
| CUSHIONS INCLUDING ONE OR MORE REINFORCED PORTIONS AND RELATED METHODS | United States of America | Issued | 15/817,039 | Nov 17, 2017 | 11229298 |

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| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | United States of America | Issued | 15/816,983 | Nov 17, 2017 | 11317733 |
| MULTI-WALLED GELASTIC MATERIAL | United States of America | Issued | 11/602,099 | Nov 20, 2006 | 7730566 |
| MULTI-WALLED GELASTIC MATERIAL | United States of America | Issued | 12/859,351 | Aug 19, 2010 | 8607387 |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION MATERIALS | United States of America | Issued | 15/936,175 | Mar 26, 2018 | 10863837 |
| BAG FOR ENCLOSING A CUSHION | United States of America | Issued | 15/968,570 | May 1, 2018 | 11008158 |
| MULTI-WALLED GELASTIC MATERIAL | United States of America | Issued | 12/767,181 | Apr 26, 2010 | 7827636 |
| Mold Extractor | United States of America | Issued | 16/883,732 | May 26, 2020 | 11179873 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | United States of America | Issued | 17/142,147 | Jan 5, 2021 | 11602227 |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Australia | Issued | 2020200278 | Mar 3, 2017 | 2020200278 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Australia | Issued | 2020202869 | Sep 6, 2018 | 2020202869 |
| MATTRESS TOPPERS, AIR TABLES FOR MAKING MATTRESS TOPPERS, AND RELATED METHODS | China | Issued | 2021102108222 | Feb 25, 2021 | ZL 2021102108222 |
| MATTRESSES INCLUDING SPACER | Taiwan | Issued | 108126616 | Jul 27, 2018 | I774973 |

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| FABRIC AND RELATED METHODS | | | | | |
| AIR TABLES FOR MAKING MATTRESS TOPPERS AND RELATED METHODS | United States of America | Issued | 15/880,163 | Jan 25, 2018 | 11174110 |
| Method of Packaging Bed Linens | United States of America | Issued | 15/902,737 | Feb 22, 2018 | 10836563 |
| MULTI-WALLED GELASTIC MATERIAL | United States of America | Issued | 12/767,263 | Apr 26, 2010 | 7823234 |
| MULTI-WALLED GELASTIC MATERIAL | United States of America | Issued | 12/767,215 | Apr 26, 2010 | 7823233 |
| Methods for packaging cushions with elastomeric cushioning elements | United States of America | Issued | 16/872,223 | May 11, 2020 | 11547218 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Germany | Issued | 18193646.9 | Sep 11, 2018 | 3453272 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | France | Issued | 18193646.9 | Sep 11, 2018 | 3453272 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | United Kingdom | Issued | 18193646.9 | Sep 11, 2018 | 3453272 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Italy | Issued | 18193646.9 | Sep 11, 2018 | 3453272 |
| GELASTIC MATERIAL HAVING VARIABLE OR SAME HARDNESS AND BALANCED, INDEPENDENT BUCKLING IN A MATTRESS SYSTEM | United States of America | Issued | 12/410,954 | Mar 25, 2009 | 8549684 |

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| COMPOSITE MATTRESSES WITH AIR CHAMBERS | United States of America | Issued | 17/176,498 | Feb 16, 2021 | 11213139 |
| VENTILATED MATTRESSES | United States of America | Issued | 17/223,970 | Apr 6, 2021 | 11311111 |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | Australia | Issued | 2017228993 | Mar 3, 2017 | 2017228993 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Australia | Issued | 2017228983 | Mar 3, 2017 | 2017228983 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Australia | Issued | 2018304056 | Jul 10, 2018 | 2018304056 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | Australia | Issued | 2018307218 | Jul 16, 2018 | 2018307218 |
| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | Australia | Issued | 2018369536 | Nov 13, 2018 | 2018369536 |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | Australia | Issued | 2018368457 | Nov 16, 2018 | 2018368457 |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | Australia | Issued | 2018368359 | Nov 13, 2018 | 2018368359 |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Canada | Issued | 3,016,700 | Mar 3, 2017 | 3016700 |

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| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | Canada | Issued | 3,016,707 | Mar 3, 2017 | 3016707 |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | Canada | Issued | 3,016,874 | Mar 3, 2017 | 3016874 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Canada | Issued | 3,016,702 | Mar 3, 2017 | 3016702 |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Canada | Issued | 3,037,403 | Sep 20, 2017 | 3037403 |
| BED LINEN PACKAGING | Canada | Issued | 3,037,390 | Oct 18, 2017 | 3037390 |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | Canada | Issued | 3,040,500 | Oct 18, 2017 | 3040500 |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | Canada | Issued | 3,040,473 | Sep 20, 2017 | 3040473 |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | Canada | Issued | 3049205 | Dec 7, 2017 | 3049205 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Canada | Issued | 3,054,345 | Jul 10, 2018 | 3054345 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | Canada | Issued | 3,070,066 | Jul 16, 2018 | 3070066 |
| MOLDING SYSTEMS, MOLD EXTRACTOR | Canada | Issued | 3082817 | Nov 13, 2018 | 3082817 |

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| SYSTEMS, AND RELATED METHODS | | | | | |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | Canada | Issued | 3082585 | Nov 16, 2018 | 3082585 |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | Canada | Issued | 3084510 | Nov 13, 2018 | 3084510 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | China | Issued | 2018108002376 | Jul 20, 2018 | ZL 2018108002376 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | China | Issued | 2017800160214 | Mar 3, 2017 | ZL 2017800160214 |
| BED LINEN PACKAGING | China | Issued | 2017800659523 | Oct 18, 2017 | ZL 2017800659523 |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | China | Issued | 2017800688615 | Sep 20, 2017 | ZL 2017800688615 |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | China | Issued | 201880086222.6 | Nov 16, 2018 | ZL 201880086222.6 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | European Patent Office | Issued | 17763792.3 | Mar 3, 2017 | 3 426 096 |

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| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | European Patent Office | Issued | 17763801.2 | Mar 3, 2017 | 3 426 560 |
| BED LINEN PACKAGING | European Patent Office | Issued | 17864930.7 | Oct 18, 2017 | EP3532395 B1 |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | European Patent Office | Issued | EP18836710.6 | Nov 16, 2018 | EP3709844 B1 |
| PACKAGED BED LINEN AND METOF PACKAGING A BED LINEN | United Kingdom | Issued | EP3532395 | Oct 18, 2017 | EP3532395 B1 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Japan | Issued | 2018-545840 | Mar 3, 2017 | 6756845 |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Japan | Issued | 2019-514114 | Sep 20, 2017 | 6605780 |
| BED LINEN PACKAGING | Japan | Issued | 2019-514115 | Oct 18, 2017 | 6944517 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | Japan | Issued | 2020-504409 | Jul 16, 2018 | 6979116 |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | Japan | Issued | 2020-526864 | Nov 16, 2018 | 7062061 |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL | Japan | Issued | 2020-527078 | Nov 13, 2018 | 7024080 |

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| LAYER AND RELATED METHODS | | | | | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Republic of Korea | Issued | 10-2018-7028892 | Mar 3, 2017 | 10-2124152 |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | Republic of Korea | Issued | 10-2018-7028894 | Mar 3, 2017 | 10-2124154 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Republic of Korea | Issued | 10-2018-7028893 | Mar 3, 2017 | 10-2124153 |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | Republic of Korea | Issued | 10-2019-7011425 | Sep 20, 2017 | 10-2446979 |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | Republic of Korea | Issued | 10-2019-7028936 | Jul 10, 2018 | 10-2304566 |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | Republic of Korea | Issued | 10-2020-7003012 | Jul 16, 2018 | 10-2286943 |
| CUSHIONS INCLUDING ONE OR MORE ZONES OF DIFFERENT MATERIALS AND RELATED METHODS OF MANUFACTURE FOR IMPROVED YIELD | Republic of Korea | Issued | 10-2020-7017072 | Nov 16, 2018 | 10-2438283 |

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| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | Republic of Korea | Issued | 10-2020-7016996 | Nov 13, 2018 | 10-2414730 |
| BLANKET | United States of America | Issued | 29/661,680 | Aug 29, 2018 | D902627 |
| MATTRESS CUSHION | United States of America | Issued | 29/557,601 | Mar 10, 2016 | D799858 |
| PACKAGED MATTRESS CUSHION | United States of America | Issued | 29/557,162 | Mar 7, 2016 | D784731 |
| PACKAGING FOR BED LINEN | United States of America | Issued | 29/587,296 | Dec 12, 2016 | D831478 |
| Cushion with Offset Cells | United States of America | Issued | 29/694,846 | Jun 13, 2019 | D917206 |
| Cushion with Offset Cells | United States of America | Issued | 29/694,851 | Jun 13, 2019 | D917927 |
| MATTRESS | United States of America | Issued | 29/695,784 | Jun 21, 2019 | D928535 |
| MATTRESS COVER | United States of America | Issued | 29/706,731 | Sep 23, 2019 | D929773 |
| Pillow | United States of America | Issued | 29/710,438 | Oct 23, 2019 | D959176 |
| BED | United States of America | Issued | 29/720,825 | Jan 16, 2020 | D951670 |
| MATTRESS LABEL | United States of America | Issued | 29/779,633 | Apr 20, 2021 | D983265 |
| PILLOW | United States of America | Issued | 29/676,858 | Jan 15, 2019 | D917926 |
| PILLOW | United States of America | Issued | 29/676,862 | Jan 15, 2019 | D909092 |
| PILLOW | United States of America | Issued | 29/676,872 | Jan 15, 2019 | D909790 |
| CUSHION WITH HEXAGONAL CELLS | United States of America | Issued | 29/779,618 | Apr 20, 2021 | D990930 |

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| CUSHION WITH HEXAGONAL CELLS | United States of America | Issued | 29/782,165 | May 4, 2021 | |
| MATTRESS CUSHION | United States of America | Issued | 29/607,428 | Jun 13, 2017 | D864613 |
| MATTRESS CUSHION | Australia | Issued | 201614286 | Aug 9, 2016 | 201614795 |
| PACKAGING FOR BED LINEN | Australia | Issued | 201713513 | Jun 12, 2017 | 201713513 |
| PACKAGED MATTRESS CUSHION | Australia | Issued | 201614284 | Aug 9, 2016 | 201614284 |
| PACKAGING FOR BED LINEN | Canada | Issued | 175,312 | Jun 12, 2017 | 175312 |
| MATTRESS CUSHION | Canada | Issued | 169,909 | Aug 15, 2016 | 169909 |
| PACKAGED MATTRESS CUSHION | Canada | Issued | 169,908 | Aug 15, 2016 | 169908 |
| MATTRESS | Canada | Issued | 186692 | Mar 27, 2019 | 186692 |
| MATTRESS COVER WITH WAVE PATTERN | Canada | Issued | 207280 | Oct 20, 2021 | 207280 |
| CYLINDRICAL CUSHION | Canada | Issued | 207281 | Oct 20, 2021 | 207281 |
| MATTRESS COVER WITH WAVE PATTERN | Canada | Issued | 207282 | Oct 20, 2021 | 207282 |
| MATTRESS COVER WITH WAVE PATTERN | Canada | Issued | 207283 | Oct 20, 2021 | 207283 |
| MATTRESS COVER WITH WAVE PATTERN | Canada | Issued | 207284 | Oct 20, 2021 | 207284 |
| MATTRESS COVER WITH WAVE PATTERN | Canada | Issued | 207285 | Oct 20, 2021 | 207285 |
| MATTRESS CUSHION | China | Issued | 201630427017.5 | Aug 26, 2016 | ZL 201630427017.5 |
| PACKAGED MATTRESS CUSHION | China | Issued | 201630463279.7 | Sep 6, 2016 | ZL 201630463279.7 |
| PACKAGING FOR BED LINEN | China | Issued | 201730238284.2 | Jun 12, 2017 | ZL 201730238284.2 |
| MATTRESS | China | Issued | 201930385264.7 | Jul 19, 2019 | CN 3056842555 S |
| CUSHION WITH OFFSET CELLS | China | Issued | 201930698255.3 | Dec 13, 2019 | ZL 2019 3 0698255.3 |
| Cushion with Offset Cells | China | Issued | 201930698383.8 | Dec 13, 2019 | ZL201930698383.8 |
| MATTRESS CUSHION | European Union | Issued | 003338482-0002 | Aug 12, 2016 | 003338482-0002 |

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| PACKAGED MATTRESS CUSHION | European Union | Issued | 003338482-0001 | Aug 12, 2016 | 003338482-0001 |
| PACKAGING FOR BED LINEN | European Union | Issued | 004043354 | Jun 12, 2017 | 004043354-0001/-0002 |
| MATTRESS CUSHION | European Union | Issued | 003338482-0003 | Aug 12, 2016 | 003338482-0003 |
| CYLINDRICAL CUSHION | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| MATTRESS COVER WITH WAVE PATTERN | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| MATTRESS COVER WITH WAVE PATTERN | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| MATTRESS COVER WITH WAVE PATTERN | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| MATTRESS COVER WITH WAVE PATTERN | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| MATTRESS COVER WITH WAVE PATTERN | European Union | Issued | 008731897 | Oct 20, 2021 | 008731897 |
| PACKAGED MATTRESS CUSHION | United Kingdom | Issued | 90033384820001 | Aug 12, 2016 | 90033384820001 |
| MATTRESS CUSHION | United Kingdom | Issued | 90033384820002 | Aug 12, 2016 | 90033384820002 |
| MATTRESS CUSHION | United Kingdom | Issued | 90033384820003 | Aug 12, 2016 | 90033384820003 |
| PACKAGING FOR BED LINEN | United Kingdom | Issued | 90040433540001 | Jun 12, 2017 | 90040433540001 |
| PACKAGING FOR BED LINEN | United Kingdom | Issued | 90040433540002 | Jun 12, 2017 | 90040433540002 |
| PACKAGING FOR BED LINEN | India | Issued | 294575-IN | Jun 10, 2017 | 294575 |
| PACKAGING FOR BED LINEN | Republic of Korea | Issued | 30-2017-0026582 | Jun 12, 2017 | 30-0956695 |
| PACKAGING FOR BED LINEN | South Africa | Issued | A2017/00945 | Jun 12, 2017 | A2017/00945 |
| Pillow | Canada | Issued | 194370 | Apr 3, 2020 | 194370 |
| Pillow | China | Issued | 202030170587.7 | Apr 23, 2020 | ZL202030170587.7 |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Canada | Pending | 3,016,790 | Sep 7, 2018 | |
| TRANSPORTING MATTRESSES | Canada | Pending | 3,175,547 | Sep 19, 2022 | |

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| DUVET | Canada | Pending | 3,186,437 | Jan 16, 2023 | |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | China | Pending | 2018110537995 | Sep 11, 2018 | |
| DUVET | China | Pending | 202310062246.0 | Jan 16, 2023 | |
| DUVET | India | Pending | 202314002933 | Jan 14, 2023 | |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Japan | Pending | 2018-169329 | Sep 11, 2018 | |
| TRANSPORTING MATTRESSES | Mexico | Pending | MX/a/2022/011686 | Sep 20, 2022 | |
| DUVET | Mexico | Pending | MX/a/2023/000776 | Jan 16, 2023 | |
| CUSHIONING ELEMENTS WITH PRESSURIZABLE CELLS | Taiwan | Pending | 112107362 | Mar 1, 2023 | |
| CUSHIONS COMPRISING A NON-SLIP ELASTOMERIC CUSHIONING ELEMENT | United States of America | Pending | 15/058,637 | Mar 2, 2016 | |
| SLEEP SEQUENCE INITIATION FOR A SMART BED | United States of America | Pending | 17/978,119 | Oct 31, 2022 | |
| SYNCHRONIZATION OF PRESSURIZATION WITH ARRANGEMENT OF ADJUSTABLE PLATFORM | United States of America | Pending | 17/978,141 | Oct 31, 2022 | |
| SEQUENCE INITIATION FOR PLACING A SMART BED IN AN OUT-OF-BED STATE | United States of America | Pending | 17/978,167 | Oct 31, 2022 | |
| AUTOMATIC MATTRESS ADJUSTMENT TO IMPROVE RESTFUL SLEEP | United States of America | Pending | 17/978,173 | Oct 31, 2022 | |

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| INDIVIDUAL IDENTIFICATION AND CUSTOMIZED ADJUSTMENT BY A SMART BED | United States of America | Pending | 17/978,186 | Oct 31, 2022 | |
| SYSTEMS AND METHODS FOR UPDATING SMART BED REMOTE CONTROL | United States of America | Pending | 17/978,198 | Oct 31, 2022 | |
| SMART BED WITH MATTRESS THAT RESPONDS TO PHYSICAL INPUTS | United States of America | Pending | 18/100,818 | Jan 24, 2023 | |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT ON POCKETED COILS WITH CUSHIONING COIL TOPPERS | United States of America | Pending | 18/102,671 | Jan 27, 2023 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | PCT | Pending | PCT/US2021/058461 | Nov 8, 2021 | |
| CUSHIONING ELEMENTS WITH PRESSURIZABLE CELLS | PCT | Pending | PCT/US2022/018173 | Feb 28, 2022 | |
| ADJUSTABLE MATTRESS SIDE RAILS | PCT | Pending | PCT/US2022/019635 | Mar 9, 2022 | |
| MATTRESS WITH SENSORS | PCT | Pending | PCT/US2022/046312 | Oct 11, 2022 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | United States of America | Pending | 17/021,962 | Sep 15, 2020 | |
| SMART BED WITH MATTRESS THAT RESPONDS TO PHYSICAL INPUTS | United States of America | Pending | 18/104,699 | Feb 1, 2023 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | China | Pending | 2023108398389 | Oct 18, 2017 | |

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| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Japan | Pending | 2023-067162 | Sep 11, 2018 | |
| COMPOSITE MATTRESS | Taiwan | Pending | 111128185 | Jul 27, 2018 | |
| Cushioned Covers for Cushions | United States of America | Pending | 16/901,783 | Jun 15, 2020 | |
| MATTRESS WITH SENSORS | United States of America | Pending | 17/963,845 | Oct 11, 2022 | |
| DUVET | United States of America | Pending | 18/097,815 | Jan 17, 2023 | |
| BED LINEN PACKAGING | Australia | Pending | 2017352429 | Oct 18, 2017 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Australia | Pending | 2017332148 | Sep 20, 2017 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | Australia | Pending | 2017346846 | Oct 18, 2017 | |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | Australia | Pending | 2017332702 | Sep 20, 2017 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | Australia | Pending | 2017376688 | Dec 7, 2017 | |
| Cushioned Covers for Cushions | Australia | Pending | 2020294103 | Jun 15, 2020 | |
| Pillows and Covers | Canada | Pending | 3128523 | Jun 15, 2020 | |
| PRINTED ELASTOMERIC ELEMENTS | Canada | Pending | 3,167,235 | Feb 8, 2021 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | Canada | Pending | 3167989 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | Canada | Pending | 3,174,871 | Apr 6, 2021 | |

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| REMOTELY CONTROLLING BEDS | Canada | Pending | 3176413 | Jun 15, 2021 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | Canada | Pending | 3,196,263 | Nov 8, 2021 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | China | Pending | 2017800159999 | Mar 3, 2017 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | China | Pending | | Nov 8, 2021 | |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | European Patent Office | Pending | 17763799.8 | Mar 3, 2017 | |
| CUSHIONED COVERS FOR CUSHIONS | India | Pending | 202117060606 | Jun 15, 2020 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | India | Pending | 202317011641 | Nov 8, 2021 | |
| Pillows and Covers | Japan | Pending | 2021-573767 | Jun 15, 2020 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | Republic of Korea | Pending | 10-2018-7028892 | Mar 3, 2017 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | Republic of Korea | Pending | 10-2019-7009876 | Sep 20, 2017 | |
| BED LINEN PACKAGING | Republic of Korea | Pending | 10-2019-7009881 | Oct 18, 2017 | |

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| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | Republic of Korea | Pending | 10-2019-7013883 | Oct 18, 2017 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | Republic of Korea | Pending | 10-2019-7020571 | Dec 7, 2017 | |
| Cushioned Covers for Cushions | Republic of Korea | Pending | 10-2022-7001143 | Jun 15, 2020 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | Republic of Korea | Pending | 10-2022-7031449 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | Republic of Korea | Pending | 10-2022-7038736 | Apr 6, 2021 | |
| REMOTELY CONTROLLING BEDS | Republic of Korea | Pending | 10-2022-7045911 | Jun 15, 2021 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | Republic of Korea | Pending | 10-2023-7017142 | Nov 8, 2021 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | Mexico | Pending | MX/a/2023/004660 | Nov 8, 2021 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | United States of America | Pending | 29/763,711 | Dec 23, 2020 | |
| CYLINDRICAL CUSHION | United States of America | Pending | 29/779,639 | Apr 20, 2021 | |
| MATTRESS | United States of America | Pending | 29/882,963 | Jan 20, 2023 | |
| FABRIC | United States of America | Pending | 29/883,287 | Jan 26, 2023 | |
| FABRIC | United States of America | Pending | 29/883,292 | Jan 26, 2023 | |
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| PILLOW | United States of America | Pending | 29/842,403 | Jun 13, 2022 | |

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| MATTRESS WITH SENSORS | United States of America | Pending | 63/253,947 | Oct 8, 2021 | |
| DUVET | United States of America | Pending | 63/299,671 | Jan 14, 2022 | |
| OPTIMIZED CUSHIONING ELEMENTS | United States of America | Pending | 63/391,995 | Jul 25, 2022 | |
| MATTRESSES WITH STABILIZED UPPER SURFACES | United States of America | Pending | 63/440,591 | Jan 23, 2023 | |
| TEXTURE MASKING OF A PATTERNED GEL LAYER OF A MATTRESS | United States of America | Pending | 63/440,815 | Jan 24, 2023 | |
| GRID WITH TAPERED WALLS | United States of America | Pending | 63/441,571 | Jan 27, 2023 | |
| CUSHIONING ELEMENTS WITH VIRTUAL SURFACE CONTOURING | United States of America | Pending | 63/441,581 | Jan 27, 2023 | |
| CUSHIONING ELEMENTS WITH OPTIMIZED HEXAGONAL GRID | United States of America | Pending | 63/441,789 | Jan 28, 2023 | |
| REDUCED TACK ELASTOMERIC GEL MATERIALS | United States of America | Pending | 63/444,514 | Feb 9, 2023 | |
| REDUCED TACK ELASTOMERIC GEL MATERIALS WITH A STIFFENING AGENT | United States of America | Pending | 63/444,517 | Feb 9, 2023 | |
| PACKAGED MATTRESS CUSHION | Australia | Pending | 201614795 | Aug 9, 2016 | |
| MATTRESS | Canada | Pending | 221433 | May 15, 2023 | |
| CYLINDRICAL CUSHION | China | Pending | 202130687560.X | Oct 20, 2021 | |
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| FABRIC | China | Pending | 202330432336.5 | Jul 11, 2023 | |
| CUSHIONS INCLUDING ONE OR MORE REINFORCED | China | Published | 201810825260.0 | Jul 23, 2018 | |

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| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | United States of America | Published | 15/063,143 | Mar 7, 2016 | |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | United States of America | Published | 15/700,786 | Sep 11, 2017 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | United States of America | Published | 15/654,948 | Jul 20, 2017 | |
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| PET CUSHION | United States of America | Published | 15/861,278 | Jan 3, 2018 | |
| TRANSPORTING MATTRESSES | United States of America | Published | 17/479,868 | Sep 20, 2021 | |
| MATTRESSES INCLUDING A ZONED CUSHIONING LAYER AND RELATED METHODS | United States of America | Published | 17/110,137 | Dec 2, 2020 | |
| MATTRESS ASSEMBLIES | PCT | Published | PCT/US2022/021400 | Mar 22, 2022 | |

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| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | United States of America | Published | 17/105,208 | Nov 25, 2020 | |
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| MATTRESSES INCLUDING A COIL LAYER AND AN ELASTOMERIC CUSHIONING ELEMENT | United States of America | Published | 17/735,795 | May 3, 2022 | |
| SECONDARY CUSHIONING ELEMENTS FOR CUSHIONS | United States of America | Published | 18/096,517 | Jan 12, 2023 | |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | United States of America | Published | 18/121,549 | Mar 14, 2023 | |
| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | China | Published | 2021107867192 | Jul 17, 2018 | |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | China | Published | 2023101372513 | Jul 23, 2018 | |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | European Patent Office | Published | 21194154.7 | Sep 11, 2018 | |
| CUSHIONS AND SHOE INSOLES COMPRISING ELASTOMERIC MATERIAL AND METHODS OF FORMING SAME | Japan | Published | 2020-183452 | Sep 11, 2018 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING | Japan | Published | 2020-214505 | Mar 3, 2017 | |

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| KNITTED FABRIC, AND RELATED METHODS | | | | | |
| METHODS FOR PACKING, SHIPPING, AND UNPACKING A CUSHION | United States of America | Published | 15/611,567 | Jun 1, 2017 | |
| MATTRESS FOOT COVER | United States of America | Published | 17/497,683 | Oct 8, 2021 | |
| PILLOW WITH VARIABLE CUSHIONING CHARACTERISTICS | United States of America | Published | 17/521,604 | Nov 8, 2021 | |
| ADJUSTABLE MATTRESS SIDE RAILS | United States of America | Published | 17/691,009 | Mar 9, 2022 | |
| MATTRESS ASSEMBLIES | United States of America | Published | 17/701,446 | Mar 22, 2022 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | China | Published | 2017800053903 | Sep 20, 2017 | |
| CUSHION COVER WITH INTEGRALLY KNIT, HIGH-RELIEF GRAPHIC FEATURE AND CUSHIONS EMPLOYING SUCH CUSHION COVERS | China | Published | 2017800160055 | Mar 3, 2017 | |
| BAG FOR SHIPPING A CUSHION AND RELATED METHODS | China | Published | 2017800161537 | Mar 3, 2017 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | China | Published | 2017800645639 | Oct 18, 2017 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | China | Published | 201780084472.1 | Dec 7, 2017 | |
| CUSHIONED COVERS FOR CUSHIONS | China | Published | 202080019730.X | Jun 15, 2020 | |
| BLANKET WITH ELASTOMERIC WEIGHTING ELEMENTS | China | Published | 202180013459.3 | Feb 8, 2021 | |

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| COMPOSITE MATTRESSES WITH AIR CHAMBERS | China | Published | 202180014677.9 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | China | Published | 202180027396.7 | Apr 6, 2021 | |
| REMOTELY CONTROLLING BEDS | China | Published | 202180034031.7 | Jun 15, 2021 | |
| MATTRESSES AND MATTRESS TOPPERS INCLUDING KNITTED FABRIC, AND RELATED METHODS | European Patent Office | Published | 17763791.5 | Mar 3, 2017 | |
| MATTRESS TOPPERS, AIR TABLES FOR MAKING MATTRESS TOPPERS, AND RELATED METHODS | European Patent Office | Published | 17763802.0 | Mar 3, 2017 | |
| PILLOW INCLUDING GELATINOUS ELASTOMER CUSHION HAVING DEFORMABLE WALL MEMBERS AND RELATED METHODS | European Patent Office | Published | 17853779.1 | Sep 20, 2017 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | European Patent Office | Published | 17861434.3 | Oct 18, 2017 | |
| MATTRESS PROTECTORS, MATTRESSES COVERED BY MATTRESS PROTECTORS, AND RELATED METHODS | European Patent Office | Published | 17853795.7 | Sep 20, 2017 | |
| ADJUSTABLE BED FOUNDATIONS AND RELATED METHODS | European Patent Office | Published | EP17881826.6 | Dec 7, 2017 | |
| CUSHIONS INCLUDING A COATED ELASTOMERIC CUSHIONING ELEMENT AND RELATED METHODS | European Patent Office | Published | EP18835912.9 | Jul 10, 2018 | |
| MATTRESSES INCLUDING SPACER FABRIC AND RELATED METHODS | European Patent Office | Published | 18838906.8 | Jul 16, 2018 | |

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| MOLDING SYSTEMS, MOLD EXTRACTOR SYSTEMS, AND RELATED METHODS | European Patent Office | Published | EP18812496.0 | Nov 13, 2018 | |
| MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS | European Patent Office | Published | EP18812494.5 | Nov 13, 2018 | |
| Cushioned Covers for Cushions | European Patent Office | Published | EP20822637.3 | Jun 15, 2020 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | European Patent Office | Published | EP21754104.4 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | European Patent Office | Published | EP21784813.4 | Apr 6, 2021 | |
| REMOTELY CONTROLLING BEDS | European Patent Office | Published | EP21825484.5 | Jun 15, 2021 | |
| BED LINENS, AND RELATED BEDDING ASSEMBLIES AND METHODS | Japan | Published | 2019-520434 | Oct 18, 2017 | |
| BLANKET WITH ELASTOMERIC WEIGHTING ELEMENTS | Mexico | Published | MX/a/2022/009717 | Feb 8, 2021 | |
| COMPOSITE MATTRESSES WITH AIR CHAMBERS | Mexico | Published | MX/a/2022/009977 | Feb 16, 2021 | |
| VENTILATED MATTRESSES | Mexico | Published | MX/a/2022/012551 | Apr 6, 2021 | |
| REMOTELY CONTROLLING BEDS | Mexico | Published | MX/a/2022/013492 | Jun 15, 2021 | |
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UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 05/03/2022 | 11317733 | 54023-3030US01 | 9411 |

128128 7590 04/13/2022

Dentons Durham Jones Pinegar
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Lehi, UT 84043

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 425 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Tony M. Pearce, Alpine, UT;
Lars Christen Hamilton, Alpine, UT;
Tanner Rick Wheadon, Lehi, UT;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Purple Innovation, LLC, Alpine, UT;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

128128 7590 04/01/2022

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| EXAMINER |
|---|
| MCCLURE, MORGAN J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3673 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 04/01/2022 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

djp.ipmail@dentons.com
stacia.boren@dentons.com

| Response to Rule 312 Communication | Application No. | Applicant(s) | |
|---|---|---|---|
| | 15/816,983 | Pearce, Tony M. | |
| | Examiner | Art Unit | AIA (FITF) Status |
| | MORGAN J MCCLURE | 3673 | Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

1. ☑ The amendment filed on 07 March 2022 under 37 CFR 1.312 has been considered, and has been:

a) ☑ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS)

☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78;

☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2);

☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012).

| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673 |
|---|---|

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Purple Innovation, LLC

**Application No.:** 15/816,983

**Filed:** November 17, 2017

**Confirmation No.:** 9411

**For:** MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

**Art Unit:** 3673

**Examiner:** McClure, Morgan J.

**Attorney Docket No.:** 54023-3030US01

VIA EFS
March 7, 2022

**AMENDMENT UNDER 37 C.F.R. § 1.312**

Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Examiner:

This Amendment, which is being filed pursuant to 37 C.F.R. § 1.312, follows the Notice of Allowance of December 7, 2022 and accompanies payment of the issue fee.

Proposed amendments to the specification begin on page 2 of this paper;

A listing of the claims, in which proposed revisions to the claims are presented, begins on page 4 of this paper; and

Remarks appear on page 8 of this paper.

IN THE SPECIFICATION

It is proposed that each paragraph of the specification identified below be amended in the manner presented therein.

On page 1, lines 2 and 3, under the heading "TITLE":

MATTRESSES INCLUDING AN ~~ELEASTOMERIC~~ ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

**[0040]** FIG. 3 is a simplified perspective view of the elastomeric cushioning element 108. The elastomeric cushioning element 108 may include a singly-molded elastomeric cushioning element 108. For example, the entirety of the elastomeric cushioning element 108 may be formed via a single molding process. In some embodiments, the elastomeric cushioning element 108 may include buckling walls 122. The buckling walls 122 of the elastomeric cushioning element 108 may be interconnected to one another and may define hollow columns 124 or voids in an expanded form. As used herein, the term "expanded form" means and includes a state in which ~~a elastomeric~~ an elastomeric cushioning element 108 has its original size and shape and wherein the buckling walls 122 are separated and define hollow columns 124.

**[0052]** Referring again to ~~FIG. 2 again,~~ FIG. 2, a configuration of having the coil layer 104 with the upper layer 106 on top of the coil layer 104 and the elastomeric cushioning element 108 on top of the upper layer 106 may provide advantages over conventional mattress assemblies. For example, in comparison to conventional mattress assemblies, the plurality of coils 118 of the coil layer 104 may better conform to an upper surface of the mattress assembly 100. For instance, when subjected to a weight (e.g., a person on the mattress assembly 100) and a resulting deformation, the plurality of coils 118 of the coil layer 104 may better conform to the deformation. Furthermore, the configuration may provide an increase in lateral stability in comparison to conventional mattress assemblies. Additionally, the foregoing configuration may make methods of manufacturing the mattress assembly 100 easier in comparison to conventional methods of manufacturing mattresses because it removes a need to

laminate/glue the coil layer 104 to the elastomeric cushioning element 108. Having the upper layer 106 between the coil layer 104 and the elastomeric cushioning element 108 provides a porous surface to adhere to both of the coil layer 104 and the elastomeric cushioning element 108. Furthermore, the upper layer 106 dampens sound from the coil layer 104.

**[0066]** Embodiment 1: A mattress assembly, comprising: a base layer; a coil layer disposed over the base layer, the coil layer comprising a plurality of ~~pocketedcoil~~pocketed coil; an upper layer disposed over the coil layer; and an elastomeric cushioning element disposed over the upper layer, wherein the elastomeric cushioning element has a thickness within a range of about 2.0 inches to about 4.5 inches.

**[0077]** Embodiment 12: The mattress assembly of Embodiment 10, wherein the plurality of casings of each pocketed coil comprises: a first casing; and a second casing disposed within the first casing, wherein the coil is disposed within the ~~secondcasing~~second casing.

IN THE CLAIMS

1. (Previously presented) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric;

an elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed and defining a reduced slip surface or a non-slip surface on a lower surface of the stabilization layer, the reduced slip surface or the non-slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element.

2. (Previously presented) The mattress assembly of claim 1, wherein:

the coil layer has a thickness of about 6.00 inches to about 8.00 inches; and

the elastomeric cushioning element has a thickness of about 2.0 inches to about 4.5 inches.

3. (Previously presented) The mattress assembly of claim 2, wherein:

the coil layer has a thickness of about 7.50 inches; and

the elastomeric cushioning element has a thickness of about 4.0 inches.

4. (Previously presented) The mattress assembly of claim 1, further comprising:

one or more side panels extending around outer perimeters of the base layer and the upper layer, the outer covering also encasing the one or more side panels.

5. (Original) The mattress assembly of claim 1, wherein the base layer and the upper layer both comprise a polyurethane foam.

6. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer provides a slip-resistant surface against the upper layer.

7. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer is secured to the upper layer.

8. (Previously presented) The mattress assembly of claim 7, wherein the stabilization layer is adhesively secured to the upper layer.

9. (Previously presented) The mattress assembly of claim 1, wherein the base layer has a thickness of about 0.75 inches to about 1.50 inches and the upper layer has a thickness of about 0.25 inches to about 0.75 inches.

10. (Currently amended) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils, each pocketed coil of the plurality of pocketed coils comprising:

a plurality of nested casings; and

a single coil disposed within an innermost casting of the plurality of nested casings;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric; and

at least one elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the at least one elastomeric cushioning element seeping through the scrim fabric of the stabilization layer to secure an upper surface of the stabilization layer to the at least one elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric, the non-slip surface or the reduced slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the at least one elastomeric cushioning element.

11. (Original) The mattress assembly of claim 10, wherein the plurality of pocketed coils are oriented next to each other in a grid pattern.

12. (Previously presented) The mattress assembly of claim 10, wherein the plurality of nested casings of each pocketed coil comprises:

a first casing; and

a single second casing disposed within the first casing, with the single coil being disposed within the second casing.

13. (Original) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer.

14. (Previously presented) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element covers a portion of an upper surface of the upper layer.

15. (Previously presented) The mattress assembly of claim 11, wherein the at least one elastomeric cushioning element comprises a grid of interconnected walls defining hollow buckling columns.

16. (Previously presented) A method of forming a mattress assembly, comprising:

disposing a coil layer over a base layer;

disposing an upper layer over the coil layer;

disposing an elastomeric cushioning element over the upper layer including positioning a stabilization layer and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer against the upper layer, the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer; and

encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element in an outer casing.

17. (Previously presented) The method of claim 16, further comprising:

individually disposing each coil of the coil layer within a first casing; and

individually disposing the first casing within a second casing.

18. (Previously presented) The method of claim 17, wherein individually disposing each coil of the coil layer within the first casing comprises individually disposing the coil within a polypropylene bag.

19. (Currently amended) The method of claim 18, wherein individually disposing the first casing within the second casing comprises individually disposing the first casing within ~~a polypropylene~~ the polypropylene bag.

20. (Previously presented) The method of claim 16, further comprising:

securing the stabilization layer to the upper layer.

## REMARKS

It is respectfully submitted that none of the proposed amendments introduces new matter into the above-captioned application. If any of the proposed amendments creates an issue that might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

/brick g power/

Brick G. Power
Registration No. 38,581
Attorney for Applicant
**DENTONS**
3301 North Thanksgiving Way, Suite 400
Lehi, Utah 84043
Telephone: (801) 375-6600

Date: March 7, 2022
BGP/skp

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15816983 |
| **Filing Date:** | 17-Nov-2017 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Attorney Docket Number:** | 54023-3030US01 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| UTILITY APPL ISSUE FEE | 1501 | 1 | 1200 | 1200 |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **1200** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 45165493 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 07-MAR-2022 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 18:22:05 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $1200 |
| RAM confirmation Number | E202237I22411903 |
| Deposit Account | |
| Authorized User | |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Post Allowance Communication - Incoming | 2022-03-07-Comments-54023-3030US01.pdf | 83640<br>7acf81be7dae1e2dd1569d7d67bb408b85621afa | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Issue Fee Payment (PTO-85B) | 2022-03-07-ptol85b-IFT-54023-3030US01.PDF | 697756<br>eb9b4727a4d537f62be896d8889b1309275343a7 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | | 2022-03-07-Amendment-54023-3030US01.pdf | 98902<br>fa7a341a889fa776a00b13a021101ff04b572223 | yes | 8 |

**Multipart Description/PDF files in .zip description**

| Document Description | Start | End |
|---|---|---|
| Amendment after Notice of Allowance (Rule 312) | 1 | 1 |
| Specification | 2 | 3 |
| Claims | 4 | 7 |
| Applicant Arguments/Remarks Made in an Amendment | 8 | 8 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 38324<br>600da1ef49ef2d7ea89be63e9965341ac1654853 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 918622 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Purple Innovation, LLC

**Application No.:** 15/816,983

**Filed:** November 17, 2017

**Confirmation No.:** 9411

**For:** MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

**Art Unit:** 3673

**Examiner:** McClure, Morgan J.

**Attorney Docket No.:** 54023-3030US01

VIA EFS
March 7, 2022

**COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE**

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The statement of Reasons for Allowance that accompanied the Notice of Allowance in the above-captioned application has been considered. It is acknowledged that the allowed independent claims are allowable for the reasons specified in the statement of Reasons for Allowance. It is also acknowledged that the statement of Reasons for Allowance includes a discussion of specific limitations in the claims. It is respectfully submitted, however, that the claims may recite allowable subject matter other than the specific limitations identified in the statement of Reasons for Allowance.

Respectfully submitted,

/brick g power/

Brick G. Power
Registration No. 38,581
Attorney for Applicant
**DENTONS**
3301 North Thanksgiving Way, Suite 400
Lehi, Utah 84043
(801) 375-6600

Date: March 7, 2022
BGP/skp

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

128128 7590 12/07/2021
Dentons Durham Jones Pinegar
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

| | |
|---|---|
| Stacia Pentz-Boren | (Typed or printed name) |
| /Stacia Pentz-Boren/ | (Signature) |
| March 7, 2022 | (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

TITLE OF INVENTION: MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 03/07/2022 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| MCCLURE, MORGAN J | 3673 | 005-720000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 DENTONS Durham Jones Pinegar
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Purple Innovation, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Lehi, Utah

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

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☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /brick g power/ Date 2022-03-07

Typed or printed name Brick G. Power Registration No. 38581

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
**United States Patent and Trademark Office**
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

128128 7590 02/16/2022

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3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

| EXAMINER | |
|---|---|
| MCCLURE, MORGAN J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3673 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/16/2022 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

djp.ipmail@dentons.com
stacia.boren@dentons.com

| ***Corrected*** ***Notice of Allowability*** | **Application No.** 15/816,983 | **Applicant(s)** Pearce et al. | |
|---|---|---|---|
| | **Examiner** MORGAN J MCCLURE | **Art Unit** 3673 | **AIA (FITF) Status** Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to documents filed 2/7/22.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All  b) ☐ Some*  c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673 |
|---|---|

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/
15816983, filed on 11/17/2017

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

**U.S.PATENTS** Remove

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

| | | |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99**) | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | | |
|---|---|---|---|
| | 1 | CHINA NATIONAL INTELLECTUAL PROPERTY ADMINISTRATION , "Third Office Action," Chinese Application No. 201810811684.1, December 30, 2021 | ☒ |
| | 2 | JAPAN PATENT OFFICE, "Notice of Allowance," Japanese Application No. 2020-527078, January 16, 2022 | ☐ |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| | | | |
|---|---|---|---|
| Examiner Signature | /MORGAN J MCCLURE/ | Date Considered | 02/09/2022 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

| | | |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( **Not for submission under 37 CFR 1.99)** | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

✓ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

✓ See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2022-02-07 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/
Typed,Printed,Date:08/25/2022

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

**U.S.PATENT APPLICATION PUBLICATIONS** Remove

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | | |
|---|---|---|---|
| | 1 | CHINA NATIONAL INTELLECTUAL PROPERTY ADMINISTRATION , "Third Office Action," Chinese Application No. 201810811684.1, December 30, 2021 | ☒ |
| | 2 | JAPAN PATENT OFFICE, "Notice of Allowance," Japanese Application No. 2020-527078, January 16, 2022 | ☐ |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

✓ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

✓ See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2022-02-07 |
|---|---|---|---|
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15816983 |
| **Filing Date:** | 17-Nov-2017 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Attorney Docket Number:** | 54023-3030US01 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 260 | 260 |
| | | **Total in USD ($)** | | **260** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 44935338 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 07-FEB-2022 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 17:19:20 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $260 |
| RAM confirmation Number | E202227H19382427 |
| Deposit Account | |
| Authorized User | |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 2022-02-07-sb00008a-IDS-54023-3030US01.PDF | 1035105<br>0b9224cd0d54aa1f2036bfad2242aed3d10ae088 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems. | | | | | |
| 2 | Non Patent Literature | 2022-01-16-NOA-54023-3030WOJP.PDF | 55984<br>691454d75227ba9d03e461398a9bf6e9748d788a | no | 3 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 2021-12-30-OA-54023-3030WOCN.PDF | 1071187<br>98f2fb2d526dc571cd390ec4865297cd9dad52f1 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 38438<br>a67f370b73624c47f67d7a2353bd7f3989f00751 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 2200714 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

# NOTICE OF ALLOWANCE AND FEE(S) DUE

128128 7590 12/07/2021

Dentons Durham Jones Pinegar
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

| EXAMINER | |
|---|---|
| MCCLURE, MORGAN J | |
| ART UNIT | PAPER NUMBER |
| 3673 | |

DATE MAILED: 12/07/2021

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

TITLE OF INVENTION: MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 03/07/2022 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.**

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

128128 7590 12/07/2021
Dentons Durham Jones Pinegar
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

| |
|---|
| (Typed or printed name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

TITLE OF INVENTION: MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 03/07/2022 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| MCCLURE, MORGAN J | 3673 | 005-720000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

128128 7590 12/07/2021

Dentons Durham Jones Pinegar
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

| EXAMINER | |
|---|---|
| MCCLURE, MORGAN J | |
| ART UNIT | PAPER NUMBER |
| 3673 | |

DATE MAILED: 12/07/2021

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Notice of Allowability | Application No. 15/816,983 | Applicant(s) Pearce et al. | |
|---|---|---|---|
| | Examiner MORGAN J MCCLURE | Art Unit 3673 | AIA (FITF) Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 11/10/2021.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All  b) ☐ Some*  c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

| | |
|---|---|
| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673 |

**miDETAILED ACTION**

***Notice of Pre-AIA or AIA Status***

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

***Allowable Subject Matter***

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance: Applicant argued that, "It is respectfully submitted that none of Gladney, Rancourt, or Mossbeck teaches or suggests an elastomeric material that seeps through a stabilization layer to define a reduced-slip surface or a non-slip surface on a lower surface of the stabilization layer. Instead, Rancourt teaches an embodiment of mattress where a silicone contact mat 14 is positioned directly adjacent to a body support pad 12 and silicone of the silicone contact mat 14 extends into open cells of the body support pad 12 to mechanically integrate the silicone contact mat 14 to the body support pad 12. Rancourt, col. 6, lines 56-67. One of ordinary skill in the art would recognize that it would be counterintuitive to place an "anti-friction mat" between the body support pad 12 and a silicone contact mat 14 that has been mechanically integrated with the body support pad 12, as it would be impossible to reduce friction between a body support pad 12 and a silicone contact mat 14 that has been mechanically integrated with the body support pad 12. As an alternative to integrating the silicone contact mat 14 with the body support pad 12, Rancourt teaches that an anti-friction mat 16 that includes two layers of lycra-type material could be disposed between the body support pad 12 and the silicone contact mat 14 "to ensure slipping between" the silicone contact mat 14 and the body support pad 12. Rancourt, col. 7, lines 1-3. It is respectfully submitted that one of ordinary skill in the art would readily comprehend that slipping could not be ensured if silicone

material of the silicone contact mat 14 seeped through the anti-friction mat 16 to define a reduced-slip surface, as required by claim 1."

This argument is found persuasive. Rancourt teaches either the layer 14 directly fused with 12 through the elastomeric layer, or, the layer 16 in between the two, but notes that 16 is to ensure slipping, as applicant points out. Thus, there would not be a moment in time during the production or final product where a nonslip layer would be included that seeps through a stabilization layer from the upper surface of the stabilization layer to the lower surface of the stabilization layer and defines a reduced or non-slip surface on the lower surface of the stabilization layer.

Although the prior art teaches elastomeric layers seeping into 'stabilization' layers, the prior art does not teach the elastomeric material seeping from the upper surface of the stabilization layer to the lower layer where the elastomeric material defines a reduced slip or non slip surface on the bottom of the stabilization layer positioned against another layer of the mattress, in conjunction with the additional claimed structure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MORGAN J MCCLURE whose telephone number is (571)270-0362. The examiner can normally be reached M-F 8:30am - 5:00pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 5712726856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MORGAN J MCCLURE/
Examiner, Art Unit 3673

/Peter M. Cuomo/
Supervisory Patent Examiner, Art Unit 3673

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | Examiner | Art Unit |
| | MORGAN J MCCLURE | 3673 |

| CPC - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
| A47C27/20,001,056,06,064,146,148,15 | 01/02/2020 | MM |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| | | | |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| Search Notes | | |
|---|---|---|
| Search Notes | Date | Examiner |
| Inventor Name Search | 01/02/2020 | MM |
| Updated Search | 07/02/2020 | MM |
| Inventor Name Search | 01/28/2021 | MM |
| Updated Search | 06/30/2021 | MM |
| Interference Text Search | 11/16/2021 | MM |

| Interference Search | | | |
|---|---|---|---|
| US Class/CPC Symbol | US Subclass/CPC Group | Date | Examiner |
| | A47C27/20,001,056,06,064,146,148,15 | 11/16/2021 | MM |

| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673 |
|---|---|

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | **Examiner** | **Art Unit** |
| | MORGAN J MCCLURE | 3673 |

| CPC | | | | | | |
|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Version** |
| A47C | / | 27 | / | 20 | F | 2013-01-01 |
| A47C | / | 27 | / | 064 | I | 2013-01-01 |
| A47C | / | 27 | / | 146 | I | 2013-01-01 |
| A47C | / | 27 | / | 148 | I | 2013-01-01 |
| A47C | / | 27 | / | 056 | I | 2013-01-01 |
| A47C | / | 27 | / | 001 | I | 2013-01-01 |
| A47C | / | 27 | / | 15 | I | 2013-01-01 |
| A47C | / | 27 | / | 06 | I | 2013-01-01 |

| CPC Combination Sets | | | | | | | | |
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| **Symbol** | | | | | **Type** | **Set** | **Ranking** | **Version** |
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| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | 16 November 2021 | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 20 | |
| /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673 | 22 November 2021 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 2 and 10 |

U.S. Patent and Trademark Office

Part of Paper No.: 20211116

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | **Examiner** | **Art Unit** |
| | MORGAN J MCCLURE | 3673 |

| INTERNATIONAL CLASSIFICATION | | | | |
|---|---|---|---|---|
| **CLAIMED** | | | | |
| A47C27/20 | / | 27 | / | 20 |
| A47C27/06 | / | 27 | / | 06 |
| A47C27/14 | / | 27 | / | 14 |
| A47C27/05 | / | 27 | / | 05 |
| A47C27/00 | / | 27 | / | 00 |
| A47C27/15 | / | 27 | / | 15 |

| NON-CLAIMED | | | | |
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| US ORIGINAL CLASSIFICATION | |
|---|---|
| **CLASS** | **SUBCLASS** |
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| CROSS REFERENCES(S) | | | | | | |
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| **CLASS** | **SUBCLASS (ONE SUBCLASS PER BLOCK)** | | | | | |
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| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673<br>(Assistant Examiner) | 16 November 2021<br>(Date) | **Total Claims Allowed:**<br>20 | |
| /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673<br>(Primary Examiner) | 22 November 2021<br>(Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>2 and 10 |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | **Examiner** | **Art Unit** |
| | MORGAN J MCCLURE | 3673 |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

**CLAIMS**

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
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| 1 | 1 | 10 | 10 | 19 | 19 | | | | | | | | | | |
| 2 | 2 | 11 | 11 | 20 | 20 | | | | | | | | | | |
| 3 | 3 | 13 | 12 | | | | | | | | | | | | |
| 4 | 4 | 14 | 13 | | | | | | | | | | | | |
| 5 | 5 | 15 | 14 | | | | | | | | | | | | |
| 6 | 6 | 12 | 15 | | | | | | | | | | | | |
| 7 | 7 | 16 | 16 | | | | | | | | | | | | |
| 8 | 8 | 17 | 17 | | | | | | | | | | | | |
| 9 | 9 | 18 | 18 | | | | | | | | | | | | |

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| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673<br>(Assistant Examiner) | 16 November 2021<br>(Date) | **Total Claims Allowed:**<br>20 | |
| /Peter M. Cuomo/<br>Supervisory Patent Examiner, Art Unit 3673<br>(Primary Examiner) | 22 November 2021<br>(Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>2 and 10 |

# PE2E SEARCH - Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| L1 | 77756 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 06:33 PM |
| L2 | 1098 | L1 and elastomeric | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 06:34 PM |
| L3 | 215 | L1 and elastomeric and coil | (US-PGPUB; USPAT; USOCR) | OR | ON | ON | 2019/12/30 06:34 PM |
| L4 | 167 | L1 and elastomeric and coil and mattress | (US-PGPUB; USPAT; USOCR) | OR | ON | ON | 2019/12/30 06:35 PM |
| L5 | 92 | L1 and elastomer and coil and mattress | (US-PGPUB; USPAT; USOCR) | OR | ON | ON | 2019/12/30 06:40 PM |
| L6 | 77756 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 08:09 PM |
| L7 | 92 | L6 and elastomer and coil and mattress | (US-PGPUB; USPAT; USOCR) | OR | ON | ON | 2019/12/30 08:09 PM |
| L8 | 14 | ("3151344" \| "3242505" \| "3256535" \| "3334951" \| "3959833" \| "3991428" \| "4086673" \| "4122567").PN. OR ("4234981").URPN. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 09:21 PM |
| L9 | 55 | ("2651788" \| "3166768" \| "3210781" \| "3274625" \| "3702484").PN. OR ("4213214").URPN. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 09:32 PM |
| L10 | 1042 | spring and foam and adhesive and L6 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 09:45 PM |
| L11 | 2 | ("2014/0208517").URPN. | (USPAT) | OR | OFF | OFF | 2019/12/30 10:40 PM |
| L12 | 26 | ("20130025070"\|"3512192"\|"7424762"\|"20100058541"\|"20110154576"\|"20120180225"\|"20130025068"\|"20120079659"\|"8745795"\|"20140182063"\|"20080095983"\|"20130025069"\|"4092752"\|"20070226911"\|"20110256380"\|"20140059776"\|"6541094"\|"7661164"\|"2610338"\|"20070226911"\|"20120193572"\|"20130167302"\|"6668409"\|"20150335166"\|"5578368"\|"6609261"\|"6954956"\|"8418297"\|"20070061978"\|"5513402"\|"20130025065"\|"3818520"\|"6718583"\|"20040163180"\|"20110173757"\|"5919 | (USPAT) | OR | OFF | OFF | 2019/12/30 10:46 PM |

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| L13 | 25 | ("3512192").URPN. | (USPAT) | OR | OFF | OFF | 2019/12/30 10:53 PM |
| L14 | 1682 | springs and (base with foam) | (USPAT) | OR | OFF | OFF | 2019/12/30 11:10 PM |
| L15 | 220 | L14 and L6 | (USPAT) | OR | OFF | OFF | 2019/12/30 11:10 PM |
| L16 | 53 | ("0698529" \| "1270840" \| "1682394" \| "1745986" \| "1959082" \| "20040237204" \| "20060260062" \| "20070204407" \| "20090193591" \| "20100192299" \| "20100223732" \| "20100319137" \| "20110061163" \| "20130192003" \| "2236007" \| "2615180" \| "3046574" \| "3080578" \| "3082438" \| "3099021" \| "3178735" \| "3230558" \| "3462779" \| "4462129" \| "5724686" \| "5787532" \| "6249924" \| "6295676" \| "6353952" \| "6813791" \| "6826796" \| "6889398" \| "6996865" \| "7082635" \| "7617788" \| "7640611" \| "7644461" \| "7917980" \| "7992242").PN. OR ("8918934").URPN. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2019/12/30 11:11 PM |
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| L18 | 216 | ("1228783" \| "20020013407" \| "20020061384" \| "20040172766" \| "20050223667" \| "20060194925" \| "20070246157" \| "20090246449" \| "20100229308" \| "2029370" \| "2385870" \| | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/01/02 10:47 AM |

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|---|---|---|---|---|---|---|---|
| | | "2458588" \| "2491557" \| "2617751" \| "2655369" \| "2672183" \| "2715435" \| "2814053" \| "2887425" \| "2979739" \| "3043731" \| "3197357" \| "3222697" \| "3308491" \| "3407406" \| "3459179" \| "3462778" \| "3518786" \| "3529368" \| "3552044" \| "3605145" \| "3748669" \| "3748779" \| "3801420" \| "3893198" \| "3940811" \| "3968530" \| "3986213" \| "4038762" \| "4083127" \| "4144658" \| "4163297" \| "4229546" \| "4243754" \| "4247963" \| "4252910" \| "4255202" \| "4256304" \| "4274169" \| "4279044" \| "4292701" \| "4335476" \| "4369284" \| "4370769" \| "4378396" \| "4383342" \| "4422194" \| "4457032" \| "4467053" \| "4472847" \| "4483029" \| "4485505" \| "4485568" \| "4498205" \| "4541136" \| "4572174" \| "4588229" \| "4614632" \| "4618213" \| "4628557" \| "4660238" \| "4670925" \| "4686724" \| "4698864" \| "4709431" \| "4713854" \| "4726624" \| "4728551" \| "4737998" \| "4744564" \| "4761843" \| "4842330" \| "4913755" \| "4945588" \| "4952190" \| "4952439" \| "4953913" \| "4959059" \| "4967433" \| "5010608" \| "5013518" \| "5015313" \| "5018790" \| "5020176" \| "5027801" \| "5039567" \| "5052068" \| "5053436" \| "5058291" \| "5074620" \| "5079786" \| "5079787" \| "5093138" \| "5100712" \| "5103518" \| "5111544" \| "5147685" \| "5149173" \| "5152023" \| "5153956" \| "5163196" \| "5171766" \| "5172494" \| "5180619" \| "5190504" \| "5191752" \| "5201780" \| "5203607" \| "5204154" \| "5211446" \| "5243722" \| "5255404").PN. OR ("5262468" \| "5282286" \| "5289878" \| "5314735" | | | | |

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|---|---|---|---|---|---|---|---|
| | | \| "5330249" \| "5334646" \| "5334696" \| "5335907" \| "5336708" \| "5352023" \| "5360653" \| "5362834" \| "5369828" \| "5403642" \| "5421874" \| "5429852" \| "5444881" \| "5445861" \| "5452488" \| "5456072" \| "5490299" \| "5496610" \| "5508334" \| "5513402" \| "5549743" \| "5592706" \| "5617595" \| "5626657" \| "5633286" \| "5636395" \| "5689845" \| "5749111" \| "5881409" \| "5994450" \| "6026527" \| "6115861" \| "6187837" \| "6241695" \| "6290794" \| "6413458" \| "6490744" \| "6498198" \| "6598321" \| "6704961" \| "6797765" \| "6865759" \| "6905431" \| "6905831" \| "6908662" \| "7060213" \| "7076822" \| "7138079" \| "7444703" \| "7666341" \| "7730566" \| "8075981" \| "8424137" \| "8434748").PN. OR ("8932692").URPN. | | | | | |
| L19 | 38 | ("2005/0223667").URPN. | (USPAT) | OR | OFF | OFF | 2020/01/02 10:52 AM |
| L20 | 77756 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/01/02 11:11 AM |
| L21 | 319 | L20 and (foam with adhesive) | (USPAT) | OR | OFF | OFF | 2020/01/02 11:11 AM |
| L22 | 138 | L20 and ((spring coil) with second with (casing case pocket pocketed pocketing cased)) | (USPAT) | OR | ON | ON | 2020/01/02 11:19 AM |
| L23 | 7 | L20 and ((spring coil) with (second adj (casing case pocket pocketed pocketing cased))) | (USPAT) | OR | ON | ON | 2020/01/02 11:21 AM |
| L25 | 77763 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 02:34 PM |
| L26 | 264 | L25 and seep$4 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 02:34 PM |
| L27 | 41 | L25 and (seep$4 with layer) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 02:35 PM |
| L28 | 2989 | A47C27/20,001,056,06,064,146,148,15.cpc. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 02:39 PM |
| L29 | 7 | L28 and (elastomer$4 with fus$4) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 02:39 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| L30 | 1 | "9032571".pn. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 05:42 PM |
| L31 | 36 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | (US-PGPUB; USPAT) | OR | OFF | OFF | 2020/07/02 06:04 PM |
| L32 | 4 | L31 and (adhesive with foam) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 06:04 PM |
| L33 | 77763 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 06:12 PM |
| L34 | 306 | L33 and (foam with (friction (anti adj slip) (anti-slip) slip)) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 06:12 PM |
| L35 | 114 | L33 and (foam with (friction (anti adj slip) (anti-slip) slip)) and layers | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 06:12 PM |
| L36 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or | (US-PGPUB; USPAT) | OR | OFF | OFF | 2020/07/02 06:45 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | | | | | |
| L37 | 16 | L36 and pocket$4 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 06:45 PM |
| L38 | 1 | (US-7757322-$).did. | (USPAT) | OR | OFF | OFF | 2020/07/02 06:59 PM |
| L39 | 1 | (US-9032571-$).did. | (USPAT) | OR | OFF | OFF | 2020/07/02 07:01 PM |
| L40 | 1 | (US-20150223622-$).did. | (US-PGPUB) | OR | OFF | OFF | 2020/07/02 07:01 PM |
| L41 | 3 | L38 L39 L40 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2020/07/02 07:01 PM |
| L42 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or | (US-PGPUB; USPAT) | OR | OFF | OFF | 2021/01/28 04:27 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | | | | | |
| L43 | 2 | L42 and scrim | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/01/28 04:27 PM |
| L44 | 206 | B68G7/051.cpc. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/01 12:57 PM |
| L45 | 77761 | "5".clas. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:17 PM |
| L46 | 24 | L45 and (foam with (porous pores) with (glue adhesive adher adherring adhering adherred adhered glued gluing glues)) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:17 PM |
| L47 | 64 | ("20010018466" \| "20010056129" \| "20030135930" \| "20040098806" \| "20040211005" \| "20070113352" \| "3308491" \| "5077849" \| "5107558" \| "5231717" \| "5636395" \| "5678266" \| "5768251" \| "5963998" \| "6041459" \| "6343839" \| "6629728" \| "6701556" \| "6726904" \| "6739008" \| "6762243" \| "6809143").PN. OR ("8307482").URPN. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:28 PM |
| L48 | 1 | "5,537,699".pn. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:52 PM |
| L49 | 179 | (cushion mattress pillow) and (foam with (porous pores) with (glue adhesive adher adherring adhering | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:55 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | adherred adhered glued gluing glues)) | | | | | |
| L50 | 158 | L49 not L46 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 03:55 PM |
| L51 | 48 | L45 and (foam with (open) with (glue adhesive adher adherring adhering adherred adhered glued gluing glues)) | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/02/09 04:14 PM |
| L52 | 1 | "8434748".pn. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/06/23 07:31 PM |
| L53 | 243 | gel with scrim | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/06/23 07:32 PM |
| L54 | 74 | ("0681124" \| "1432875" \| "1873607" \| "1986255" \| "2002157" \| "2154910" \| "2610334" \| "2675566" \| "2709819" \| "2755215" \| "2862214" \| "3032782" \| "3148387" \| "3242505" \| "3502316" \| "3596299" \| "3636574" \| "3722013" \| "3822426" \| "3846857" \| "3848283" \| "3855653" \| "4286344" \| "4324011" \| "4326311" \| "4369534" \| "4429427" \| "4449261" \| "4476595" \| "4607402" \| "4662011" \| "4794658" \| "4872228" \| "4975996" \| "4980940" \| "5027459" \| "5040255" \| "5210890" \| "5222264" \| "5239715" \| "5513401" \| "5537699" \| "5704085" \| "5724686" \| "6223370" \| "6249924").PN. OR ("7640611").URPN. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/06/24 01:50 PM |
| L55 | 16 | L54 and pocket and foam | (US-PGPUB; USPAT; USOCR) | OR | ON | ON | 2021/06/24 01:50 PM |
| L56 | 3169 | A47C27/20,001,056,06,064,146,148,15.cpc. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/07/01 12:06 PM |
| L57 | 5484 | (A47C27/15 OR A47C27/064 OR A47C27/148 OR A47C27/144 OR A47C27/001 OR A47C27/062 OR A47C27/14 OR A47C27/05 OR A47C27/056 OR A47C7/35 OR A47C27/085 OR A47C7/18 OR | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/07/01 12:10 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | A47C27/088 OR A47C27/16 OR A47C23/002).CPC. | | | | | |
| L58 | 5834 | (A47C27/15,20,001,056,06,064,146,148 OR A47C27/064 OR A47C27/148 OR A47C27/144 OR A47C27/001 OR A47C27/062 OR A47C27/14 OR A47C27/05 OR A47C27/056 OR A47C7/35 OR A47C27/085 OR A47C7/18 OR A47C27/088 OR A47C27/16 OR A47C23/002).CPC. | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/07/01 12:11 PM |
| L59 | 18341 | (A47C27/15,20,001,056,06,064,146,148 OR A47C27/064 OR A47C27/148 OR A47C27/144 OR A47C27/001 OR A47C27/062 OR A47C27/14 OR A47C27/05 OR A47C27/056 OR A47C7/35 OR A47C27/085 OR A47C7/18 OR A47C27/088 OR A47C27/16 OR A47C23/002).CPC. | (FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | OFF | OFF | 2021/07/01 12:11 PM |
| L60 | 30 | (tony and pearce).in. and purple | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/07/01 12:20 PM |
| L61 | 22 | L60 and elastomer$4 | (US-PGPUB; USPAT; USOCR) | OR | OFF | OFF | 2021/07/01 12:20 PM |
| L62 | 49 | ((US-20150223622-A1 OR US-20090246449-A1 OR US-20050223667-A1 OR US-20150231007-A1 OR US-20150217534-A1 OR US-20100192299-A1 OR US-20030135930-A1 OR US-20190390025-A1 OR US-20170189238-A1 OR US-20070050905-A1 OR US-20150305515-A1 OR US-20140130265-A1 OR US-20100005595-A1 | (USPAT; US-PGPUB; FPRS; USOCR; IBM_TDB; EPO; JPO; DERWENT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) | OR | ON | ON | 2021/11/16 02:26 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | OR US-20110302721-A1 OR US-20110197363-A1 OR US-20110179579-A1 OR US-20110173757-A1 OR US-20100319137-A1 OR US-20150096121-A1 OR US-20150067967-A1 OR US-20140373281-A1 OR US-20140208517-A1).did. AND PGPB.dbnm.) OR ((US-7730566-B2 OR US-8607387-B2 OR US-6523812-B1 OR US-7757322-B2 OR US-8910334-B2 OR US-8997279-B1 OR US-9032571-B2 OR US-7640611-B1 OR US-8307482-B2 OR US-5107558-A OR US-5613257-A OR US-5179742-A OR US-4685727-A OR US-4471020-A OR US-8006360-B2 OR US-4234981-A OR US-4213214-A OR US-6701557-B2 OR US-4504991-A OR US-4092752-A OR US-3512192-A OR US-8353072-B2 OR US-8429776-B2 OR US-7581271-B2 OR US-4866799-A OR US-8918934-B2 OR US-10357113-B2).did. AND USPT.dbnm.) | | | | | |
| L63 | 28 | L62 AND adhesive | (US-PGPUB; USPAT; USOCR; FIT (CN, FR, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2021/11/16 02:26 PM |
| L64 | 14 | elastomeric AND L62 | (US-PGPUB; USPAT; USOCR; FIT (CN, FR, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2021/11/16 03:12 PM |
| L65 | 1 | L62 AND spacer AND elastomeric | (US-PGPUB; USPAT; USOCR; FIT (CN, FR, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2021/11/16 07:30 PM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| L66 | 17916 | (A47C27/20 OR A47C27/001 OR A47C27/056 OR A47C27/06 OR A47C27/064 OR A47C27/146 OR A47C27/148 OR A47C27/15).cpc. | (US-PGPUB; USPAT; USOCR; FIT (CN, FR, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2021/11/16 07:36 PM |

## PE2E SEARCH - Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| N1 | 2805 | (A47C27/20 OR A47C27/001 OR A47C27/056 OR A47C27/06 OR A47C27/064 OR A47C27/146 OR A47C27/148 OR A47C27/15).cpc. | (US-PGPUB; USPAT) | OR | ON | ON | 2021/11/16 07:36 PM |
| N2 | 2805 | A47C27/20,001,056,06,064,146,148,15.cpc. | (US-PGPUB; USPAT) | OR | OFF | OFF | 2021/11/16 07:36 PM |
| N3 | 114 | B68G7/051.cpc. | (US-PGPUB; USPAT) | OR | OFF | OFF | 2021/11/16 07:36 PM |
| N4 | 0 | (mattress AND coil AND base AND elastomeric AND stabilization AND slip AND lower AND upper AND bottom AND cushioning AND casing AND outer).clm. | (US-PGPUB; USPAT) | OR | OFF | OFF | 2021/11/16 07:42 PM |

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

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| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

| | | |
|---|---|---|
| | 1 | CHINESE NATIONAL INTELLECTUAL PROPERTY ADMINISTRATION, "Second Office Action," Chinese Application No. 201810811684.1, July 5, 2021 |
| | 2 | CANADIAN INTELLECTUAL PROPERTY OFFICE, "Examiner's Report," Canadian Application No. 3,084,510, June 25, 2021 |
| | 3 | EUROPEAN PATENT OFFICE, "Communication pursuant to Article 94(3) EPC", European Application No. 18812494.5, May 3, 2021 |

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**EXAMINER SIGNATURE**

| | | | |
|---|---|---|---|
| Examiner Signature | /MORGAN J MCCLURE/ | Date Considered | 11/16/2021 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

✓ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

✓ See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2021-08-03 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

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Doc code: IDS
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| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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| | 2 | 2010530764 | JP | A | 2010-09-16 | An | Corresponds to WO2009048209 | ☒ |
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| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2021-11-10 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

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(71) Applicant and
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(74) Agent: **CHUNG, Tae Ryoun**; 12th Fl, Hyundai Jeonwon Officetel 1589-7, Socho-dong, Socho-gu, Seoul 137-873 (KR).

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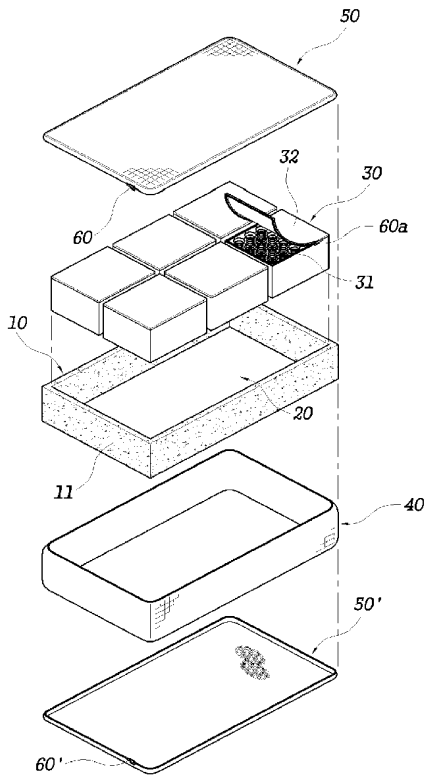
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**Published:**
— *with international search report*

*[Continued on next page]*

(54) **Title:** A MATTRESS

[Fig. 1]




(57) **Abstract:** A bed mattress is provided for employing a plurality of cushion elements (30) to be arranged in different portions of the mattress divided corresponding to the user's body parts and have appropriate elasticity for the corresponding part of the user's body, which comprises a mattress frame (10) with an enclosing wall (11 ) for providing a mounting space (20) therein; a plurality of cushion elements (30) disposed in the mounting space (20) and forming a mattress body together with the mattress frame (10); a pad covering the periphery of the mattress body; and upper (50) and lower (50') cover pads with outer edges fastened (60, 60') respectively to the top and bottom edges of the side pad to enclose the upper and lower surface of the mattress body.

WO 2009/048209 A1

— *with amended claims*

# Description

# A MATTRESS

## Technical Field

[1] The present invention relates to a mattress, in particular, to a mattress with a frame including a plurality of cushion elements with different elasticity, which make it possible to selectively employ cushion elements appropriate for the user's respective body parts.

## Background Art

[2] It is not seldom for the conventional bed mattresses to be discarded as a whole, rather than to be repaired, when the cushion member has lost the elasticity, which varies according to the materials used, the accessories such as side pads and upper/lower cover pads are wholly or partially damaged, soiled or discolored, and so on. That's because all parts of the mattresses, namely the cushion member and the accessories, are integrated into one single body, making it not easy to repair a part or parts of the mattress.

## Disclosure of Invention

## Technical Problem

[3] Further, the conventional mattresses have almost the same elasticity over all the regions or areas thereof and thus, the degrees of compression are different depending on the body parts, heavy or light, when a user lies in the bed, making the mattress or its cushion member compressed under the weights of the users respective body parts, but the curve on the mattress made by the users body weight is not the same as the contour of the users body and thus some body parts, such as the neck and the waist, are not in contact with and supported by the mattress, but are kept apart off the mattress. This results in the user being unable to take or maintain his or her comfortable and relaxing posture lying on the mattress because of tension in the muscles of those parts.

[4] A mattress is disclosed in the Korean Utility Model No. 337232 designed to solve the above described problems, in which the mattress may be longitudinally divided into several portions corresponding to the body parts and having cushions of spring structures with different elasticity therein. The user, however, must change the entire mattress, if damaged, as the integral structure of the mattress makes its partial repair or change of a part or parts difficult or even impossible.

[5] Further, in case of the double bed, it is not sufficient for making a bed mattress comfortable to both of the male and female users, who have different physical sizes and constitutions, to provide the spring structures in different portions of the mattress with the varying elasticity.

## Technical Solution

[6] It is an object of the present invention to provide a mattress that allows its user to have a comfortable and relaxing sleep thereon by employing a plurality of cushion elements to be arranged in different portions of the mattress divided corresponding to the user's body parts and have appropriate elasticity for the corresponding part of the user's body in consideration of the age, gender, height, weight and other body constitutions of the user, in order to solve the problems of the conventional mattress as described above.

[7] It is another object of the present invention to provide a mattress having replaceable parts for easy maintenance of the bed and mattress and use for a prolonged period of time.

[8] According to an aspect of the present invention, a mattress comprises:

[9] a mattress frame with an enclosing wall for providing a mounting space therein;

[10] a plurality of cushion elements disposed in the mounting space and forming a mattress body together with the mattress frame;

[11] a side pad covering the periphery of the mattress body; and

[12] upper and lower cover pads with outer edges fastened respectively to the top and bottom edges of the side pad to enclose the upper and lower surfaces of the mattress body.

[13] According to another aspect of the invention, the mattress frame comprises a longitudinal division wall for dividing the mounting space into a pair of parallel divisional mounting spaces.

[14] According to still another aspect of the present invention, the mattress further comprises a lower cushion member with the same periphery as the mattress body comprising a mattress frame with or without one or more longitudinal or transverse division walls and a plurality of cushion elements as described above.

## Advantageous Effects

[15] Cushion elements of the mattress according to the present invention may be selected to have different elasticity, depending on the regions or areas of the mattress corresponding to the body parts and constitutions and the taste of the user of the bed provided with the mattress.

[16] Further, various parts of the mattress such as cushion elements and side, upper and lower cover pads may be detached for change or repair, leading to extended or prolonged mattress life.

## Brief Description of the Drawings

[17] The present invention will be described in detail with reference to the accompanying drawings, in which:

[18] FIG. 1 is an exploded perspective view of a mattress according to a first embodiment of the present invention,

[19] FIG. 2 is a side cross-sectional view of a part of the mattress shown in FIG. 1,

[20] FIG. 3 is a side cross-sectional view of a combination of an upper cover pad and an auxiliary cushion element of the mattress shown in FIG. 2,

[21] FIG. 4 is a side cross-sectional view of another example of the cushion element used in the mattress shown in FIG. 1,

[22] FIG. 5 is an exploded perspective view of a mattress according to a second embodiment of the invention,

[23] FIG. 6 is a front cross-sectional view of a mattress shown in FIG. 5,

[24] FIG. 7 is an exploded perspective view of a mattress according to a third embodiment of the invention,

[25] FIG. 8 is a side cross-sectional view of the mattress shown in FIG. 7,

[26] FIG. 9 is a side cross-sectional view of a modification of the mattress shown in FIG. 7,

[27] FIG. 10 is a side cross-sectional view of another modification of the mattress shown in FIG. 7,

[28] FIG. 11 is an exploded perspective view of a mattress according to a fourth embodiment of the invention,

[29] FIG. 12 is an exploded perspective view of a mattress according to a fifth embodiment of the invention,

[30] FIG. 13 is a side cross-sectional view of the mattress shown in FIG. 12,

[31] FIG. 14 is a side cross-sectional view of a mattress with two divisional mounting spaces of the mattress according to a modification of the first embodiment of the present invention, up and down in the longitudinal direction of the mattress,

[32] FIGS. 15 is a side cross-sectional views of the mattress according to another modification of the first embodiment of the present invention, having four divisional mounting spaces,

[33] FIG. 16 is a side cross-sectional view of another modification of the mattress according to the first embodiment of the invention, having six divisional mounting spaces,

[34] FIG. 17 is a side cross-sectional view of still another modification of the mattress according to the first embodiment of the invention, having eight divisional mounting spaces,

[35] FIG. 18 is a side cross-sectional view of a modification of the mattress according to the third embodiment of the invention, having nine divisional mounting spaces,

[36] FIGS. 19 to 21 are partial cross-sectional views of other examples of the enclosing wall and the division wall used in the mattress according to the present invention.

[37] FIG. 22 is a partially exploded perspective view of a mattress body of a modification of the mattress according to the fourth embodiment of the present invention, and

[38] FIG. 23 is a partial side cross-sectional view of the mattress body shown in FIG. 22.

## Mode for the Invention

[39] FIG. 1 is an exploded perspective view of a mattress according to a first embodiment of the invention, FIG. 2 is a side cross-sectional view of the mattress shown in FIG. 1, FIG. 3 is a side cross-sectional view of a combination of an upper cover pad and an auxiliary cushion element of the mattress shown in FIG. 2, and Fig. 4 is a side cross-sectional view of another example of the cushion element used in the mattress shown in Fig 1.

[40] The mattress according to first embodiment of the present invention comprises a mattress frame 10 having a rectangular enclosing wall 11 made of elastic urethane foam for providing a mounting space therein, six cushion elements 30 arranged in two rows in the mounting space and forming a mattress body together with the frame 10, a pair of auxiliary cushion elements 30 each comprising a bag 32 and a flat urethane foam 33 and disposed on or beneath the mattress body, a side pad 40 covering the periphery of the mattress body, and upper and lower cover pads 50, 50' respectively covering the auxiliary cushion elements 30 and fastened to the upper and lower ends of the side pad 40 by fasteners 60, 60' provided at the edge thereof.

[41] The cushion element 30 is a spring structure comprising a plurality of coil springs 31 packed in a cubical fabric bag 32 provided with a fastener 60a, while the auxiliary cushion elements 30 are respectively combined with and enclosed in the upper or lower cover pad 50, 50' and protective sheets 51 provided with a fastener 60a (see FIG. 2). Further, the bag 32 may not be used and the auxiliary cushion element 30 may be disposed only on the mattress body, or may not be employed at all.

[42] The rectangular wall 11 of the frame 10 may be of an integrally formed body or formed with four bar elements by bonding both ends of one to corresponding ends of the other, in which a bonding process is additionally needed and the bonded portions may be easily broken due to possible poor bonding quality or heavy load of long continuance. Therefore, preferably the frame is integrally formed or molded, or provided with thick and/or firm bonded portions. The outer sides of the cushion elements 30 disposed in two rows in the enclosing wall 20 are in close contact with the inner wall surfaces of the wall or the outer sides of the adjacent cushion elements so that they can function as one single cushion elements. Further, as described above, the cushion elements 30 may be made to have different elasticity, if needed, and parts of the auxiliary cushion elements 30 may also be made to have different elasticity.

[43] The cushion elements 30 shown are six in two rows in FIGs. 1 and 2, while the

mattress may desirably have four to eighteen cushion members 30 disposed in two rows.

[44] For a double bed, to be used by a male and a female, a husband and a wife, or an adult and a child, one side of the mattress is desirably provided with cushion elements 30 having lower elasticity and/or narrower widths than those disposed at the other side.

[45] In this embodiment, the spring structures are illustrated to use the coil springs 31, but the materials of the cushion elements 30 are not limited thereto and, as shown in FIG. 4, a spring structure may employ pocket springs 31, instead of the coil springs packed in a bag 32 provided with a fastener 60b.

[46] Further, similar to the frame, the cushion elements 30 may be formed of elastic sponge, such as urethane foam, and the auxiliary cushion elements 30 may also be formed of the same material as the cushion element, or natural or synthetic rubbers.

[47] FIGs. 5 and 6 are an exploded perspective view and a front cross-sectional view of a mattress according to a second embodiment of the present invention, respectively, in which a longitudinal division wall 21 of the same material as a mattress frame 10 is provided inside the frame 10 to divide a mounting space 20 into two parallel divisional mounting spaces 20.

[48] The mattress shown in FIGs. 5 and 6 may be suitable for a king-sized bed or a double bed. Further, because an outer side of each cushion element 30 is in contact with the division wall 21, which is relatively rigid as compared with the adjacent cushion elements 30, the shape of each cushion element is not easily deformed and thus maintained desirably firm.

[49] The division wall 21 may be provided by bonding both ends of an individual element of the same material as the wall of the frame 10 to the inner surfaces of the wall 11, while it is preferable that the division wall is integrally formed with the wall 11.

[50] Further, the number and elasticity of the cushion elements 30 mounted in the two parallel divisional mounting spaces 20 divided by the division wall 21 may be the same as in the first embodiment and will not be described in detail for this embodiment.

[51] FIG. 7 is an exploded perspective view of a mattress according to a third embodiment of the invention, FIG. 8 is a side cross-sectional view of the mattress shown in FIG. 7, and FIGs. 9 and 10 are side cross-sectional views showing modifications of the mattress shown in FIG. 7, in which the mattresses comprise a mattress frame 10 having a wall 11 and a mounting space 20 divided into three, five or seven divisional mounting spaces inside the frame 10 by two, four or six transverse division walls 21, a plurality of cushion elements 30, each of which is disposed in the corresponding divisional mounting spaces, a pair of auxiliary cushion members 30, a side pad 40, and upper and lower cover pads 50, 50'. The mounting space 20 are divided into three, five, or seven divisional mounting spaces 20a, 20b, 20c and 20d in the longitudinal direction

of the mattress or from the bottom to top thereof, the cushion elements have the same configuration as in the first and second embodiments, and the side pad and the upper and lower cover pads are fastened by a fastener 60, as in the first and second embodiments.

[52] As the number of the divisional mounting spaces of the mounting space 20 increase from three to five, and from five to seven, the lengths of the divisional mounting spaces of the mattress decrease, while the divisional mounting spaces may preferably have different lengths from each other in consideration of the sizes and weights of the body parts of the particular user or an average user and also be provided with cushion elements of different elasticity.

[53] For the mattress shown in FIGs. 7 and 8, it is preferable to make the length of the first and central divisional mounting space 20a shorter than the adjacent second divisional mounting spaces 20b and dispose in the first divisional mounting space 20a a cushion element 30, having elasticity lower than the cushion elements for the second divisional mounting spaces 20b.

[54] Further, in case of the mattress shown in FIG. 9 as one of the modifications of the mattress of the third embodiment of the present invention, it has been found suitable for the constitutions of the human body, divided into the hip, trunk, legs, head and feet, to make the length of the first divisional mounting space 20a shorter than the adjacent second divisional mounting spaces 20b and the lengths of the outermost third divisional mounting spaces 20c shorter than the first divisional mounting space 20a and dispose in the first divisional mounting space 20a a cushion element 30, which has elasticity lower than that for the second divisional mounting spaces 20b, and cushion elements 30, having elasticity higher than that for the first divisional mounting space 20a and lower than that for second divisional mounting spaces 20b, in the third divisional mounting spaces 20c.

[55] In case of the mattress shown in FIG. 10, the other modification to the mattress of the third embodiment of the present invention, the first divisional mounting space 20a has a length longer than the adjacent second divisional mounting spaces 20b, the lengths of the divisional mounting spaces 20c at the outer sides of the second divisional mounting spaces 20b are longer than the first divisional mounting space 20a and the fourth divisional mounting spaces 20d at the outer sides of the third divisional mounting spaces 20c have lengths longer than the second divisional mounting spaces 20b, while the elasticity of the cushion element 30 disposed in the first divisional mounting space 20a is lower than the cushion elements 30 in the second divisional mounting spaces 20b, the elasticity of the cushion elements 30 in the third divisional mounting spaces 20c is higher than that in the first divisional mounting space 20a and lower than that in the second divisional mounting spaces 20b, and the cushion elements in the fourth di-

visional mounting spaces 20d have the elasticity higher than that in the first and third divisional mounting spaces 20a and 20c and lower than that in the second divisional mounting spaces 20b.

[56] The above configurations are for allowing the user to have a calm and comfortable sleep with the neck, waist and crooks of the knees and arms, which are less heavy, narrower or slimmer than other body parts, being appropriately in contact with and supported by the corresponding cushion elements as are other body parts such as the head, trunk, hip, legs and feet, because other mattresses having a mattress element with the uniform elasticity may not be pressed down to make its surface take the shape or profile of the users body and thus it is not possible for the relatively lighter, narrower or slimmer body parts like the waist, neck and the crooks of the knees and arms to lie at the full length comfortably on the mattress.

[57] By making the elasticity of the mattress elements different as described above, the cushion elements 30 in the divisional mounting spaces 20a, 20b, 20c and 20d are differently pressed down, depending on the corresponding parts of the human body when a user lies on the mattress. In other words, a cushion element in the first divisional mounting space 20a for the hip is pressed down to the highest degree and ones in the second divisional mounting space 20b at the top portion for the waist to the least, while one in the third divisional mounting space 20c at the top portion of the mattress for the trunk less than one in the first divisional mounting space 20a and more than one in the fourth divisional mounting space 20d at the top portion of the mattress for the head and ones in the rest of the second to fourth divisional mounting space 20b, 20c and 20d at the bottom portion of the mattress for legs and feet to the degree relative to the weight of each part of the legs and feet.

[58] As described above, by disposing the cushion elements having different elasticity that are roughly in inverse proportion to the weight of the corresponding part of the human body, the mattress, actually the cushion elements, is pressed down, taking the profile or shape of the human body, and supports all the body parts comfortably. The same elasticity and length of each pair of the cushion element in the divisional mounting spaces 20b, 20c and 20d, sequentially outwardly provided from the first divisional mounting space 20a, allow the user to use the mattress with the top and the bottom reversed, if necessary.

[59] Referring to FIG. 11 showing an exploded perspective view of a mattress according to a fourth embodiment of the present invention, shown is a mattress comprising a mattress frame 10 having six divisional mounting spaces 20a, 20b and 20c, in the mounting space 20 partitioned by a longitudinal division wall 21 and two transverse division walls. Cushion elements 30 are made by arranging coil springs 31 in a fabric bag 32.

[60] The mattress shown in FIG. 11 may be suitable for particularly a king-sized or double bed for simultaneous use by two persons with different body constitutions of man and woman, such as height or weight, as a pair of cushion elements 30 having different elasticity may be used in each pair of the right and left divisional mounting spaces 20a, 20b or 20c.

[61] In addition, the lengths of one or more pairs of the divisional mounting spaces 20a, 20b and 20c may be made different for two users of considerably different body constitutions.

[62] FIG. 12 is an exploded perspective view of a mattress according to a fifth embodiment of the present invention and FIG. 13 is a side cross-sectional view of the mattress shown in FIG. 12.

[63] Referring to FIGs. 12 and 13, the mattress comprises: a mattress frame 10 which comprises a rectangular wall 11 formed by four bar-shaped urethane foam elements with both ends thereof being bonded to corresponding ends of other urethane foam elements, divisional mounting spaces 20a and 20b divided by a longitudinal and four transverse division walls 21 and 21' of bar-shaped urethane foam element with both ends thereof bonded either to the inner surface of the wall 11 or to the side surface of the longitudinal division wall 21, and a bottom cover 53 for closing up the lower opening of the frame 10 therewith; six cushion elements 30 disposed in each of the six divisional mounting spaces 20a and 20b for forming a mattress body with the frame 10; a lower cushion member 30a disposed under the frame 10; a side pad 40 covering the periphery of the structure formed by combining the lower cushion member 30a with the mattress body; an upper cover pad 50 covering the mattress body and provided with a fastener 60 for fastening the edge of the upper cover pad 50 to the upper edge of the side pad 40, and a lower cover pad 50' sewn along the lower edge of the side pad 40 and receiving the mattress body and the lower cushion member 30a together with the side pad 40.

[64] The lower cushion member 30a is desirably thicker than that of the mattress body comprising the frame 10 and the cushion elements 30, or both of them may have the same thickness.

[65] The cushion elements 30 and the lower cushion member 30a are respectively formed by enclosing a resilient urethane foam 33 or 33" in fabric bags 32 or 32" provided with a zipper 60b or 60e, whereas the spring structures described above may also be used alternatively.

[66] A separation sheet 52 is disposed between the frame 10 and the lower cushion member 30a and may be opened or closed by a fastener 60c provided at the outer edge thereof and the inner surface of the side pad 40. Because the outer edge of the lower cover pad 50' is sewn around the lower edge of the side pad 40, it is possible to put the

lower cushion member 30a into/out of the space formed by the side pad and the lower cover pad.

[67] The bottom sheet 53 is provided to prevent the cushion elements 30 in the divisional mounting spaces 20a and 20b from dropping out, but is not an essential component of the frame or the mattress.

[68] It is preferable that the lower cushion member 30a has elasticity stronger than the cushion elements 30 of the strongest elasticity and also to make the elasticity of each of the cushion elements different for the divisional mounting spaces 20a and 20b, as described in respect to the mattress according to the first embodiment of the present invention. Further, as described in respect to the mattress according to the fourth embodiment of the present invention, the widths of the divisional mounting spaces 20a and 20b and the elasticity of the cushion elements 30 are desirably different according to the locations of the divisional mounting spaces, that is the left or the right.

[69] Further, the lower cover pad may be fastened to the side pad by a fastener as in the preceding embodiments of the present invention.

[70] FIGS. 14 to 17 are side cross-sectional views of mattresses according to the modifications of the first embodiment of the present invention, in which a mounting space 20 is divided into even number of the divisional mounting spaces, i.e. two, four, six or eight. Each of the divisional mounting spaces of the mattresses shown in the drawings are provided to have lengths adapted to the size of the corresponding body parts of the user, and the configuration and function of each of the component may be the same as in the first to third embodiments and thus will not be described in detail.

[71] Lengths of the divisional mounting spaces of the mattresses may be set to be different from FIGs.14 to 17, while those mattresses may be used by turning them face down, instead of turning the top and bottom portions as the mattresses described in respect to the second to fourth embodiments.

[72] FIG. 18 is a side cross-sectional view of a mattress with a mounting space divided into nine divisional mounting spaces according to a modification of the third embodiment of the present invention, which may be suitable for a very tall person or user. The mattress has a first mounting space 20a at the center and second to fifth divisional mounting space 20b ~ 20e sequentially formed upwardly from the first divisional mounting space 20a. The lengths of the divisional mounting spaces are set in consideration of the sizes of the corresponding body parts of the user, i.e. the hip, waist, trunk, neck, and head, while the divisional mounting spaces 20b to 20e at the bottom portion of the mattress may have the same lengths as the corresponding divisional mounting spaces at the top portion thereof.

[73] The wall 11 of the frame 10 of the mattress according to the above embodiments of the present invention should be made to have the same as or lower elasticity than con-

ventional mattresses and sufficient strength to retain its original shape and elasticity over the mattress life as well, while it is preferable for the division walls 21 and 21' to have elasticity the same as or lower than a cushion element 30 having least elasticity among the cushion elements so that all the cushion elements may be pressed down by the body parts of the user without being obstructed by the division walls 21 and 21'. However, the division walls should also have sufficient strength which should be retained over the mattress life, as described for the wall 11.

[74] Alternatively, the frame 10 may be made by placing pocket springs 10c in vertical holes 10b formed at regular intervals in a urethane foam wall member 10a as shown in FIG. 19, by embedding pocket springs in a urethane foam wall element 10a as shown in FIG. 20, or by embedding an assembly of pocket springs arranged in a row in a urethane foam wall element 10a as shown in FIG. 21, while it may be possible to use common coil springs instead of the pocket springs.

[75] Further, various kinds of sponge materials other than urethane foam may be used for making cushion elements, as far as they have appropriate elasticity.

[76] FIGs. 22 and 23 are a partial exploded perspective view and a partial side cross-sectional view of a mattress body of a modification of the mattress according to the fourth embodiment of the present invention (see FIG. 11), which comprises a mattress frame 10 and cushion elements 30. The frame 10 comprises an elastic base plate 12 which is formed of urethane foam and has a plurality of sequential holes 10b, pocket springs 10c with the lower portion thereof fixed in one of the holes 10b, a wall 11 and division walls 21 and 21' which define a first and a second divisional mounting spaces 20a and 20b, and a plastic bottom plate 13 attached to the bottom of the base plate 12. Further, the cushion elements 30 are placed in the divisional mounting spaces 20a and 20b.

[77] Referring to FIGs. 22 and 23, the pocket springs 10c are fixed in the holes 10b, not protruding downwardly from the base plate 12, because the holes 10b are closed by the bottom plate 13, while it may be possible to form holes 10b with the bottoms closed, for example, by using a thick base plate 12.

[78] Further, it is preferable to have the middle and/or upper portions of the pocket springs 10c coupled to the adjacent pocket springs 10c so that the frame may have strength enough to prevent the wall and the division walls from being swayed when the cushion elements 30 of the mattress are pressed down by the weight of the user.

[79] Further, requirements for the elasticity and the strength of the wall and division walls described above for other embodiments apply to the mattress of the FIGs. 22 and 23.

[80] The division walls 21 and 21' of the frame 10 may have the same height as the wall 11 as illustrated for the above embodiments, but also a height slightly lower than the wall 11, for example, a half or more than that of the wall 11, with the elasticity lower

than the wall 11.

[81] In addition to making the cushion elements 30 have the same height but different elasticity as described above, one cushion element or a combination of two or more adjacent cushion elements may have the edges of the same or about the same height and a round center portion with a gradually protruding or receding surface. Further, a divisional mounting space may have a plurality of cushion elements disposed therein.

[82] Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the present invention. Further, the present invention is not limited to the disclosed exemplary embodiments and the description in the above, but shall be restricted by the accompanying claims only.

# Claims

[1] A mattress comprising:
a mattress frame with an enclosing wall for providing a mounting space therein;
a plurality of cushion elements disposed in said mounting space and forming a mattress body together with said mattress frame in one or two rows;
a side pad covering the periphery of said mattress body; and
upper and lower cover pads with outer edges fastened respectively to the top and bottom edges of said side pad to enclose the upper and lower surfaces of said mattress body.

[2] The mattress as claimed in claim 1, further comprising:
a longitudinal division wall of said mattress frame for dividing said mounting space into a pair of parallel divisional mounting spaces, wherein one or more cushion elements are disposed in each of said divisional mounting spaces.

[3] The mattress as claimed in claim 1, further comprising:
one or more transverse division walls of said mattress frame for dividing said mounting space into two or more divisional mounting spaces, wherein one or more cushion elements are disposed in each of said divisional mounting spaces.

[4] The mattress as claimed in claim 1, further comprising:
a longitudinal division wall and one or more transverse division walls of said mattress frame for dividing said mounting space into four or more even numbers of divisional mounting spaces, wherein one or more cushion elements are disposed in each of said divisional mounting spaces.

[5] The mattress as claimed in claim 1, further comprising:
a lower cushion member having the same size of the periphery as said mattress body, disposed under said mattress body and covered by said side pad together with said mattress body.

[6] The mattress as claimed in any of the preceding claims, wherein said enclosing wall and/or said division wall or walls are integrally made of elastic sponge material or materials.

[7] The mattress as claimed in any of claims 1 to 5, wherein said enclosing wall and/or said division wall or walls are made of bar elements of elastic sponge material with the opposite ends thereof bonded to the corresponding opposite ends of the adjacent bar element of elastic sponge material.

[8] The mattress as claimed in any of claims 1 to 5, wherein said enclosing wall and/or said division wall or walls comprising a multiplicity of spring structures with the bottom portion thereof fixed corresponding mounting hole provided on a frame base.

[9] The mattress as claimed in any of claims 1 to 5, wherein said enclosing wall and/or said division wall or walls comprising a frame member of elastic sponge material and a multiplicity of spring structures are kept apart or adjoined to one another and embedded in said frame member.

[10] The mattress as claimed in claim 5, wherein said lower cushion member comprises a frame with or without one or more longitudinal or transverse division walls and a plurality of cushion elements enclosed in said frame.

[11] The mattress as claimed in claim 8, wherein said mattress frame further comprises a closing plate attached to the bottom of said frame base.

[12] The mattress as claimed in claim 8, wherein said spring structures are joined to the adjacent spring structures at the middle or upper parts thereof.

[13] The mattress as claimed in any of claims 1 to 5, wherein said mattress elements are of the same elasticity.

[14] The mattress as claimed in any of claims 1 to 5, wherein said mattress elements are of the different elasticity.

[15] The mattress as claimed in any of claims 1 to 5, wherein said cushion elements are made of elastic sponge material or a cylindrical spring structure or spring structures using coil springs or pocket springs.

[16] The mattress as claimed in claim 15, wherein said cushion element is packed in a fabric bag.

[17] The mattress as claimed in claim 1, 3 or 5, wherein said mounting space is divided into 2 to 9 divisional mounting spaces in a row.

[18] The mattress as claimed in claim 2, 3 or 4, comprising 2 rows of 2 to 9 of said divisional mounting spaces.

[19] The mattress as claimed in claim 17, comprising even number of said divisional mounting spaces.

[20] The mattress as claimed in claim 17, comprising odd number of said divisional mounting spaces.

[21] The mattress as claimed in claim 18, comprising even number of said divisional mounting spaces in each row.

[22] The mattress as claimed in claim 18, comprising odd number of said divisional mounting spaces in each row.

[23] The mattress as claimed in any of claims 19 to 22, wherein said divisional mounting spaces have the same length.

[24] The mattress as claimed in any of claims 19 to 22, wherein said divisional mounting spaces have different lengths.

[25] The mattress as claimed in claim 20 or 22, wherein one or more pairs of said divisional mounting spaces are sequentially provided outwardly of the central di-

visional mounting spaces and the same pair of said divisional mounting spaces have the same length.

[26] The mattress as claimed in claim 25, comprising three divisional mounting spaces of a first and central divisional mounting space and a pair of second divisional mounting spaces on top and bottom of said first divisional mounting space, wherein cushion elements in both of said second divisional mounting spaces have the same elasticity which is higher than that of the cushion element in said first and central divisional mounting space.

[27] The mattress as claimed in claim 26, wherein the length of said first divisinal mounting space is shorter than that of said second divisional mounting spaces.

[28] The mattress as claimed in claim 26 or 27, wherein the elasticity of the cushion element in said first divisional mounting space is lower than that of the cushion elements in said second divisional mounting spaces.

[29] The mattress as claimed in claim 25, comprising five divisional mounting spaces of a first and central divisional mounting space, a pair of second divisional mounting spaces on top and bottom of said first divisional mounting space and a pair of third divisional mounting spaces outside each of said second divisional mounting spaces in a row, wherein each pair of cushion elements in said second and third divisional mounting spaces have the same elasticity and the elasticity of cushion elements in said third divisional mounting spaces is different from cushion elements in said first and second divisional mounting spaces.

[30] The mattress as claimed in claim 29, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces and longer than that of said third divisional mounting spaces.

[31] The mattress as claimed in claim 29 or 30, wherein the elasticity of cushion elements in said first divisional mounting space is lower than that for said second divisional mounting spaces the elasticity of cushion elements in both of said third divisional mounting spaces is lower than said second divisional mounting spaces and higher than said first divisional mounting space.

[32] The mattress as claimed in claim 25, comprising seven divisional mounting spaces of a first and central divisional mounting spaces and three pairs of second, third and fourth divisional mounting spaces sequentially provided on top and bottom of said first divisional mounting space in a row, wherein cushion elements in each pair of said second to fourth divisional mounting spaces have the same elasticity.

[33] The mattress as claimed in claim 32, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces, the length of said third divisional mounting spaces is shorter than that of said

first divisional mounting space and said fourth divisional mounting spaces have the length shorter than that of said second divisional mounting spaces.

[34] The mattress as claimed in claim 32 or 33, wherein the elasticity of the cushion element in said first divisional mounting space is lower than that for said second divisional mounting spaces, the elasticity of the cushion elements for said third divisional mounting spaces is higher than that for said first divisional mounting space and lower than that for said second divisional mounting spaces and the elasticity of cushion members in both of said fourth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in said second divisional mounting spaces.

[35] The mattress as claimed in claim 25, comprising nine divisional mounting spaces of a first and central divisional mounting spaces and four pairs of second, third, fourth and fifth divisional mounting spaces sequentially provided on top and bottom of said first divisional mounting space in a row, wherein cushion elements in each pair of said second to fifth divisional mounting spaces have the same elasticity.

[36] The mattress as claimed in claim 35, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces, the length of said third divisional mounting spaces is shorter than that of said first divisional mounting space and the same as that of said fifth divisional mounting spaces and said fourth divisional mounting spaces have the length shorter than that of said second divisional mounting spaces.

[37] The mattress as claimed in claim 35 or 36, wherein the elasticity of the cushion element in said first divisional mounting space is lower than that for said second divisional mounting spaces, the elasticity of the cushion elements for said third divisional mounting spaces is higher than that for said first divisional mounting space and lower than that for said second divisional mounting spaces, the elasticity of cushion members in both of said fourth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in said second divisional mounting spaces and the elasticity of cushion members in both of said fifth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in said second and fourth divisional mounting spaces.

[38] The mattress as claimed in claim 1, 2 or 4, wherein one or more of left cushion elements have the elasticity different from that of the adajacent right cushion element.

[39] The mattress as claimed in any of claims 1 to 5, comprising one or two auxilliary

cushion elements made of an elastic sponge material or a spring structure comprising coil springs or pocket springs and disposed on and/or under said mattress body.

[40] The mattress as claimed in claim 39, wherein said lower mattress member is formed of an elastic sponge material or a spring structure made of coil springs or pocket springs.

[41] The mattress as claimed in claim 5 or 39, comprising a separation sheet disposed between said mattress body and said lower cushion member.

[42] The mattress as claimed in claim 5, wherein said mattress frame comprises a closing sheet attached thereunder.

[43] The mattress as claimed in claim 5 or 39, wherein said lower cushion member has a higher elasticity than said mattress body.

[44] The mattress as claimed in any of claims 1 to 5, wherein a fastener is provided to separably couple said side pad and said upper cover pad together.

[45] The mattress as claimed in claim 44, wherein a fastener is provided to separably couple said side pad and said lower cover pad together.

## AMENDED CLAIMS received by the International Bureau on 09 February 2009 (09.02.2009)

【CLAIMS】

【Claim 1】

A mattress comprising:

a mattress frame with an enclosing wall with at least two transverse division walls and with or without a longitudinal division wall, made of elastic material, for forming three divisional mounting spaces of a first and central divisional mounting space and a pair of second divisional mounting spaces, provided outwardly of said first and central divisional mounting space, in one or two rows;

one or more cushion elements disposed in each of said divisional mounting spaces and forming a mattress body together with said mattress frame;

a side pad covering the periphery of said mattress body; and

upper and lower cover pads with outer edges fastened respectively to the top and bottom edges of said side pad to enclose the upper and lower surfaces of said mattress body,

wherein said cushion elements in both of said second divisional mounting spaces have the same elasticity which is higher than that of the cushion element in said first and central divisional mounting space.

【Claim 2】

The mattress as claimed in claim 1, further comprising:

a lower cushion member having the same size of the periphery as said mattress body, disposed under said mattress body and covered by said side pad together with said mattress body.

【Claim 3】

The mattress as claimed in claim 1 or 2, wherein said enclosing wall and/or said division wall or walls are integrally made of elastic sponge material or materials.

【Claim 4】

The mattress as claimed in claim 1 or 2, wherein said enclosing wall and/or said division wall or walls are made of bar elements of elastic sponge material with the opposite ends thereof bonded to the corresponding opposite ends of the adjacent bar element of elastic sponge material.

【Claim 5】

The mattress as claimed in claim 1 or 2, wherein said enclosing wall and/or said division wall or walls comprising a multiplicity of spring structures with the bottom portion thereof fixed in corresponding mounting hole provided on a frame base.

【Claim 6】

The mattress as claimed in claim 1 or 2, wherein said enclosing wall and/or said division wall or walls comprise a frame member of elastic sponge material and a multiplicity of spring structures are kept apart or adjoined to one another and embedded in said frame member.

【Claim 7】

The mattress as claimed in claim 2, wherein said lower cushion member comprises a frame with or without one or more longitudinal or transverse division walls and a plurality of cushion elements enclosed in said frame.

【Claim 8】

The mattress as claimed in claim 5, wherein said mattress frame further comprises a closing plate attached to the bottom of said frame base.

【Claim 9】

The mattress as claimed in claim 5, wherein said spring structures are joined to the adjacent spring structures at the middle or upper parts thereof.

【Claim 10】

The mattress as claimed in claim 1 or 2, wherein said cushion elements are made of elastic sponge material or a cylindrical spring structure or spring structures using coil springs or pocket springs.

【Claim 11】

The mattress as claimed in claim 10, wherein said cushion element is packed in a fabric bag.

【Claim 12】

The mattress as claimed in claim 1, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces, which have the same length.

【Claim 13】

The mattress as claimed in claim 1, wherein the length of said first divisional mounting space is the same as that of said second divisional mounting spaces, which have the same length.

【Claim 14】

The mattress as claimed in claim 1, further comprising a pair of third divisional mounting spaces outside each of said second divisional mounting spaces in one or two rows, wherein each pair of cushion elements in said third divisional mounting spaces have the same elasticity and the elasticity of cushion elements in said third divisional mounting spaces is different from cushion elements in said first and second divisional mounting spaces.

【Claim 15】

The mattress as claimed in claim 14, wherein the elasticity of cushion elements in said third divisional mounting spaces is lower than cushion elements in said second divisional mounting spaces and higher than cushion elements in said first divisional mounting space.

【Claim 16】

The mattress as claimed in claim 14 or 15, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces and longer than that of said third divisional mounting spaces, which have the same length.

【Claim 17】

The mattress as claimed in claim 14, further comprising a pair of fourth divisional mounting spaces provided on top and bottom of said third divisional mounting space in one or two rows, wherein cushion elements in each pair of said fourth divisional mounting spaces have the same elasticity.

【Claim 18】

The mattress as claimed in claim 17, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces, the length of said third divisional mounting spaces is shorter than that of said first divisional mounting space and said fourth divisional mounting spaces have the length shorter than that of said second divisional mounting spaces.

【Claim 19】

The mattress as claimed in claim 17 or 18, wherein the elasticity of the cushion element in said first divisional mounting space is lower than that for said second divisional mounting spaces, the elasticity of the cushion elements for said third divisional mounting spaces is higher than that for said first divisional mounting space and lower than that for said second divisional mounting spaces and the elasticity of cushion members in said fourth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in said second divisional mounting spaces.

【Claim 20】

The mattress as claimed in claim 17, further comprising a pair of fifth divisional mounting spaces provided on top and bottom of said fourth divisional mounting spaces in one or two rows, wherein cushion elements in each pair of fifth divisional mounting spaces have the same elasticity.

【Claim 21】

The mattress as claimed in claim 20, wherein the length of said first divisional mounting space is shorter than that of said second divisional mounting spaces, the length of said third divisional mounting spaces is shorter than that of said first divisional mounting space and the same as that of said fifth divisional mounting spaces and said fourth divisional mounting spaces have the length shorter than that of said second divisional mounting spaces.

【Claim 22】

The mattress as claimed in claim 20 or 21, wherein the elasticity of the cushion element in said first divisional mounting space is lower than that for said second divisional mounting spaces, the elasticity of the cushion elements for said third divisional mounting spaces is higher than that for said first divisional mounting space and lower than that for said second divisional mounting spaces, the elasticity of cushion members in said fourth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in said second divisional mounting spaces and the elasticity of cushion members in said fifth divisional mounting spaces is higher than cushion elements in said first and third divisional mounting spaces and lower than cushion members in

said second and fourth divisional mounting spaces.

【Claim 23】

The mattress as claimed in claim 1, wherein one or more of the left cushion elements have the elasticity different from that of the adjacent right cushion element.

【Claim 24】

The mattress as claimed in claim 1, further comprising one or two auxilliary cushion elements made of an elastic sponge material or a spring structure comprising coil springs or pocket springs and disposed on and/or under said mattress body.

【Claim 25】

The mattress as claimed in claim 2, wherein said lower mattress member is formed of elastic sponge material or a spring structure made of coil springs or pocket springs.

【Claim 26】

The mattress as claimed in claim 2 or 25, further comprising a separation sheet disposed between said mattress body and said lower cushion member.

【Claim 27】

The mattress as claimed in claim 2, wherein said mattress frame comprises a closing sheet attached thereunder.

【Claim 28】

The mattress as claimed in claim 2 or 25, wherein said lower cushion member has a higher elasticity than said mattress body.

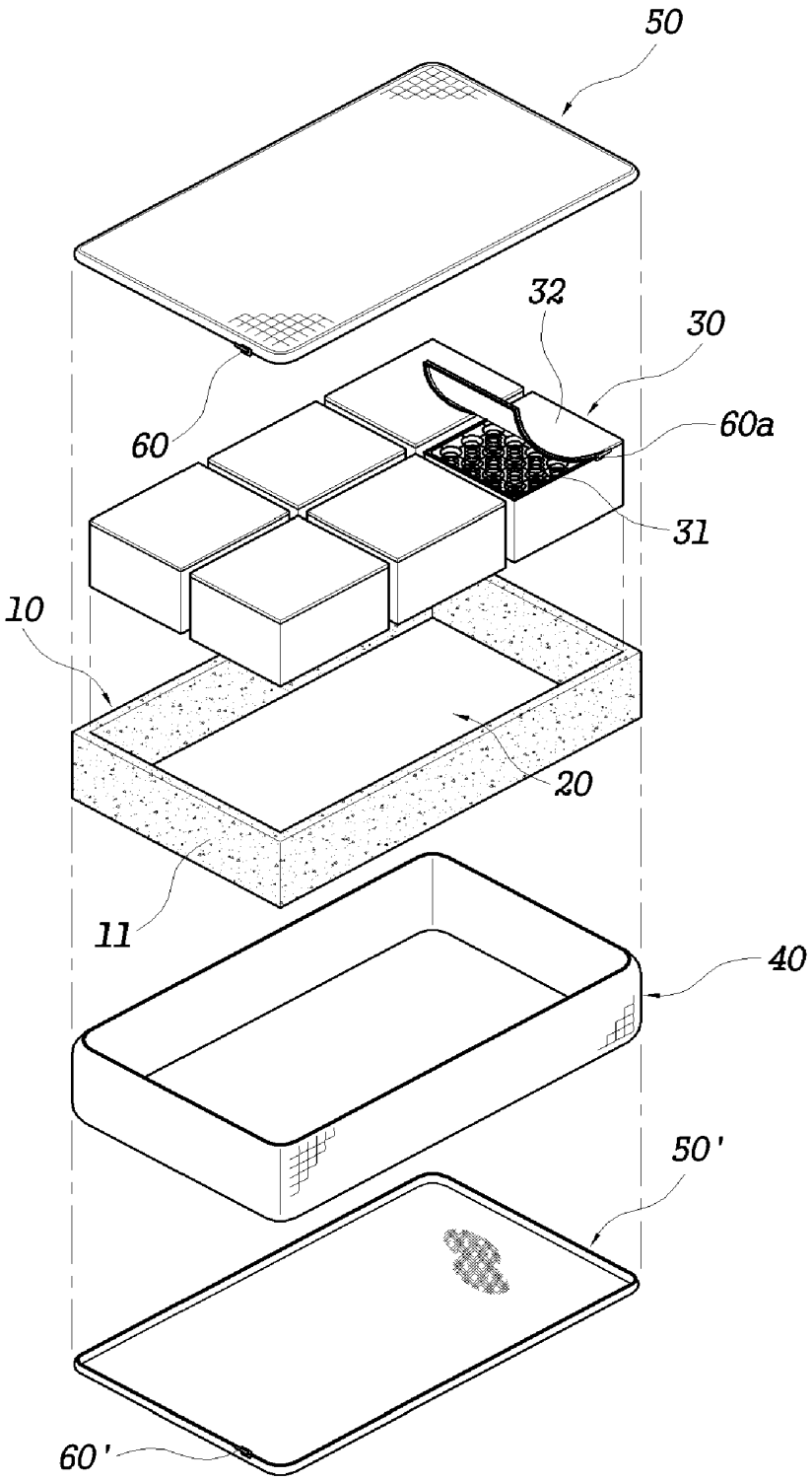
【Claim 29】

The mattress as claimed in claim 1, wherein a fastener is provided to separably couple said side pad and said upper cover pad together.

【Claim 30】

The mattress as claimed in claim 1 or 29, wherein a fastener is provided to separably couple said side pad and said lower cover pad together.

[Fig. 1]



[Fig. 2]

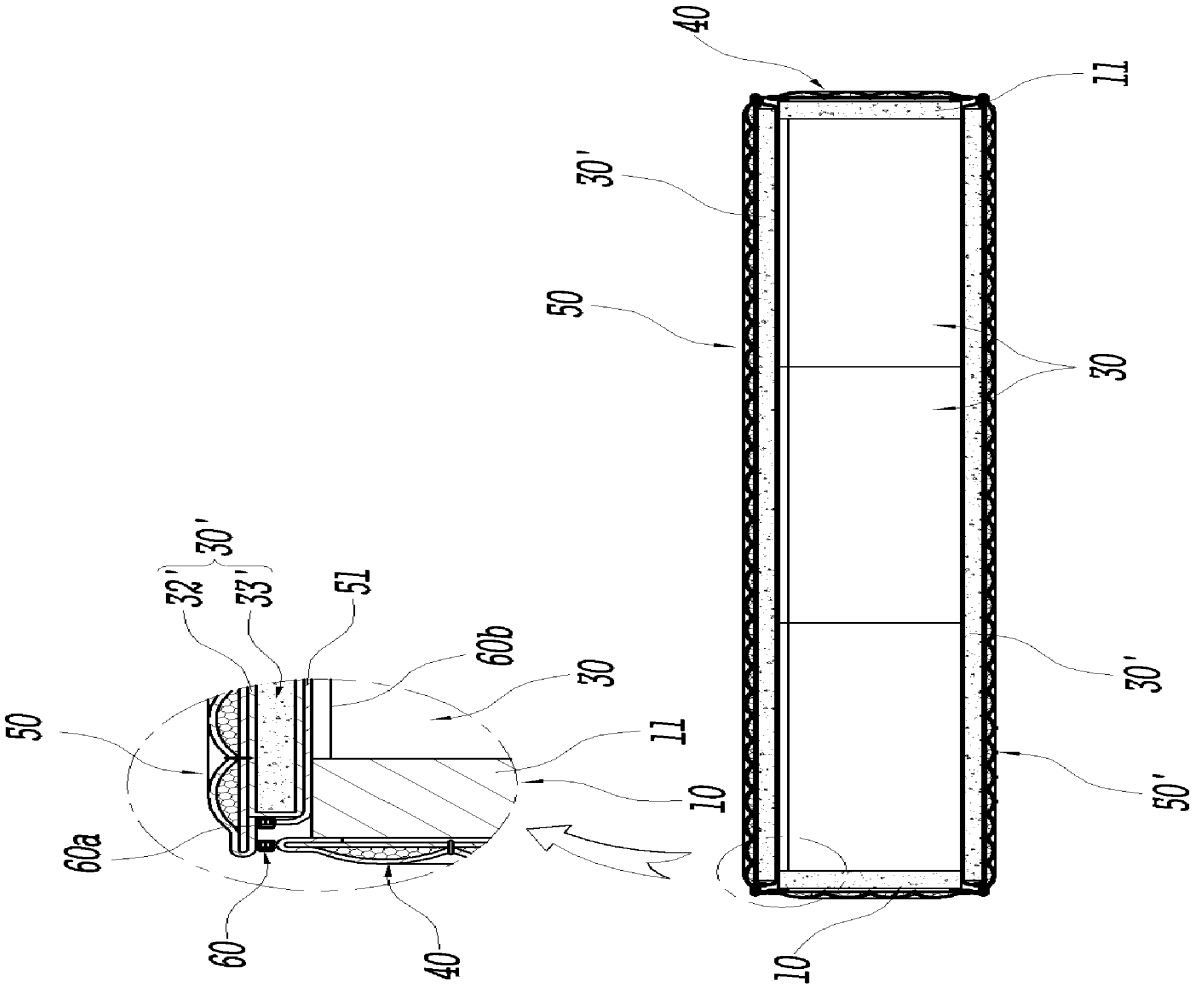
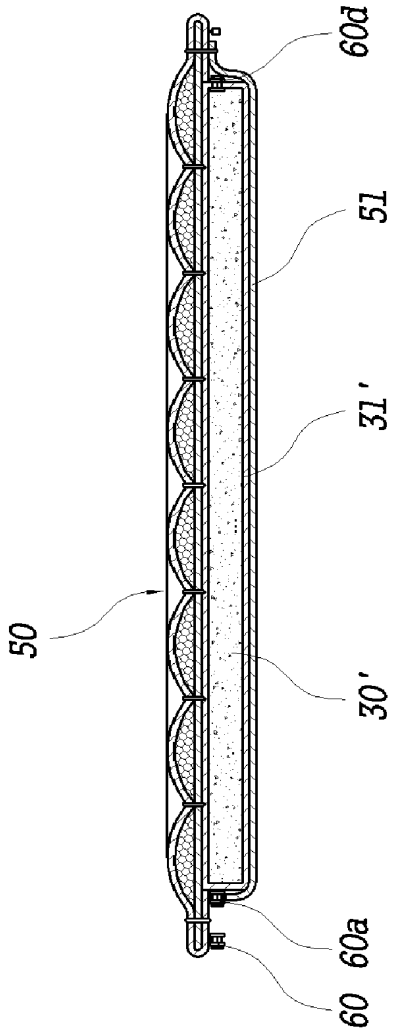
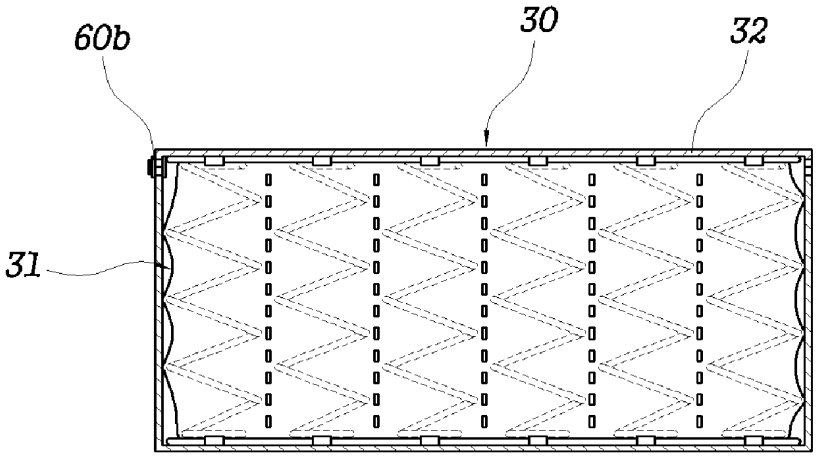



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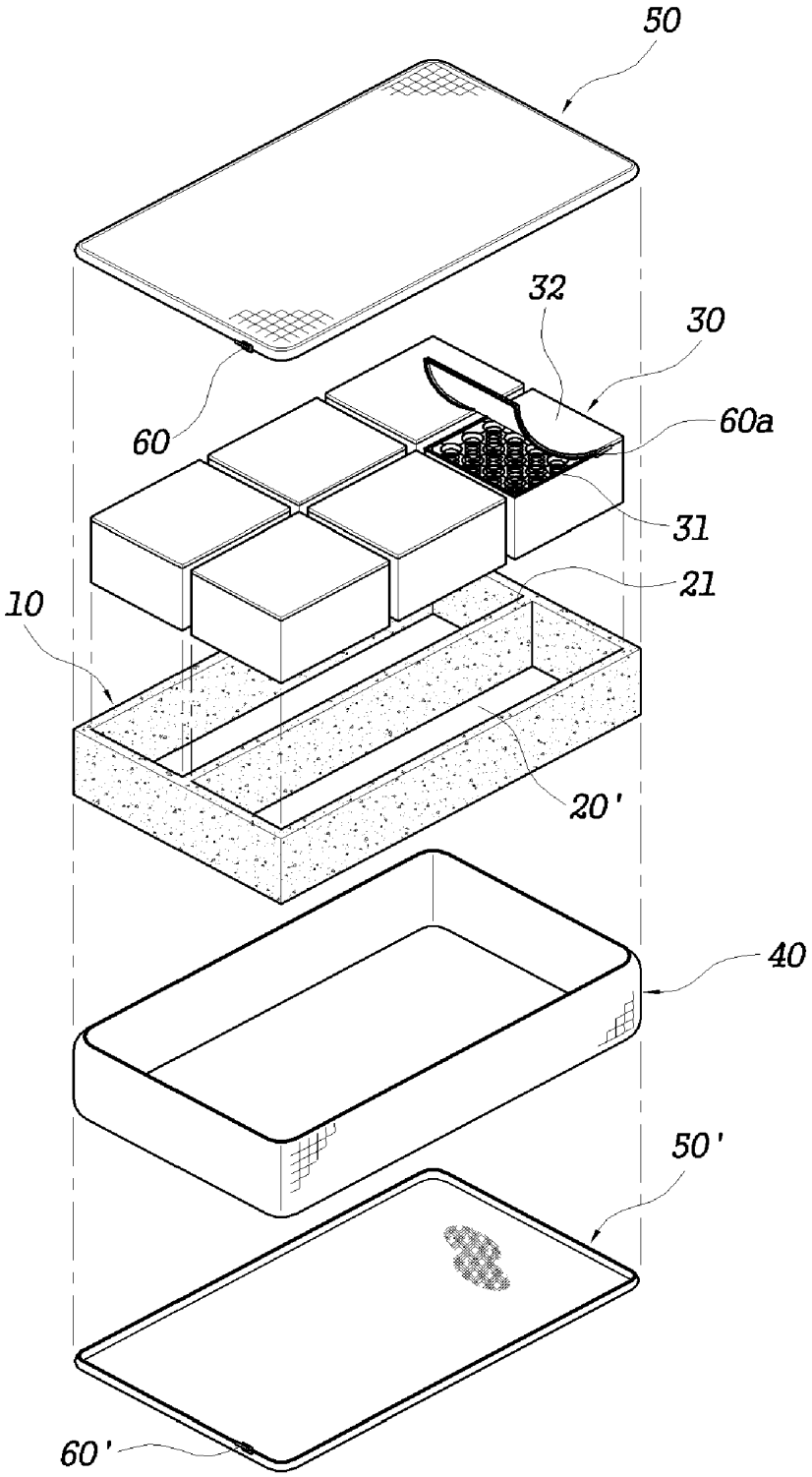
[Fig. 3]




[Fig. 4]



[Fig. 5]



[Fig. 6]

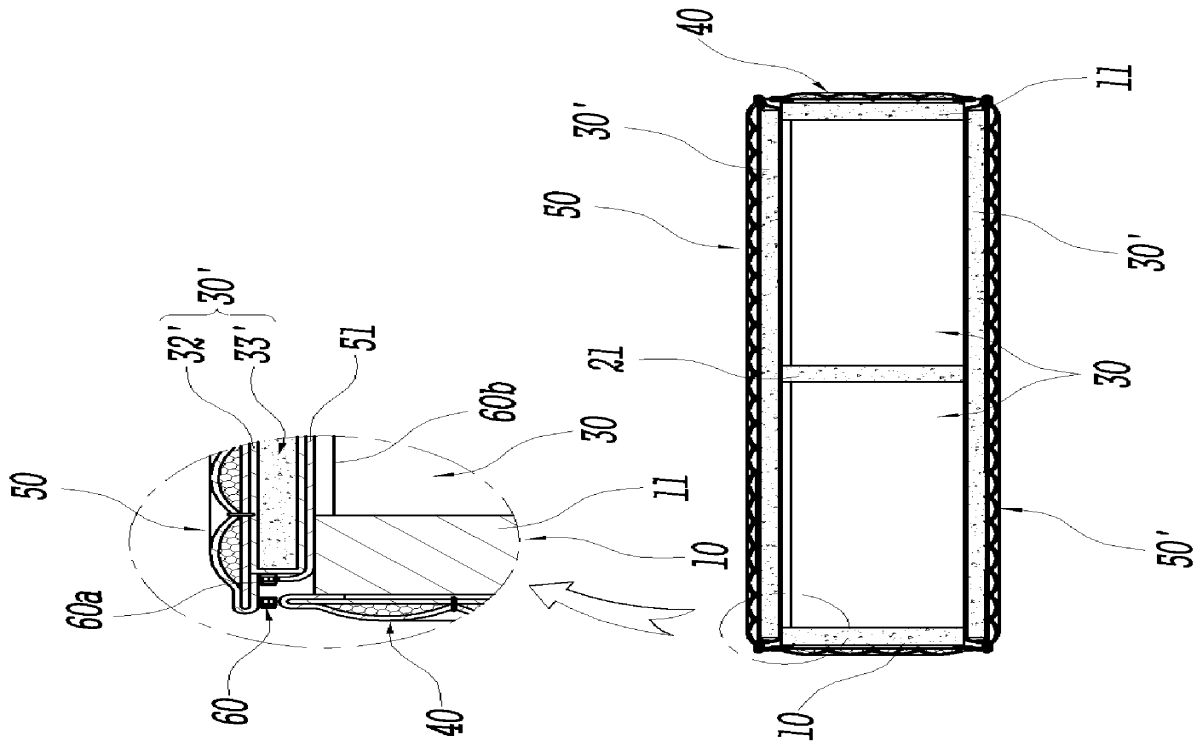
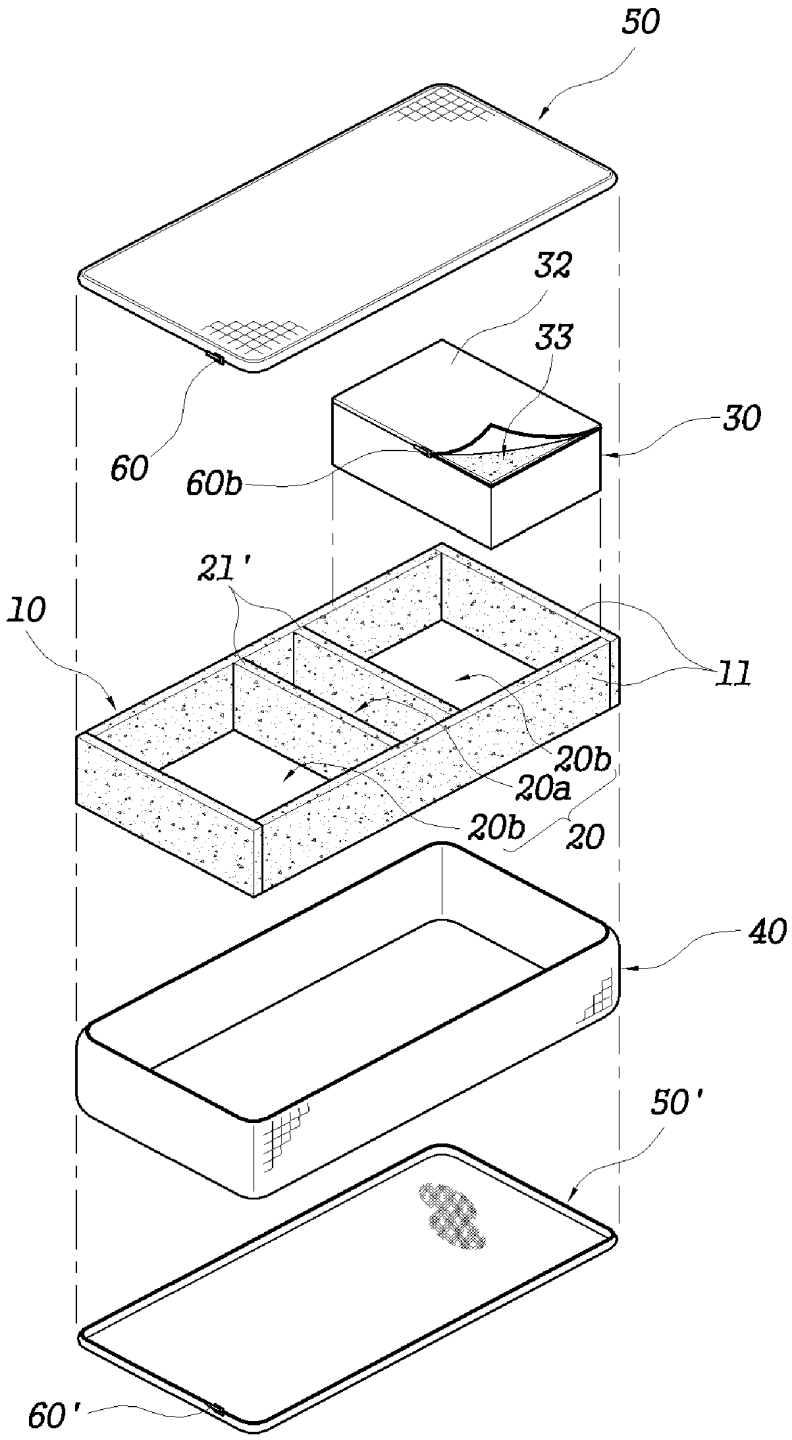
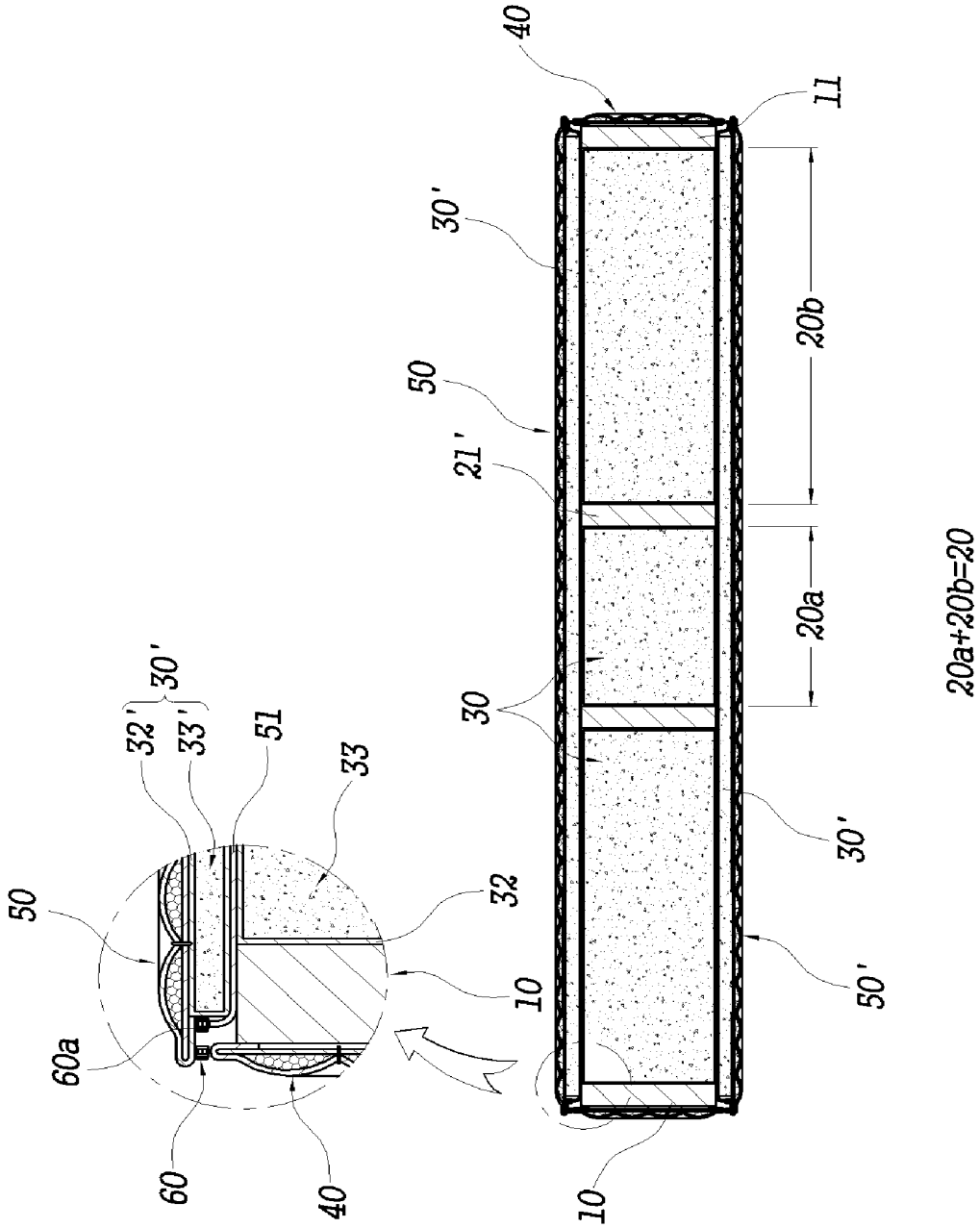



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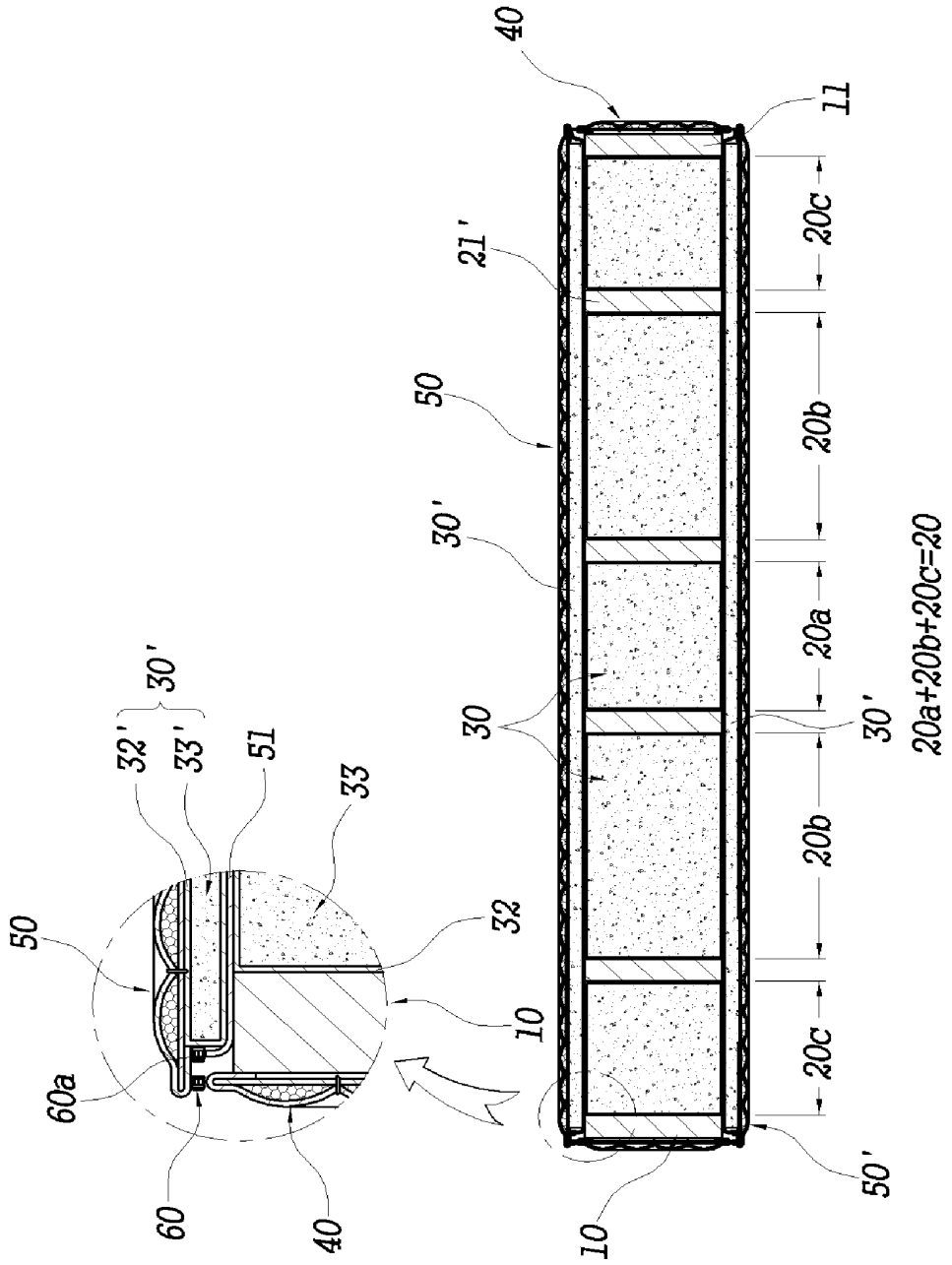
[Fig. 7]



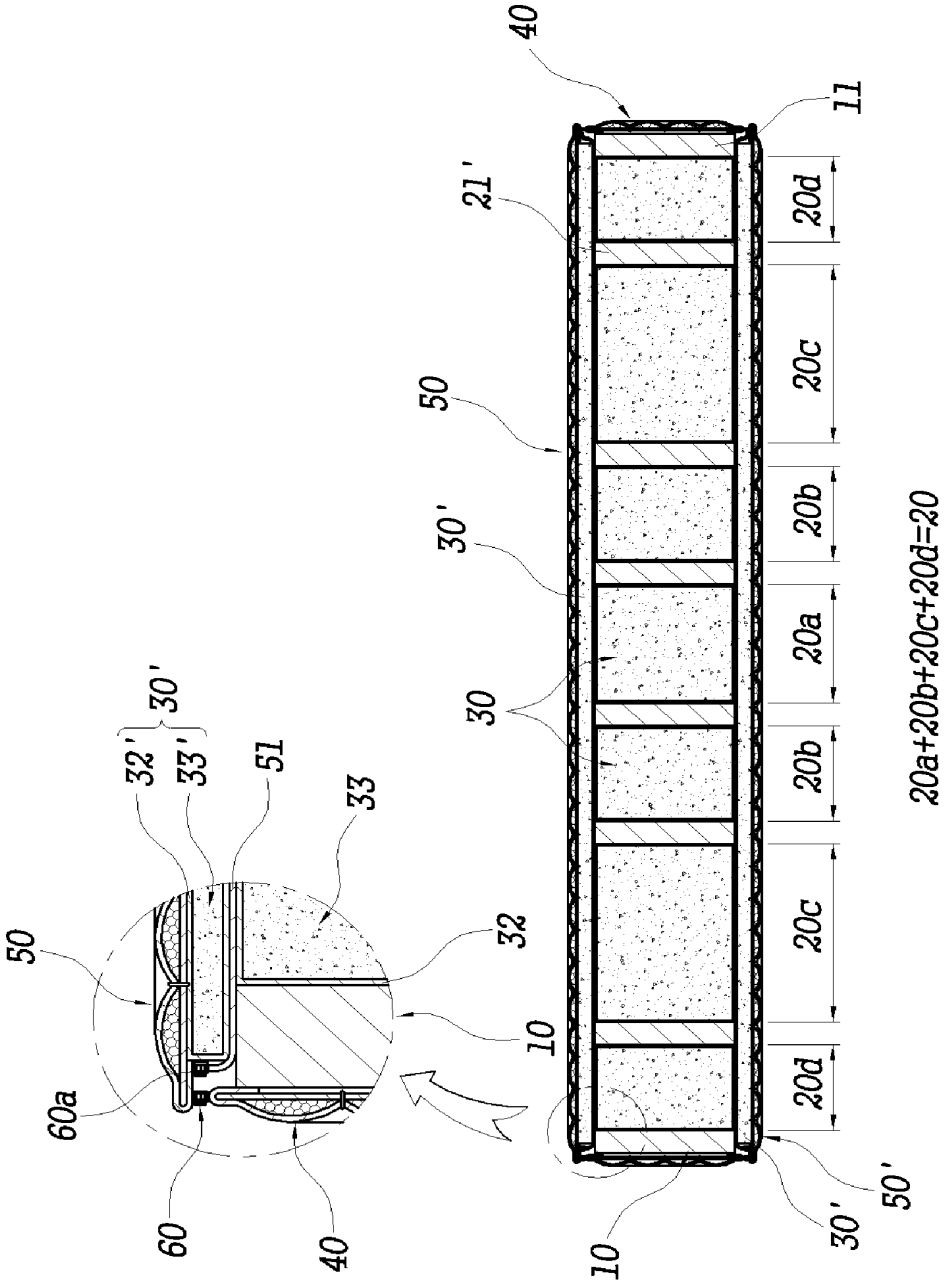
[Fig. 8]


40
11
30'
20b
50
21'
20a
20a+20b=20
30
30'
32'
33'
51
33
50
32
10
50'
60a
60
40
10

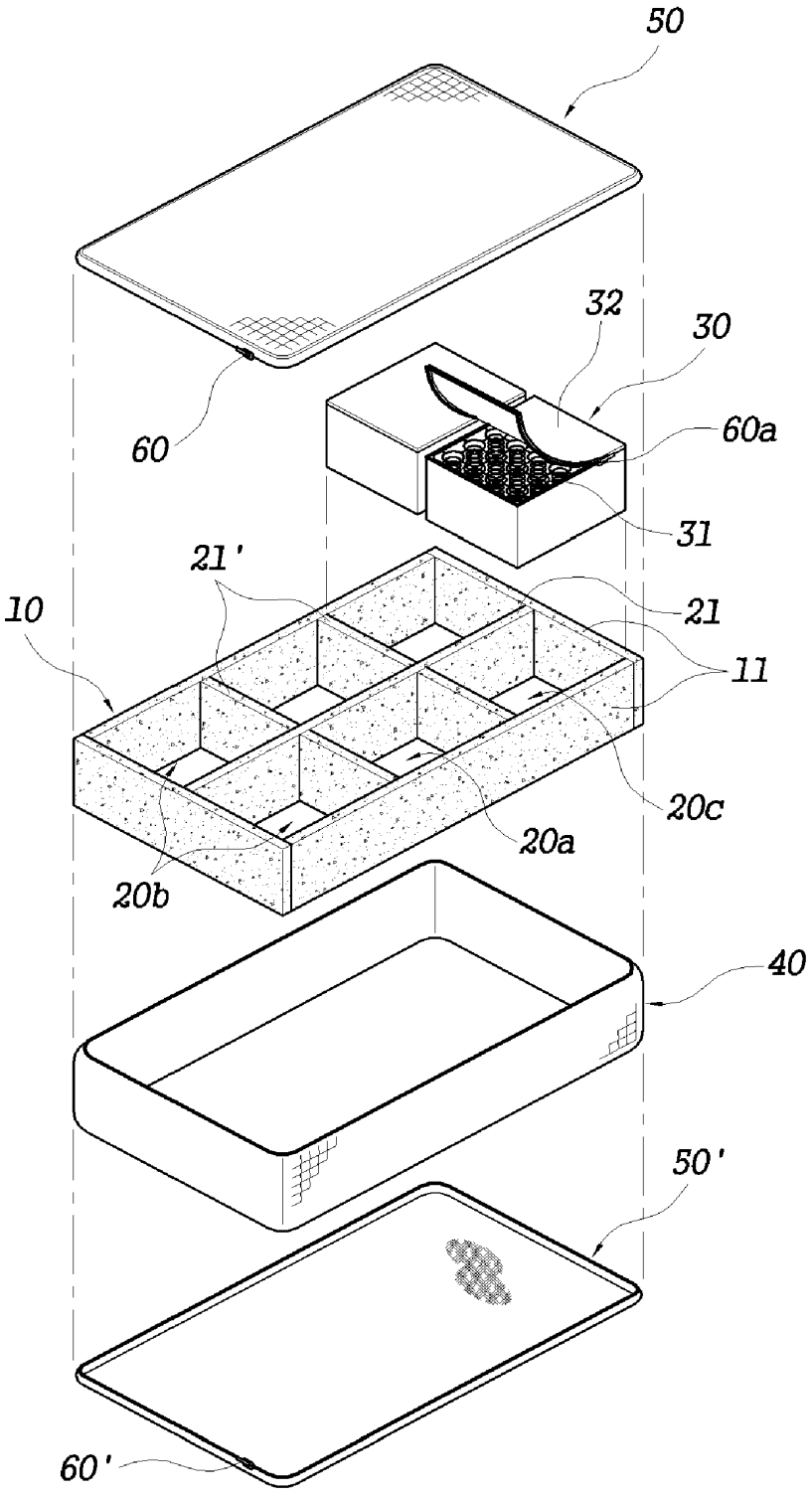
[Fig. 9]


40
11
21'
20c
50
20b
30'
20a
20a+20b+20c=20
30
30'
20b
20c
50'
10
30'
32'
33'
51
33
32
50
10
60a
60
40

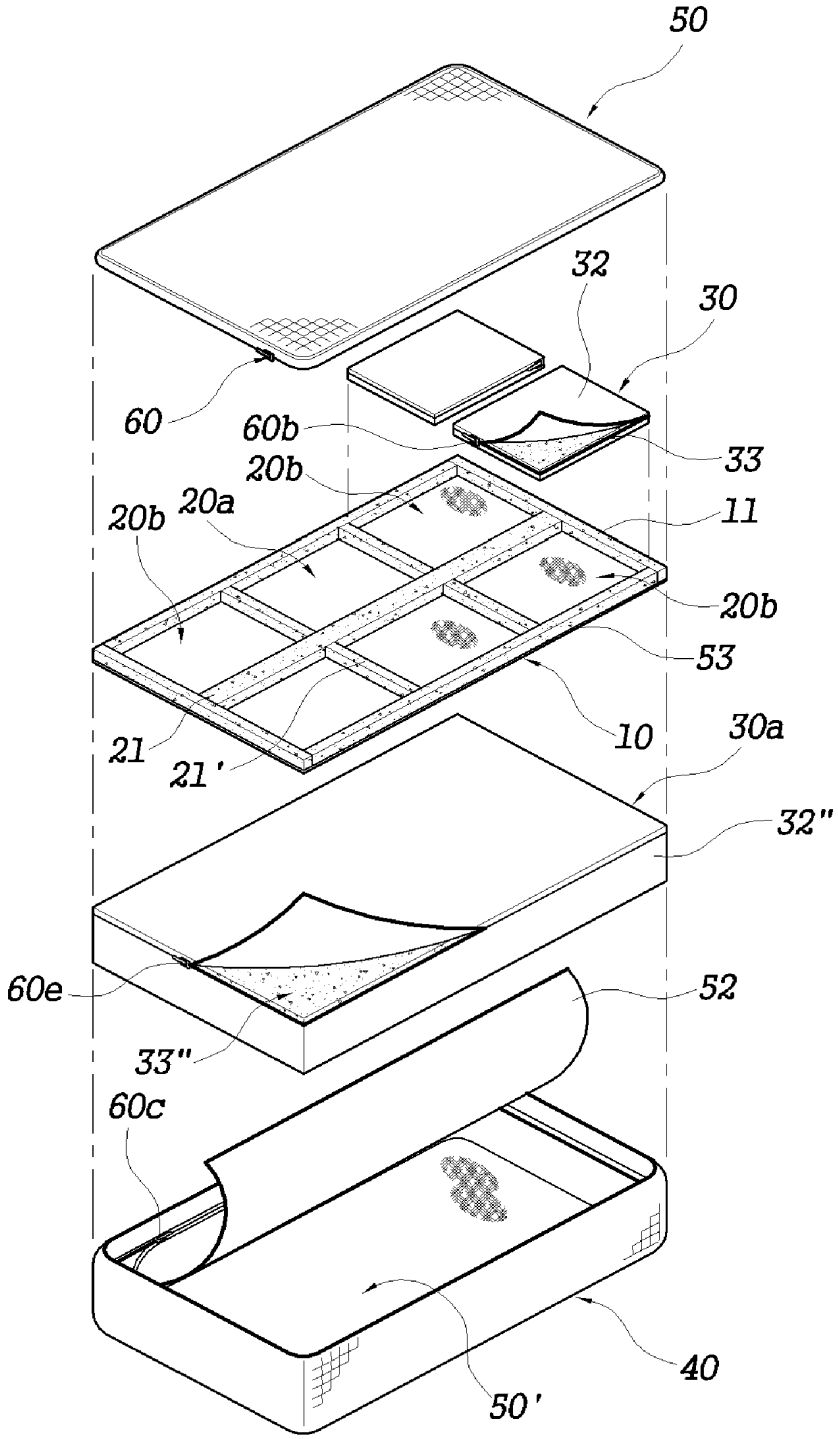
[Fig. 10]


40
11
21'
20d
20c
50
20b
30'
20a
30
20b
20c
20d
20a+20b+20c+20d=20
30'
32'
33'
51
33
50
32
10
60a
60
40
10
30'
50'

[Fig. 11]



[Fig. 12]


50
32
30
60
60b
33
20b
20a
20b
11
20b
53
10
21
21'
30a
32"
60e
52
33"
60c
40
50'

[Fig. 13]

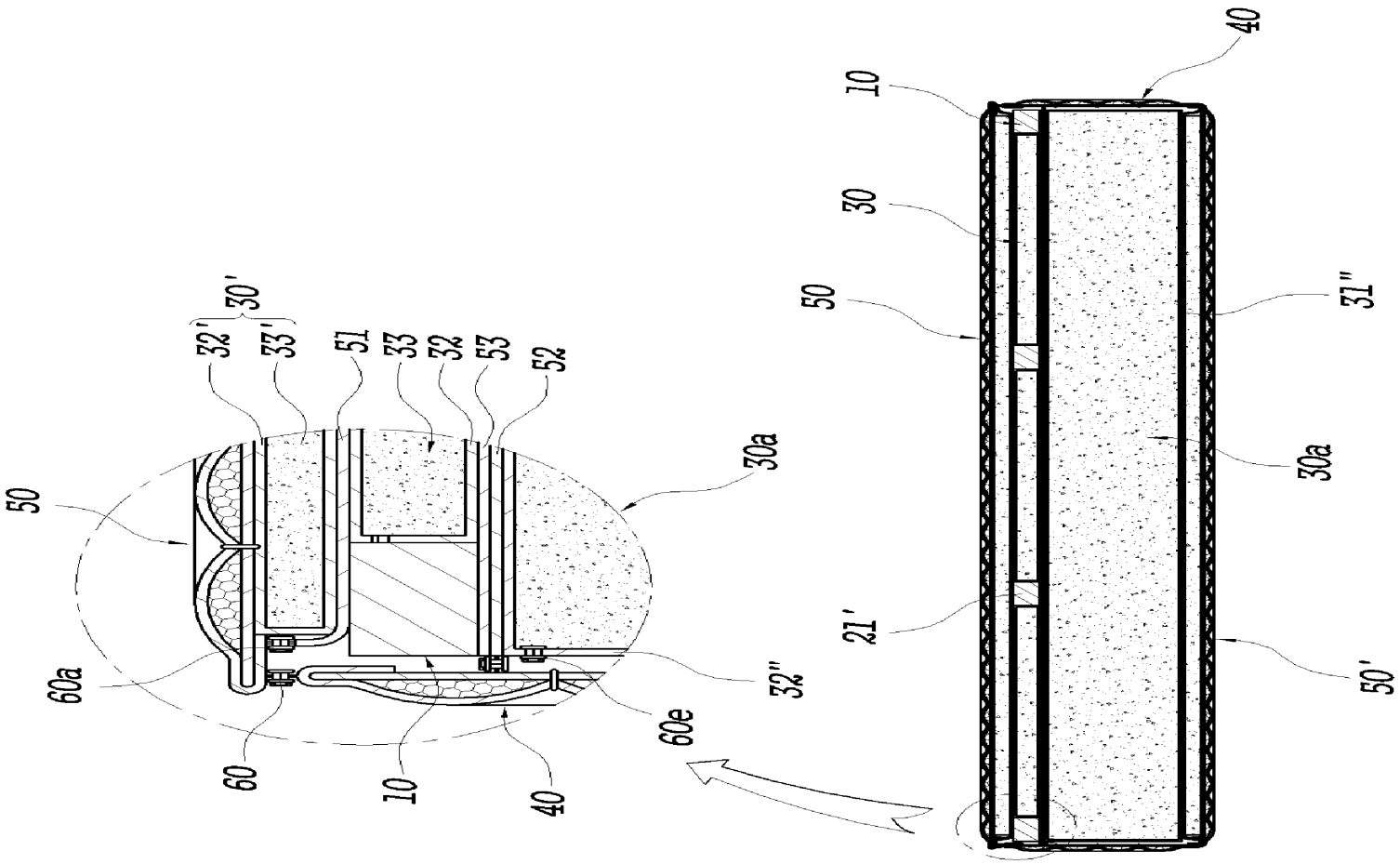
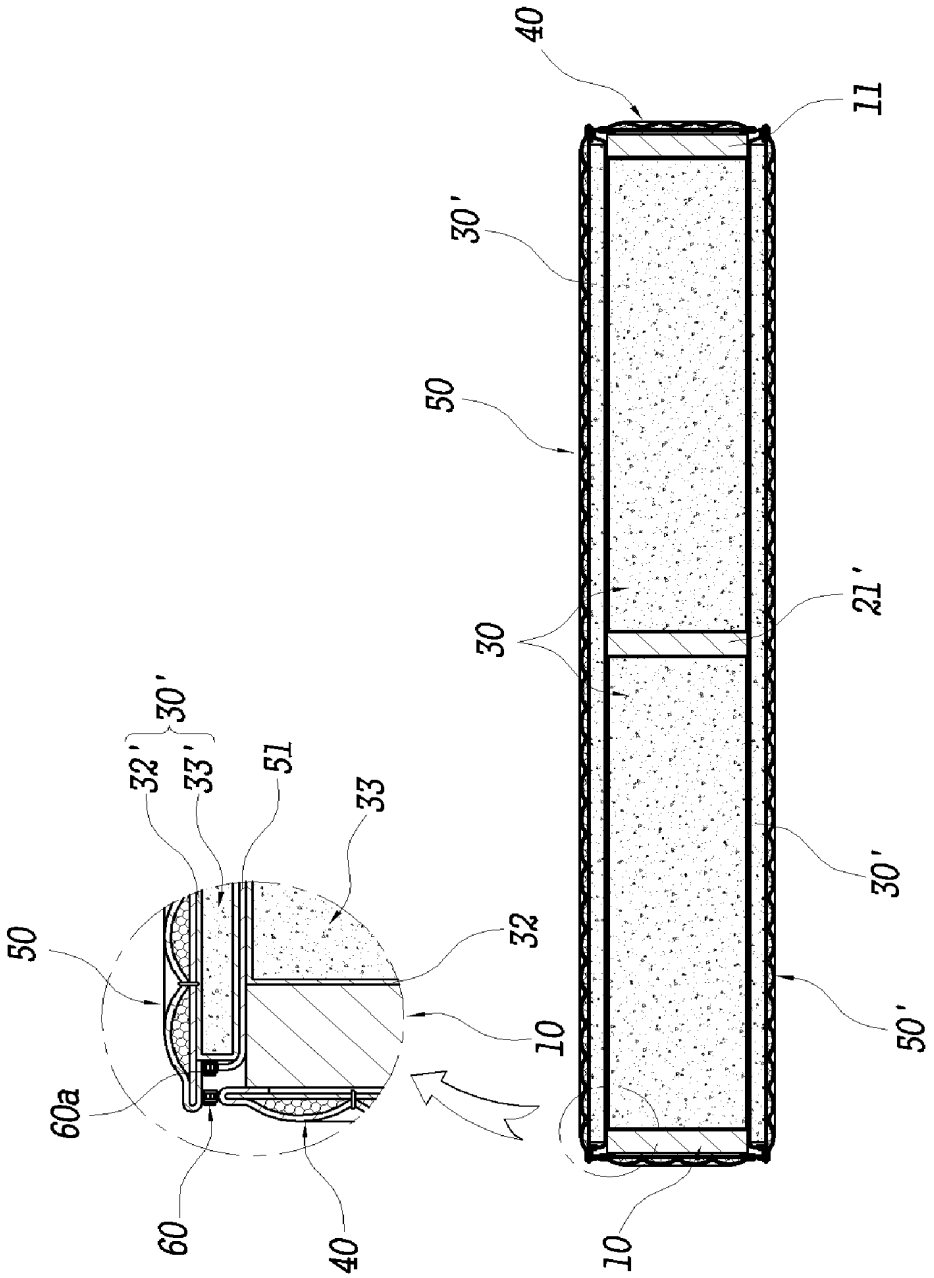
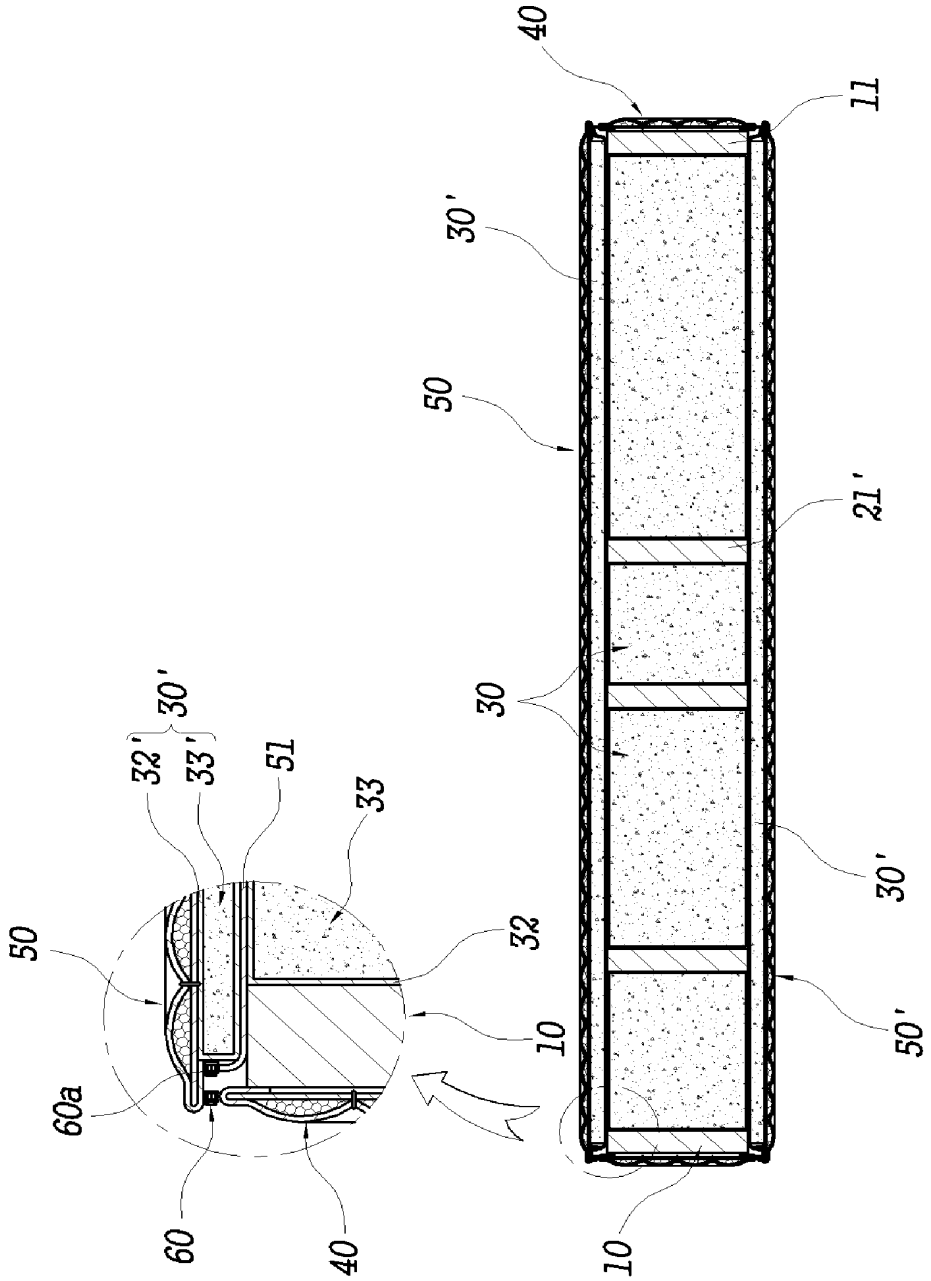



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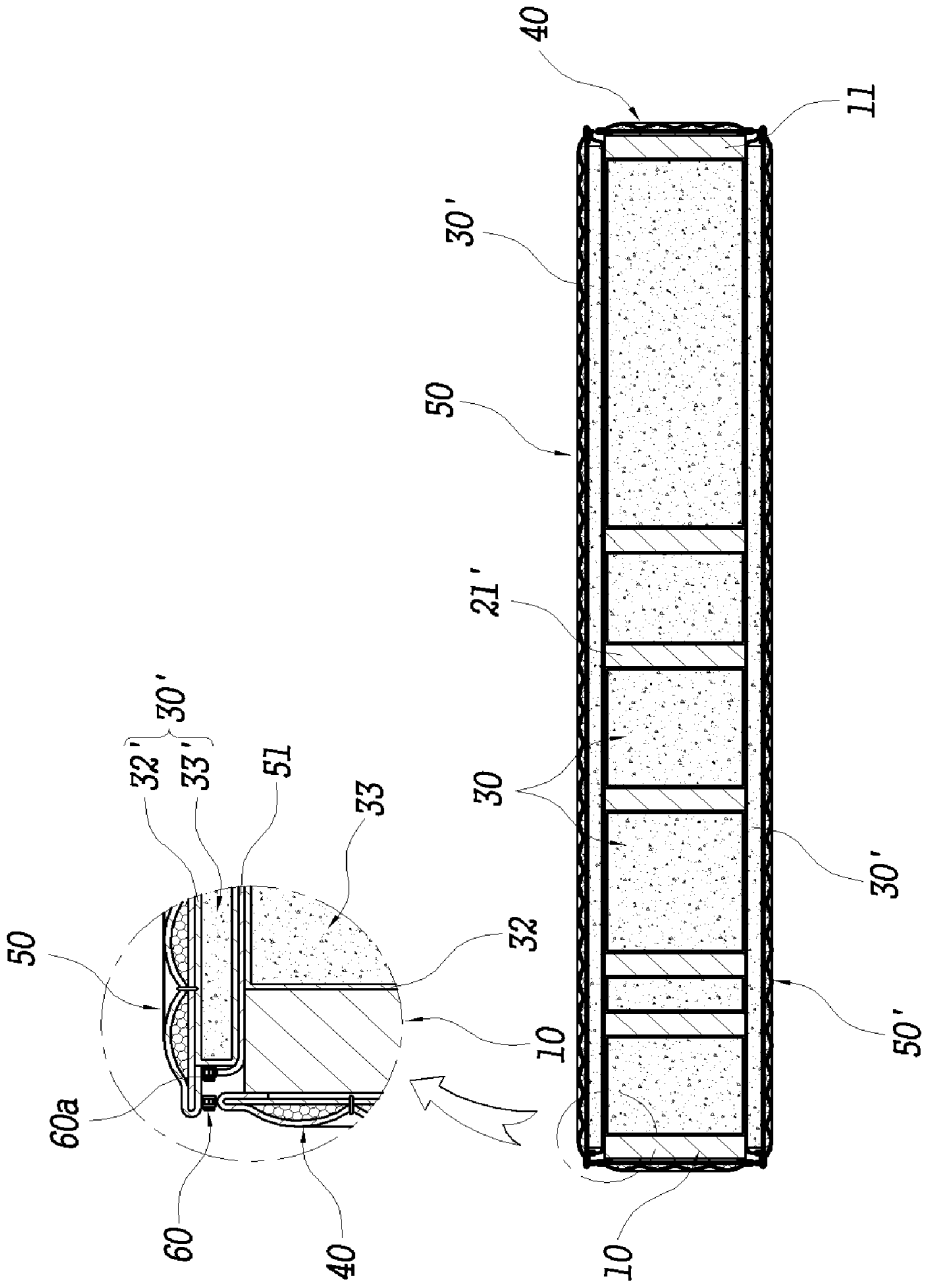
[Fig. 14]



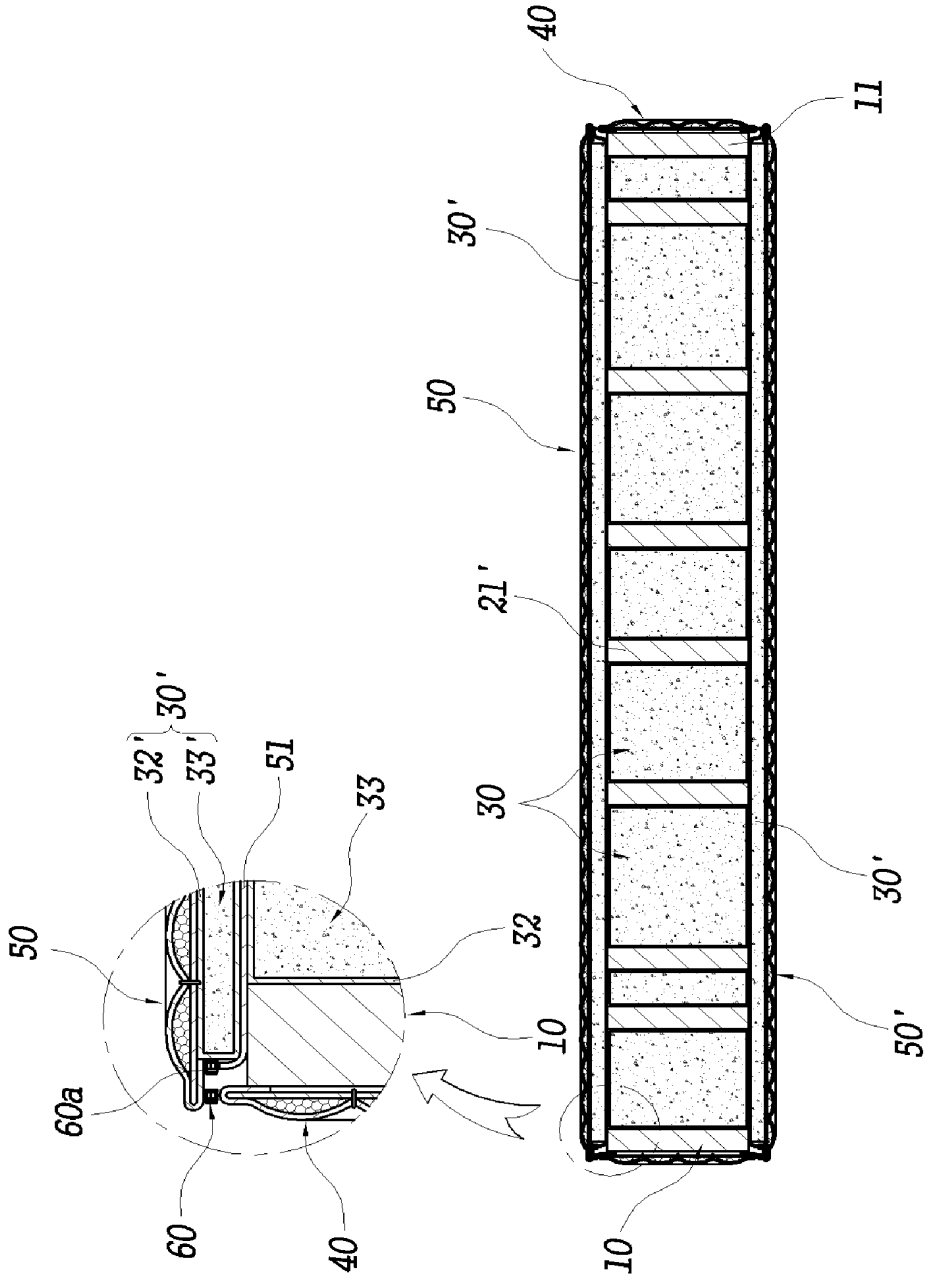
[Fig. 15]



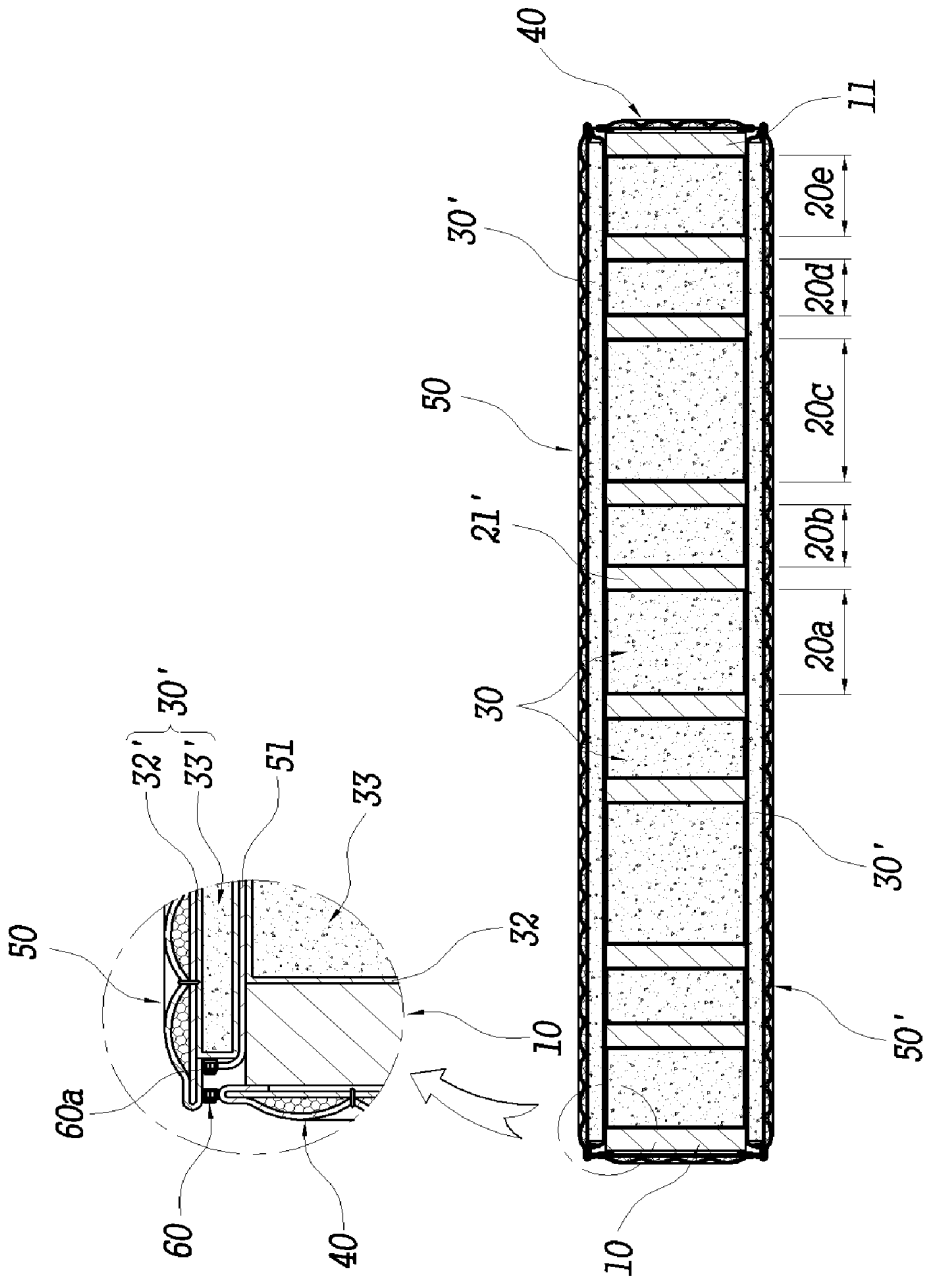
[Fig. 16]



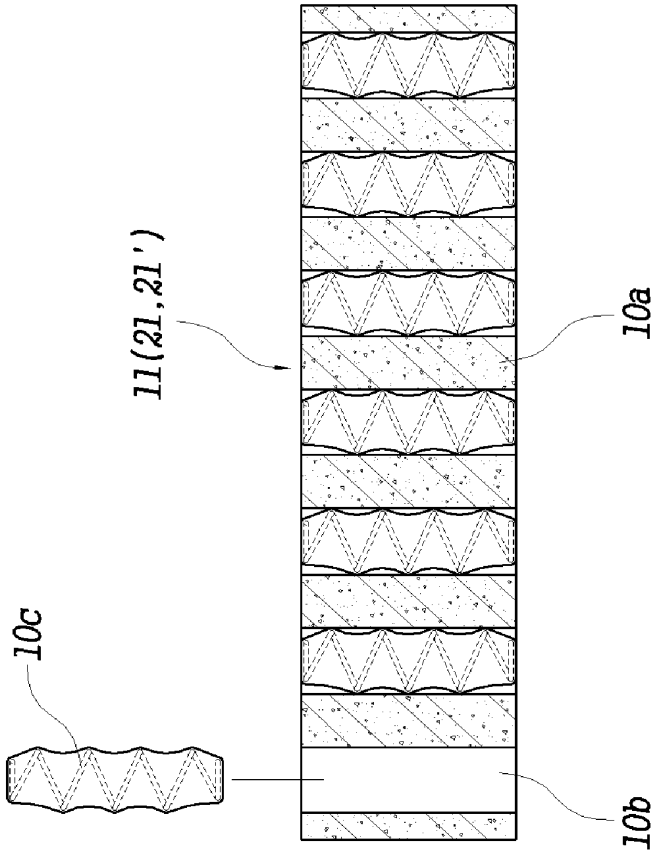
[Fig. 17]



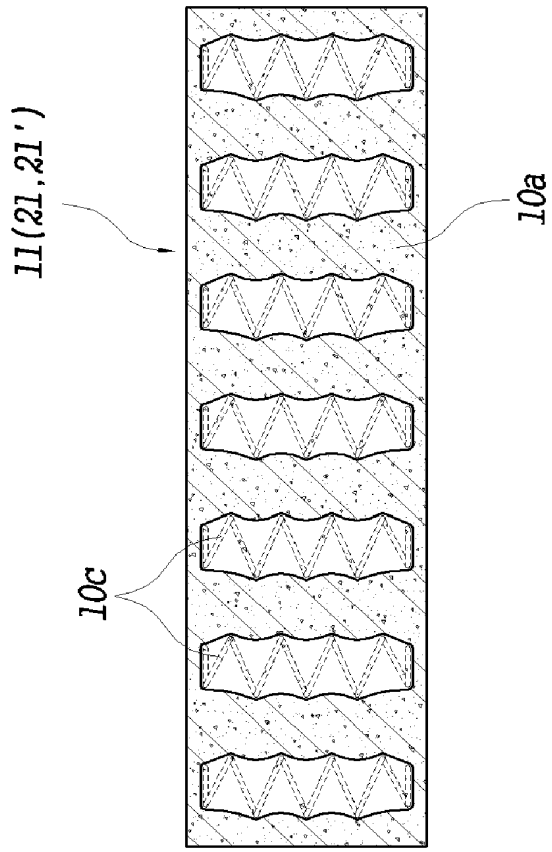
[Fig. 18]


40
11
30'
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20c
21'
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20a
30
30'
50'
10
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30'
32'
33'
51
33
50
32
60a
60
40

[Fig. 19]




[Fig. 20]



[Fig. 21]

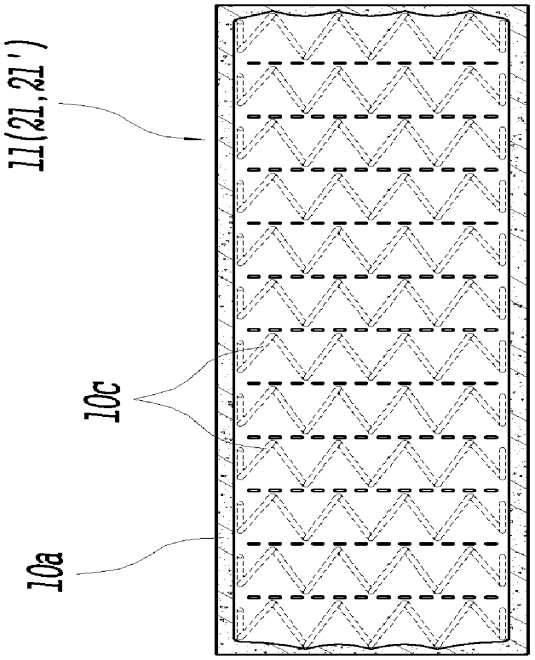
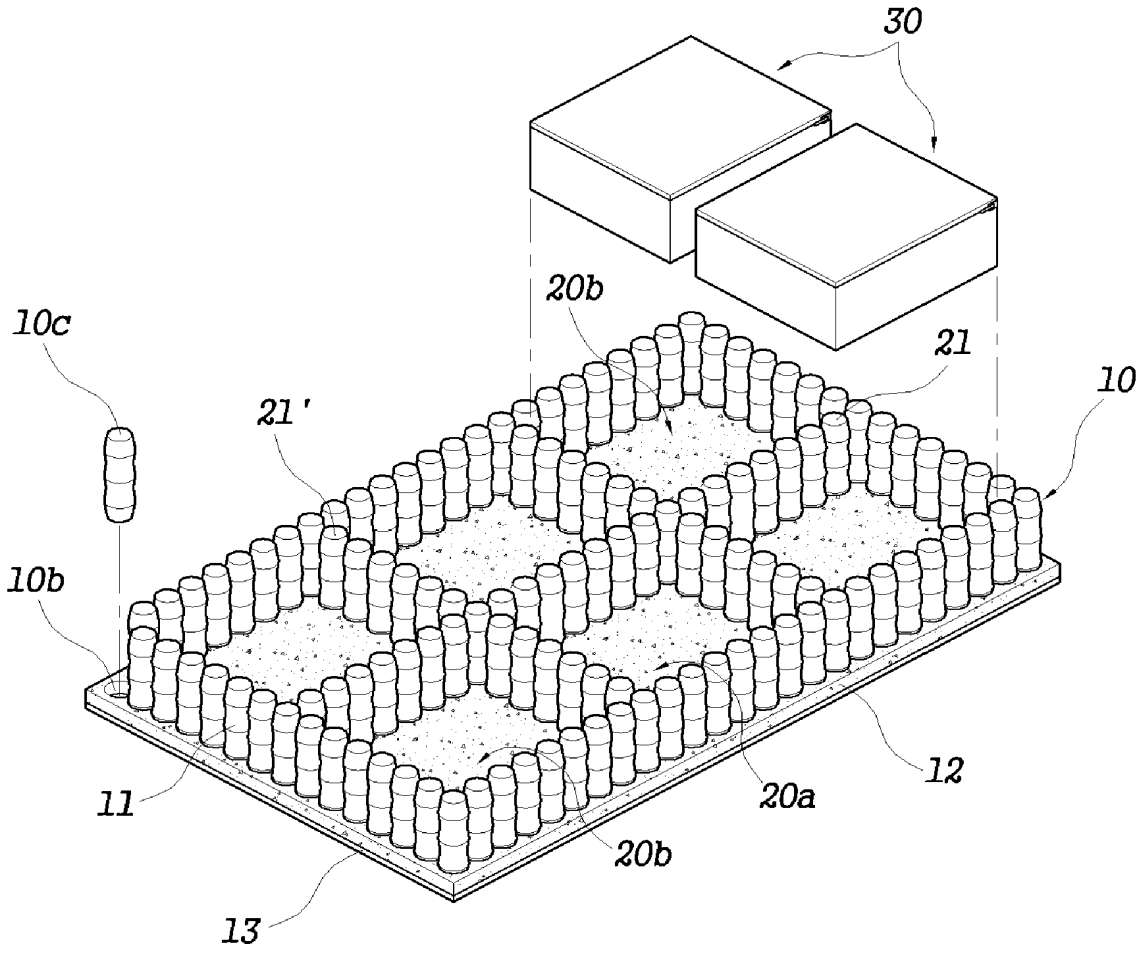
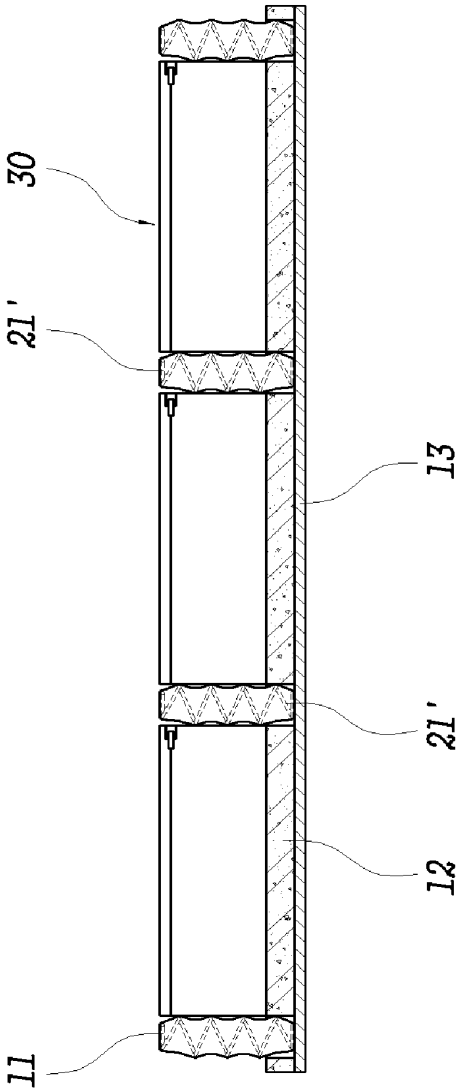



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[Fig. 22]



[Fig. 23]



# INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 2008/001709

A. CLASSIFICATION OF SUBJECT MATTER
IPC[8]: ***A47C 27/20*** (2006.01); ***A47C 27/14*** (2006.01); ***A47C 27/15*** (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)
IPC[8]: A47C

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPI, EPODOC, DEPATISNET

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | WO 2005/002400 A1(FLEX EQUIPOS DE DESCANSO, S.A.) 13 January 2005 (13.01.2005)<br>*claims ; Fig.1, Fig.2* | 1-45 |
| | -- | |
| X | CA 2 290 244 A1(LOCKSHINCKY MEIER) 23 May 2000 (23.05.2000)<br>*page 2, lines 20-25; claims; Figs.* | 1-45 |
| | -- | |
| X | WO 2005/099520 A1(FLEX EQUIPOS DE DESCANSO, S.A.) 27 October 2005 (27.10.2005)<br>*claims; Fig.1* | 1-45 |
| | -- | |

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 24 June 2008 (24.06.2008) | 4 July 2008 (04.07.2008) |

| Name and mailing address of the ISA/ AT | Authorized officer |
|---|---|
| **Austrian Patent Office**<br>Dresdner Straße 87, A-1200 Vienna | SEIRAFI M. |
| Facsimile No. +43 / 1 / 534 24 / 535 | Telephone No. +43 / 1 / 534 24 / 224 |

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | US 2004 172 767 A1(L & P PROPERTY MANAGEMENT CO) 9 September 2004 (09.09.2004) *whole document* | 1-45 |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR 2008/001709

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| WO A 2005002400 | | ES A1 2245877 | 2006-01-16 |
| | | ES A1 2242500 | 2005-11-01 |
| | | WO A1 2005002400 | 2005-01-13 |
| CA A 2290244 | | CA A1 2290244 | 2000-05-23 |
| | | IL A 127197 | 2000-06-01 |
| WO A 2005099520 | | WO A1 2005099520 | 2005-10-27 |
| US A 2004172767 | | EP A1 1603434 | 2005-12-14 |
| | | WO A1 2004078001 | 2004-09-16 |
| | | AU A1 2003258243 | 2004-09-28 |
| | | US A1 2004172767 | 2004-09-09 |

公開実用 昭和57— 201261




# 実用新案登録願

(4,700)

昭和 56 年 6 月 19 日

特許庁長官 島田春樹殿

1. 考案の名称 マットレス用スプリング体

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氏名 (7120) 弁理士 野本陽一

5. 添付書類の目録
✓(1) 明細書 1通
(3) 委任状 1通
✓方式(2) 図面 1通
✓審査(4) 要約書 1通

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特許庁 56 6.19

✓56 089597 201261

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# 明　　細　　書

1. 考案の名称　　マットレス用スプリング体

2. 実用新案登録請求の範囲

コイルスプリングを内封した包袋の相隣接部を縫合して縦列並立してなる包袋列を、相隣接部が縫合または溶着されて縦列並立してなる筒袋列に封入してなることを特徴とするマットレス用スプリング体。

3. 考案の詳細な説明

本考案はマットレス用スプリング体に関する。

従来、コイルスプリングを内封した包袋を、その相隣接部を縫合してマットレス全面に並立させてなるマットレス用スプリング体があり、これらはコイルスプリングが個々に独立して身体を支持



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20/2-21

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するため非常に快適な弾性を得られるものであつた。しかしながらこの反面、長時間使用するうちにコイルスプリングの独立的な運動によつて包袋の縫合部や包袋が破損し、ついにはコイルスプリングが包袋外部に露出して水平に倒伏する欠点があり、その耐久性に問題があつた。

本考案は以上の問題点に鑑み、縦列並立してなるコイルスプリング用包袋をさらに内封してなる筒袋を相隣接部を縫合または溶着してなるマットレス用スプリング体を構成することによつて快適な弾性力はもとより、耐久性に優れたマットレス用スプリング体を提供せんとしたものである。

以下、本考案の一実施例を図面にしたがつて説明すると、(1)はコイルスプリング、(2)は該コイルスプリング(1)を内封して相隣接部を縫合し



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てなる包袋列である。(3)は布製の筒袋であり、前記包袋列(2)を内封するとともに相隣接部が縫合されて筒袋列(4)が形成されてなる。

上記のように構成された本考案はコイルスプリング(1)は独立して身体の各部に均一で快適な弾性力を与えるとともに包袋列(2)が筒袋(3)(3)・・・の布壁によつて隔離されているため相互に擦れ合わないので破損し難く、したがつて耐久性の高いものである。また本考案は筒袋(3)(3)・・・が縫合されて一体構造の筒袋列(4)となつているため包袋列(2)の封入作業およびマットレスの組立作業が簡便で生産性の高いものである。なお本考案の筒袋列(4)よりなるマットレス用スプリング体はマットレス全面に配置する必要はなく、身体の動きの激しい中央部のみでもよい。





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以上説明したように本考案はコイルスプリングを内封した包袋の相隣接部を縫合して縦列並立させてなる包袋列を、相隣接部が縫合または溶着されて縦列並立してなる筒袋列に封入して、均一で快適な弾力を得られるとともに耐久性を著しく向上させたマットレス用スプリング体を提供したもので、その実用的効果は極めて大である。

4. 図面の簡単な説明

図面は本考案の一実施例を示すマットレス用スプリング体の斜視図である。

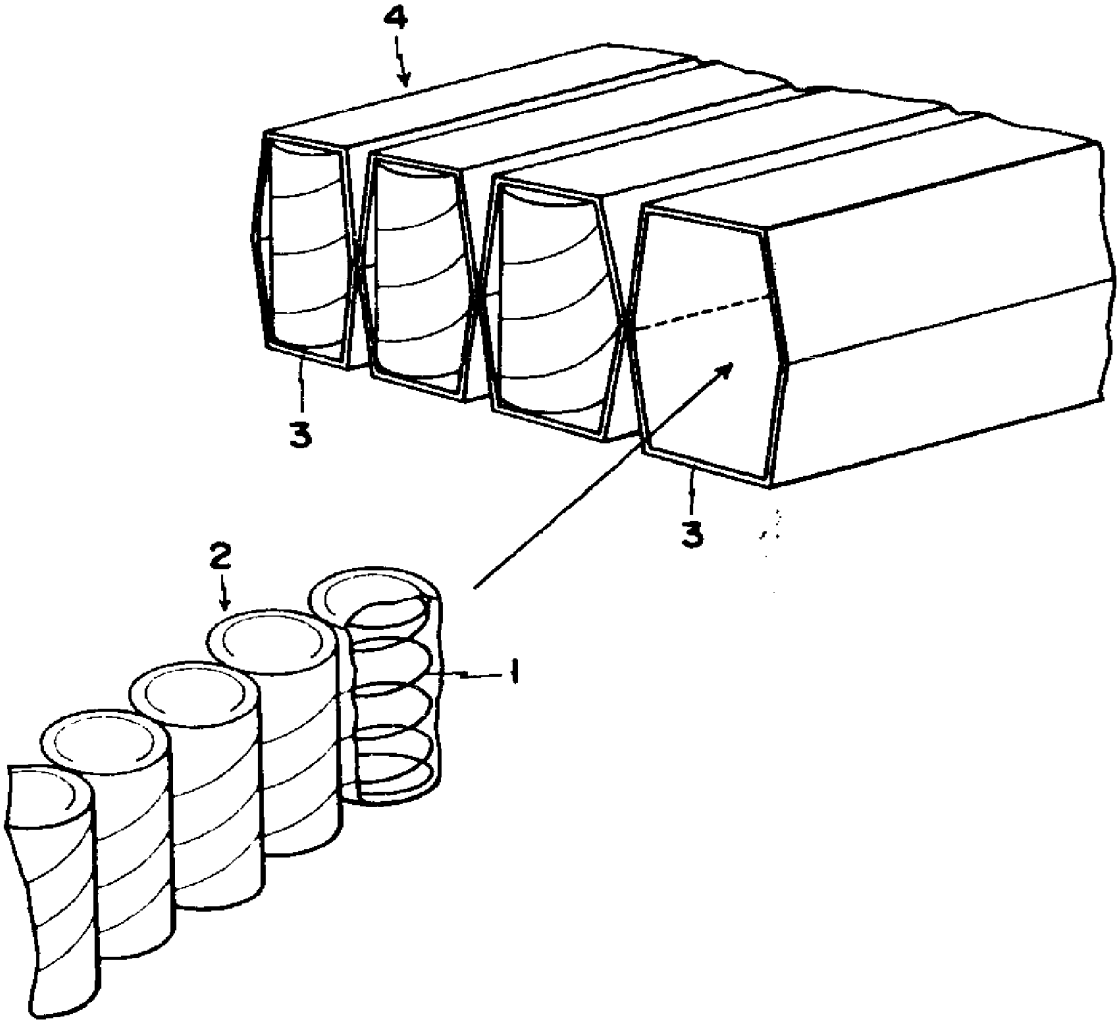
(1) コイルスプリング　(2) 包袋列　(3) 筒袋
(4) 筒袋列

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615

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## Scope of Claims

Close

[Utility Model Claims]

This spring body for the mike is characterized in that a package row in which an adjacent part of a package with a coil spring encapsulated therein is sewn and juxtaposed is sealed in a column of a cylindrical bag in which an adjacent part is sewn or welded.

## Detailed Description

Close

[Detailed description of the device]
This design is related with the spring body for mattresses.
In the prior art, there has been known a spring body for use in a motor vehicle which has a coil spring 7 which is provided with an adjacent St suture of a coil spring, and which is pr ovided with a coil spring 1 * and a coil spring 9.
However, on the other hand, while using it for a long time, the defect which package 0 sut uring part and a package are damaged, and a coil spring ** to package outside finally, and lodges horizontally by independent front movement of a coil spring was, and there was a p roblem in the durability.
In view of the above problems, it is an object of the present invention to provide a spring body for a 9 1 ****, which is comfortable for comfortable 5 ill force and is excellent in dur ability, and which is constituted of a stainless steel spring body t-configuration formed by s titching or ** a package t for a coil spring spring which is arranged in tandem and a cylind rical mounting ** 1 IlI.
Hereinafter, an embodiment of the present invention will be described with reference to th e accompanying drawings, wherein (1) is a coil spring, (2) is a coil spring, and (1) is a pha se contact portion which is sealed with an inner ring of an yl spring (121111).
(3) is a cloth bag made of cloth, In which a ** sealing is performed on the of the packagin g row (2) and an adjacent portion is sewn to form a ' 【 ** row (4).
According to the present invention configured as described above, the coil spring 1 indepe ndently provides uniform and comfortable elastic force to each part of the body of the bod y, and is hard to break and has high durability, I. e., L, *, because the packing row 2 is cov ered by the cloth walls of the bags 3 3,., and is prevented from being broken by the mutua l rubbing of the cloth walls **.
According to the present invention, since the m bags (3), (3),. are sewn together to form a n integral ** (4) of an integral structure, the packing work of the packing row (2) and the assembling work of the I **** can be simplified and the productivity is high (4).
As described above, the present invention provides a packaging column in which a phase I I contacts of the phase II of a packaging packed in a coil spring tube are stitched together and arranged in tandem, as described above, even in the case of a central portion O where the movement of the body is large, without a ** which is disposed on the entire surface of the **** 4. 103 To provide a spring body for a MEMS which is capable of obtaining a unifor m and comfortable elastic tube and remarkably improving durability by sealing a phase 11 4 contact part in a column of a cylindrical bag arranged in tandem by sewing or welding, a nd has extremely large practical effect.

[Brief Description of the Drawings]

FIG. 1 is a perspective view of a spring body for a MEMS according to an embodiment of th e present invention ;.

1 ... coil spring, 2 ... package sequence, 3 ... cylindrical bag, 4 ... cylindrical bag sequenc e.



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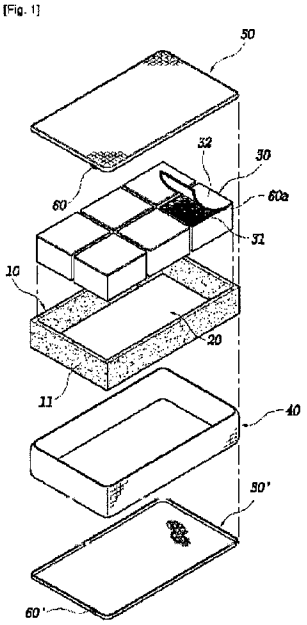
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最終頁に続く

(54)【発明の名称】マットレス

(57)【要約】
本発明は、ユーザの部位に対応して区画したマットレスの異なる部位に配列された複数のクッション部材３０を装着または交換するためのベッドマットレスであって、収容部２０のための周壁１１を有する一つのマットレスフレーム１０と；前記収容部２０に装着されて前記マットレスフレーム１０と共に一つのマットレスボディーを形成する複数のクッション部材３０と；前記マットレスボディーの外側部を取り囲むパッドと；前記マットレスボディーの上下面５０、５０’を覆うように、外周縁部が前記側面パッドの上下端部とそれぞれ結束される外周部６０、６０’を有する上下カバーパッドと、を有するベッドマットレスを提供する。
【選択図】図１



【特許請求の範囲】
【請求項１】
収容部のための周壁を有する一つのマットレスフレームと；
前記収容部に装着されて前記マットレスフレームと共に一つのマットレスボディーを形成する一あるいは二列とした複数のクッション部材と；
前記マットレスボディーの外側部を取り囲む側面パッドと；
前記マットレスボディーの上下面を覆うように、外周の端部が前記側面パッドの上下端部とそれぞれ結束される上下カバーパッドと、を有することを特徴とするマットレス。
【請求項２】
前記マットレスフレームの前記収容部を平行な一対の区分収容部に区画する一つの縦方向仕切り部をさらに有し、一つ以上のクッション部材が各々の前記区分収容部に配置されることを特徴とする請求項１に記載のマットレス。
【請求項３】
前記マットレスフレームの前記収容部を二つ以上の区分収容部に区画する一つあるいは二つ以上の横方向仕切り部をさらに有し、一つ以上のクッション部材が各々の前記区分収容部に配置されることを特徴とする請求項１に記載のマットレス。
【請求項４】
前記マットレスフレームの前記収容部を四つ以上の偶数個の区分収容部に区画する一つの縦方向仕切り部、および一つ以上の横方向仕切り部をさらに有し、一つ以上のクッション部材が各々の前記区分収容部に配置されることを特徴とする請求項１に記載のマットレス。
【請求項５】
前記マットレスボディーとその外周部の大きさが同一であり、前記マットレスボディーの下部に配置され、かつ、前記側面パッドにより前記マットレスボディーと共に覆われる一つの下部クッション部材をさらに有することを特徴とする請求項１に記載のマットレス。
【請求項６】
前記周壁および／または前記仕切り部が弾性スポンジ素材で一体に作られることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項７】
前記周壁および／または前記仕切り部が、隣接した弾性スポンジ素材のバー部材に相応する両端に、それらの両端が結合された弾性スポンジ素材のバー部材からなることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項８】
前記周壁および／または前記仕切り部がフレームベースに設けられた相応する孔に下部が固定された複数のスプリング構造体を有することを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項９】
弾性スポンジ素材の一つのフレームおよび複数のスプリング構造体を有する前記周壁および／または前記仕切り部が互いに分離または隣接しながら前記フレーム部材内に収容されることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項１０】
前記下部クッション部材が一つ以上の縦または横方向仕切り部が備えるあるいは備えない一つのフレームおよび前記フレームの内部に取り囲まれた複数のクッション部材を有することを特徴とする請求項５に記載のマットレス。
【請求項１１】
前記マットレスフレームが前記フレームベースの底面に付着された一つのクロージングプレートをさらに有することを特徴とする請求項８に記載のマットレス。
【請求項１２】
前記スプリング構造体が、それらの中間部分または上端部で隣接するスプリング構造体

に結束されることを特徴とする請求項８に記載のマットレス。
【請求項１３】
前記マットレスの要素の弾性が同一であることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項１４】
前記マットレス部材の要素の弾性が異なることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項１５】
前記クッション部材が、弾性スポンジ素材、筒状スプリング構造体、またはコイルスプリングもしくはポケットスプリングを用いたスプリング構造体から作られることを特徴とする請求項１～５のいずれか一項に記載のマットレス。
【請求項１６】
前記クッション部材が一つの布製袋に収容されることを特徴とする請求項１５に記載のマットレス。
【請求項１７】
前記収容部が一列の二つないし九つの区分収容部に区画されることを特徴とする請求項１、３または５のいずれか一項に記載のマットレス。
【請求項１８】
前記収容部が二列の二つないし九つの区分収容部を有することを特徴とする請求項２、３または４のいずれか一項に記載のマットレス。
【請求項１９】
偶数の前記区分収容部を有することを特徴とする請求項１７に記載のマットレス。
【請求項２０】
奇数の前記区分収容部を有することを特徴とする請求項１７に記載のマットレス。
【請求項２１】
各列に偶数の前記区分収容部を有することを特徴とする請求項１８に記載のマットレス。
【請求項２２】
各列に奇数の前記区分収容部を有することを特徴とする請求項１８に記載のマットレス。
【請求項２３】
前記区分収容部の長さが同一であることを特徴とする請求項１９～２２のいずれか一項に記載のマットレス。
【請求項２４】
前記区分収容部の長さが異なることを特徴とする請求項１９～２２のいずれか一項に記載のマットレス。
【請求項２５】
一つ以上の対の前記区分収容部が中央の区分収容部の外側に順次設けられ、同一な対の前記区分収容部の長さが同一であることを特徴とする請求項２０～２２のいずれか一項に記載のマットレス。
【請求項２６】
一つの中央の第１の区分収容部と第１の区分収容部の上下にある一対の第２の区分収容部との三つの区分収容部を有し、前記両第２の区分収容部内のクッション部材は弾性が同一であり、前記中央の第１の区分収容部内のクッション部材より弾性が強いことを特徴とする請求項２５に記載のマットレス。
【請求項２７】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短いことを特徴とする請求項２６に記載のマットレス。
【請求項２８】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッショ

ン部材の弾性より弱いことを特徴とする請求項２６または２７に記載のマットレス。
【請求項２９】
一つの中央の第１の区分収容部と第１の区分収容部の上下にある一対の第２の区分収容部と、各々の第２の区分収容部の外側にある１列になった一対の第３の区分収容部である五つの区分収容部を有し、前記第２および第３の区分収容部内に各対のクッション部材は弾性が同一であり、前記第３の区分収容部内のクッション部材の弾性は前記第１および２の区分収容部内のクッション部材とは弾性が異なることを特徴とする請求項２５に記載のマットレス。
【請求項３０】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さより長いことを特徴とする請求項２９に記載のマットレス。
【請求項３１】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記両側の第３の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第１の区分収容部内のクッション部材の弾性より強いことを特徴とする請求項２９または３０に記載のマットレス。
【請求項３２】
一つの中央の第１の区分収容部と第１の区分収容部の上下に順次設けられた一列の三対の第２、３および４の区分収容部である七つの区分収容部を有し、前記第２ないし第４の区分収容部の各対内のクッション部材は弾性が同一であることを特徴とする請求項２５に記載のマットレス。
【請求項３３】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さが前記第１の区分収容部の長さより短く、かつ、前記第４の区分収容部の長さが前記第２の区分収容部の長さより短いことを特徴とする請求項３２に記載のマットレス。
【請求項３４】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第３の区分収容部内のクッション部材の弾性が前記第１の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱く、さらに、前記両側の第４の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱いことを特徴とする請求項３２または３３に記載のマットレス。
【請求項３５】
一つの中央の第１の区分収容部と第１の区分収容部の上下に順次設けられた一列の四対の第２、第３、第４および第５の区分収容部である九つの区分収容部を有し、前記第２ないし第５の区分収容部の各対内のクッション部材は弾性が同一であることを特徴とする請求項２５に記載のマットレス。
【請求項３６】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さが前記第１の区分収容部の長さより短いが、前記第５の区分収容部の長さとは同一であり、かつ、前記第４の区分収容部は前記第２の区分収容部よりその長さが短いことを特徴とする請求項３５に記載のマットレス。
【請求項３７】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第３の区分収容部内のクッション部材の弾性が前記第１の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱く、前記両側の第４の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内の

クッション部材の弾性より弱く、さらに、前記両側の第５の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２および第４の区分収容部内のクッション部材の弾性より弱いことを特徴とする請求項３５または３６に記載のマットレス。

【請求項３８】

一つ以上の左側クッション部材の弾性が隣接する右側クッション部材の弾性とは異なることを特徴とする請求項１、２または４に記載のマットレス。

【請求項３９】

コイルスプリングもしくはポケットスプリングを有する一つのスプリング構造体または一つの弾性スポンジ素材で作られ、前記マットレスボディーの上および／または底に配置される一つまたは二つの補助クッション部材を有することを特徴とする請求項１～５のいずれか一項に記載のマットレス。

【請求項４０】

前記下部マットレス部材がコイルスプリングもしくはポケットスプリングで作られた一つのスプリング構造体または一つの弾性スポンジ素材からなることを特徴とする請求項３９に記載のマットレス。

【請求項４１】

前記マットレスボディーと前記下部クッション部材との間に配置された一つの隔離シートパッドを有することを特徴とする請求項５または３９に記載のマットレス。

【請求項４２】

前記マットレスフレームがその底に付着された一つの底シートを有することを特徴とする請求項５に記載のマットレス。

【請求項４３】

前記下部クッション部材が前記マットレスボディーより弾性が強いことを特徴とする請求項５または３９に記載のマットレス。

【請求項４４】

一つのファスナーが前記側面パッドと前記上部カバーパッドを分離できるように結束するように設けられることを特徴とする請求項１～５のいずれか一項に記載のマットレス。

【請求項４５】

一つのファスナーが前記側面パッドと前記下部カバーパッドを分離できるように結束するように設けられることを特徴とする請求項４４に記載のマットレス。

【発明の詳細な説明】

【技術分野】

【０００１】

本発明はマットレス、詳しくは弾性の異なる複数のクッション部材をフレームの内部に装着し、ユーザの身体の部位別に適合するクッション部材を選択的に装着または交替できるマットレスに関する。

【背景技術】

【０００２】

従来のベッドマットレスは、用いられた材料によってその弾性が異なるクッション部材が、その弾性がなくなったり、側面パッドや上下カバーパッドなどのアクセサリーが全体的あるいは部分的に損傷、汚染または脱色される場合に修理しないでマットレス自体を廃棄することが少なくなかった。それは、クッション部材とアクセサリーのようなマットレスの全ての部分が単一体として作られるので、マットレスの一つの部分または複数の部分だけを修理することが容易でなかったからである。

【０００３】

また、従来のマットレスは、全体領域に亘って殆ど同一な弾性を有するように製作されているので、人体の重い部位か軽い部位かによって押さえられる程度が異なり、ユーザが横たわった際に、マットレスおよびクッション部材は人体の各部位の重みで押さえられるが、人体の重みによりマットレスがなす曲線は、人体の輪郭と同一ではないので、胴体や

尻に比べて幅が狭く、くびれる首や腰等はマットレスの表面との接触ないしは支持されず、マットレスから離れた状態となる。そのため、マットレスの上に横になっても、その部位の筋肉が緊張してユーザが安楽な姿勢で横になることができないという問題点もあった。

【０００４】

従来の前記のような問題点を解決するためのマットレスとして、特許文献１には、人体の各部位と接触する部分に沿って、マットレスを複数の部分に区画して、各部分別に弾性が異なるスプリング体を配列したクッション部材を有するマットレスが開示されている。

【０００５】

しかし、前記マットレスは単一体で製作されるので、損傷した場合、部分的な修理または一つもしくは複数の部分の交換が難しく、さらに不可能な場合もあるので、マットレスの全体を換えらなければならない問題点を解決できなかった。また、ダブルベッドの場合には、スプリング構造体の各部分別弾性を異ならせることだけでは男女の身体的な差を考慮したクッション部材の提供が難しかった。

【先行技術文献】

【特許文献】

【０００６】

【特許文献１】韓国実用新案登録第３３７２３２号

【発明の概要】

【発明が解決しようとする課題】

【０００７】

本発明は、前記のような従来のマットレスの問題点などを勘案してなされたものであり、その目的は安楽な睡眠のためにユーザの部位に対応して区画したマットレスの異なる部位に配列された複数のクッション部材を装着または交換するとともに、年齢、性別、身長および体重を考慮してユーザの身体の対応部位に適合する弾性を有することができるマットレスを提供することである。

【０００８】

本発明の他の目的は、ユーザがクッション部材の汚染または損傷された部分を簡単に分離させて選択または交替できるようにすることによって、マットレスの使用期間の短縮を防ぎ、それによる費用低減が可能なマットレスを提供することである。

【課題を解決するための手段】

【０００９】

本発明の一つの局面によれば、マットレスは、収容部のための周壁を有する一つのマットレスフレームと；

前記収容部に装着されて前記マットレスフレームと共に一つのマットレスボディーを形成する複数のクッション部材と；

前記マットレスボディーの外側部を取り囲む側面パッドと；

前記マットレスボディーの上下面を覆うように、外周の端部が前記側面パッドの上下端部とそれぞれ結束される外周部を有する上下カバーパッドと、を有する。

【００１０】

本発明の他の一つの局面によれば、前記マットレスフレームは、前記収容部を平行な一対の区分収容部に区画する一つの縦方向仕切り部を有する。

【００１１】

本発明のさらに他の一つの局面によれば、前記マットレスは、一つ以上の仕切り部を有するあるいは有しないマットレスフレームと前記複数のクッション部材とで構成されるマットレスボディーの下部に、マットレスボディーの外周部と同一な大きさの一つの下部クッション部材をさらに有する。

【発明の効果】

【００１２】

このような本発明によるマットレスのクッション部材は、ユーザの身体的な条件や好み

に合わせるように身体部位に沿って、互いに異なる弾性を有するように選択することができる。

【００１３】

また、本発明によるマットレスは、クッション部材、側面パッドおよび上下のカバーパッドなどの部分を修理または交替のために分離できるので、マットレスの寿命を延長することが可能である。

【図面の簡単な説明】

【００１４】

【図１】図１は、本発明の第１の実施の形態によるマットレスの分解斜視図である。

【図２】図２は、図１のマットレスの側断面図である。

【図３】図３は、図２のマットレスの上部カバーパッドと補助クッション部材との結合体の側断面図ある。

【図４】図４は、図１のマットレスに使用されたクッション部材の他の例の側断面図である。

【図５】図５は、本発明の第２の実施の形態によるマットレスの分解斜視図である。

【図６】図６は、図５のマットレスの一部を切り取った正断面図である。

【図７】図７は、本発明の第３の実施の形態によるマットレスの分解斜視図である。

【図８】図８は、図７のマットレスの拡大側断面図である。

【図９】図９は、図７のマットレスの一つの変形例のマットレスの拡大側断面図である。

【図１０】図１０は、図７のマットレスの他の一つの変形例のマットレスの拡大側断面図である。

【図１１】図１１は、本発明の第４の実施の形態によるマットレスの分解斜視図である。

【図１２】図１２は、本発明の第５の実施の形態によるマットレスの分解斜視図である。

【図１３】図１３は、図１２のマットレスの拡大側断面図である。

【図１４】図１４は、本発明の第１の実施の形態によるマットレスの収容部を上下側に分割したことを示すマットレスの側断面図である。

【図１５】図１５は、本発明の第１の実施の形態によるマットレスの収容部を上下側に４分割した変形例の側断面図である。

【図１６】図１６は、本発明の第１の実施の形態によるマットレスの収容部を６分割した変形例のマットレスの側断面図である。

【図１７】図１７は、本発明の第１の実施の形態によるマットレスの収容部を８分割した変形例のマットレスの側断面図である。

【図１８】図１８は、本発明の第３の実施の形態によるマットレスの収容部を９分割した変形例のマットレスの側断面図である。

【図１９】図１９は、本発明のマットレスに使用される周壁及び仕切り部の他の例の部分断面図である。

【図２０】図２０は、本発明のマットレスに使用される周壁及び仕切り部の他の例の部分断面図である。

【図２１】図２１は、本発明のマットレスに使用される周壁及び仕切り部の他の例の部分断面図である。

【図２２】図２２は、本発明の第４の実施の形態のマットレスボディーの一部分解斜視図である。

【図２３】図２３は、図２２のマットレスボディーの部分側面図である。

【発明を実施するための形態】

【００１５】

以下、本発明を添付の図面を参照しながら、詳細に説明する。

【００１６】

図１は本発明の第１の実施の形態によるマットレスの分解斜視図であり、図２は図１のマットレスの側断面図であり、図３は図２のマットレスの上部カバーパッドと補助クッション部材との結合体の側断面図であり、図４は図１のマットレスに使用されたクッション

部材の他の例の側断面図である。

【００１７】

本発明の第１の実施の形態によるマットレスは弾性体であるウレタンフォームで成形された長方型周壁（周部）１１で構成され、一つの収容部２０を有する一つのマットレスフレーム１０と、前記収容部に二列で配置されてフレーム１０と一つのマットレスボディーを構成する六つのクッション部材３０と、マットレスボディーの上あるいは下に設置され、平らなウレタンフォーム３３と布製袋３２で作られた一対の補助クッション部材３０と、前記マットレスボディーの外側部（外周部）を取り囲む一つの側面パッド４０と、一対の補助クッション部材３０を各々覆い、外周縁部がそれぞれ一つのファスナー６０、６０’によって側面パッド４０の上下端部と結束される一体の上下部カバーパッド５０、５０’とを含んで構成される。

【００１８】

前記クッション部材３０は、ファスナー６０ａによって開閉される六面体の布製袋３２に配置されて収容された複数のコイルスプリング３１を縦横に連結して構成されたスプリング構造体であり、補助クッション部材３０はファスナー６０ａによって開閉される保護シートパッド５１によって上下部カバーパッド５０、５０’と結合され(図２参照)る。布製袋３２’は省略でき、補助クッション部材３０は使用しなくてもよいし、マットレスボディーの上部だけに配置することもできる。

【００１９】

フレーム１０の長方型周壁１１は、単一体として作るか、あるいは、四つのバー部材を用意して各々のバー部材の両端部を他のバー部材の相応する端部と接着して作ることができるが、後者の場合は別の接着工程が必要であるとともに、長期間の使用時には接着不良または重い荷重により接着端部が破損される恐れがあるので、単一体とすることが望ましく、その角部や接着部をより厚くまたは堅固に形成することがさらに望ましい。

【００２０】

そして、収容部２０に２列で配置された六つのクッション部材３０は、その外側部が周壁１１の互いに対応する内壁面さらに隣接するクッション部材の外側部と接触して密着収容されるので、従来の一つの単一クッション部材のように機能し、上述のように、クッション部材３０を必要によって互いに異なる弾性にすることが可能であるとともに、補助クッション部材３０も部分別に異なる弾性を有することができる。

【００２１】

図１、２では六つのクッション部材３０が二列として示されているが、必要に応じて四ないし十八個のクッション部材３０を二列で配置することもできる。

【００２２】

例えば、男性と女性、夫婦または成人と子供とのためのダブルベッドの場合、収容部２０の一端側に配置されるクッション部材３０はその弾性を他端側のクッション部材より弱くしたり、その幅を狭くすることが望ましい。

【００２３】

上記形態例では、スプリング構造体はコイルスプリング３１を用いることが示されているが、クッション部材３０の材料はそれに限らず図４のように、コイルスプリングの代わりにファスナー６０ｂを備えているポケットスプリング３１を使用することもできる。

【００２４】

また、クッション部材３０はフレームと同じようにウレタンフォームのような弾性スポンジで作ることができ、補助クッション部材３０’はクッション部材と同一な材料を用いたり、天然ゴム、人造ゴム等他の類似なものを使用できる。

【００２５】

図５、６は本発明の第２の実施の形態のマットレスの分解斜視図および正断面図であって、収容部２０を２つの平行する区分収容部２０’に分割する一つの仕切り部２１がマットレスフレーム１０と同一な材質でマットレスフレーム１０内に設けられている。

【００２６】

図５、６のマットレスは特に、キングサイズベッドやダブルベッドに使用することに適合し、また、クッション部材３０が隣接クッション部材３０との接触面より相対的に堅い仕切り部２１壁面と接触することによって、その流動性が低くなってフレーム１０とクッション部材３０の結合体であるマットレスボディーが堅固に維持される。

【００２７】

仕切り部２１は、フレーム１０の周壁１１と同じ材質の部材を別途に作って、その両端部を周壁１１の内壁に接着してもよいが、周壁１１と単一体として形成することが望ましい。

【００２８】

なお、仕切り部２１によって分割された二つの区分収容部２０’に装着されるクッション部材３０の数とその弾性は、第１の実施の形態と同一であるので、詳細な説明は省略する。

【００２９】

図７は本発明の第３の実施の形態によるマットレスの分解斜視図であり、図８は図７のマットレスの拡大側断面図であり、図９、１０は各々図７のマットレスの変形例を示す拡大側断面図であって、周壁１１を有するマットレスフレーム１０と、フレーム１０内の収容部２０が二つ、四つまたは六つの仕切り部２１’によって三つ、五つまたは七つの部分収容部に分割された複数の区分収容部２０ａ、２０ｂ、２０ｃ、２０ｄと、各区分収容部に一つずつ設置された複数のクッション部材３０と、一対の補助クッション部材と、一つの側面パッド４０および一対の上下部カバーパッド５０、５０’とを有するマットレスが図示されている。収容部はマットレスの上下側に対して三つ、五つまたは七つの区分収容部に分割され、クッション部材３０は第１、第２の実施の形態と同じように構成され、側面パッドとカバーパッドはファスナー６０によって、第１、第２の実施の形態と同じように結束される。

【００３０】

収容部２０を複数に割った区分収容部は、その個数が二つから五つ、五つから七つに増加することによってその縦長さが減少するが、普通の使用者あるいは特定使用者の人体の各部分の重さと大きさを考慮して縦長さを異ならせ、弾性が異なるクッション部材３０を配置することが望ましい。

【００３１】

図７および図８のマットレスの場合、中央の第１の区分収容部２０ａの縦長さをその外側の第２の区分収容部２０ｂより短くし、第１の区分収容部２０ａに装着するクッション部材３０の弾性は第２の区分収容部２０ｂに装着するクッション部材より弱くすることが望ましい。

【００３２】

そして、図９の本発明の第３の実施の形態の一つの変形例のマットレスの場合、中央の第１の区分収容部２０ａは、その両側の第２の区分収容部２０ｂより縦長さを短くし、各外端側の第３の区分収容部２０ｃは第１の区分収容部２０ａより縦長さを短くし、第１の区分収容部２０ａに装着されるクッション部材３０の弾性は第２の区分収容部２０ｂのクッション部材より弱くし、第３の区分収容部２０ｃのクッション部材３０の弾性は第１の区分収容部２０ａのクッション部材３０より強く、第２の区分収容部２０ｂのクッション部材３０より弱くするのが尻、胴体と両脚、頭と両足に分れる身体的構造に適合することと確認された。

【００３３】

また、図１０の本発明の第３の実施の形態における他の変形例のマットレスの場合、中央の第１の区分収容部２０ａは、その両外側の第２の区分収容部２０ｂより縦長さを長くし、第２の区分収容部２０ｂの各外側の第３の区分収容部２０ｃは第１の区分収容部２０ａより縦長さを長くし、第３の区分収容部２０ｃの各外側の第４の区分収容部２０ｄは第２の区分収容部２０ｂより縦長さを短くし、第１の区分収容部２０ａに配置するクッション部材３０の弾性は第２の区分収容部２０ｂに装着するクッション部材３０より弱く、第

３の区分収容部２０ｃに装着するクッション部材３０の弾性は第１の区分収容部２０ａのクッション部材３０より強いが、第２の区分収容部２０ｂに収容するクッション部材より弱く、第４の区分収容部２０ｄに収容するクッション部材の弾性は第１、第３の区分収容部２０ａ、２０ｃに装着するクッション部材より強いが、第２の区分収容部２０ｂに装着するクッション部材より弱い。

【００３４】

このようにすることは、弾性の同一なクッション部材３０で構成されたマットレスの上にユーザが横になる時、マットレスが押さえられてへこむ程度が人体の各部位の重さに比例しないので、マットレスにおいて部分別に弾性を異なるようにすることによって頭、胴体、尻および脚の部位はもちろん、これらの部位に比べて重さが軽く、幅が狭く、くびれる部位である首、腰、ひざや腕のひかがみなどを含む全ての部位が人体の曲線に沿ってマットレスのクッション部材に適切に接触されて支持されるようにすることによって、より安楽な睡眠ができるようにする。

【００３５】

すなわち、図１０のマットレスのように七つの区分収容部を有する場合は、第１の区分収容部２０ａに収容されるクッション部材３０の弾性は第２の区分収容部２０ｂに収容されるクッション部材より弱く、第３の区分収容部２０ｃのクッション部材の弾性は第１の区分収容部２０ａのクッション部材と同一にし、第４の区分収容部２０ｄのクッション部材の弾性は第１、第３の区分収容部２０a、２０ｃのクッション部材より強いが、第２の区分収容部２０ｂのクッション部材より弱く、つまり、それらが収容される第１、第３の区分収容部　＜　第４の区分収容部　＜　第２の区分収容部の順にすることが望ましい。

【００３６】

このような弾性の差は、ユーザがマットレスの上に横になると各区分収容部２０ａ、２０ｂ、２０ｃ、２０ｄに収容された各クッション部材３０はその弾性の強弱と相応する身体部位に沿ってへこむ程度に差があるようにする。尻が位置する中央の第１の区分収容部２０ａが最も多くへこみ、腰が位置する上側の第２の区分収容部２０ｂは最も少なくへこむ一方、胴体が位置する上側の第３の区分収容部２０ｃは第１の区分収容部２０ａより少ないが、頭が位置する上側の第４の区分収容部２０ｄより多く圧着され、足と脚が位置する下側の第２から４の区分収容部２０ｂ、２０ｃ、２０ｄは各々足と脚の各部位の重さに沿って押さえられる。

【００３７】

このように、各区分収容部などによりそれらのクッション部材３０の弾性を人体の各部位の重さに反比例するように形成することによってマットレスすなわち、クッション部材は人体の各部位の曲線に沿って押さえられると同時に人体を安楽に支えることになり、中央の第１の区分収容部２０ａを中心としてその両側に、各々外側に順に形成された各区分収容部２０ｂおよび２０ｂ、２０ｃおよび２０ｃ、２０ｄおよび２０ｄで互いに縦長さと弾性を同一にしたことは、ユーザが必要によってマットレスの上下位置を変えて使用することができるようにする。

【００３８】

図１１は、本発明の第４の実施の形態によるマットレスの分離斜視図であって、１つの縦方向仕切り部と２つの横方向仕切り部でマットレスフレーム１０内の収容部２０を左右各々三つ部分に割って六つの区分収容部２０ａ、２０ｂ、２０ｃとして作ったマットレスを示している。クッション部材３０は複数のコイルスプリング３１が布製袋３２に収容されて作られる。

【００３９】

図１１のマットレスは２人、特に夫婦のように性別が異なる２人用のキングサイズのベッドやダブルベッドにマットレスとして適合するものであって、身長や体重等の身体条件が異なる２人のユーザのために、左右に各々三つの区分収容部２０ａ、２０ｂ、２０ｃを配置して各区分収容部２０ａ、２０ｂ、２０ｃ別に互いに異なる弾性を有するクッション部材３０を左右に装着することができる。

【００４０】
さらに、各区分収容部２０ａ、２０ｂ、２０ｃの１つまたはそれ以上の縦長さを使用者の異なる身体的条件を考慮して異なるようにすることもできる。
【００４１】
図１２と図１３においてマットレスは、バー状の一つのウレタンフォームからなる部材の両端部を他のウレタンフォーム製部材の相応する端部と接着して形成された長方型周壁１１と、その周壁１１の内側にあるいは縦方向仕切り部の側面に、両端が接着された五つのウレタンフォーム製部材からなる縦方向と横方向の仕切り部２１、２１’によって区画された区分収容部２０ａ、２０ｂを備え、下面が底シートパッド５３によって閉鎖されたマットレスフレーム１０と；フレームと共にマットレスボディーを成すために六つの区分収容部２０ａ、２０ｂに各々装着されるクッション部材３０と；フレーム１０の下部に配置される下部クッション部材３０ａと；フレーム１０とクッション部材３０が結合されたマットレスボディーと下部クッション部材３０ａの結合体の外側部を囲む側面パッド４０と；側面パッドと上部カバーパッドを結束するファスナー６０を備え、マットレスボディーを覆う上部カバーパッド５０と；側面パッド４０の下端を縫うことによって結束され、マットレスボディーと下部クッション部材３０ａを側面パッド４０と共に収容する下部カバーパッド５０’とを含んで構成される。
【００４２】
下部クッション部材３０ａは、フレーム１０とクッション部材３０のマットレスボディーより厚くしたほうが望ましいが、同じ厚さにしてもよい。
【００４３】
クッション部材３０と下部クッション部材３０ａは、ウレタンフォーム３３または３３’’が各々の布製袋３２または３２’’の内に満たされてファスナー６０ｂまたは６０ｅで封ずることによって作られたものであるが、これと異なって、上述したスプリング構造体を使用することもできる。
【００４４】
フレーム１０と下部クッション部材３０ａとの間に介在された隔離シートパッド５２は、その外周の端部と側面パッド４０の内周面に付設したファスナー６０ｃで結束または分離することができる。また、側面パッド４０の下端とカバーパッド５０’の下端が囲む裁縫によって結束されたので、下部クッション部材３０ａを側面パッドと下部カバーパッドにより形成される内部空間に入れることやそこから取り出すことができる。
【００４５】
底シートパッド５３は、各区分収容部２０ａ、２０ｂに収容されたクッション部材３０が下部に離脱されないようにするものであるので、必須的な構成要素ではない。
【００４６】
下部クッション部材３０ａの弾性はクッション部材３０より強い方が望ましく、各クッション部材の弾性は第１の実施の形態のマットレスについて説明したように、各区分収容部２０ａ、２０ｂによって互いに異なるようにするのが望ましい。区分収容部２０ａ、２０ｂの左右位置によってその縦長さとそこに収容されるクッション部材３０の弾性を異なるようにするのは第４の実施の形態のマットレスについて説明した通りである。
【００４７】
また、先行する形態のように、側面パッドと下部カバーパッドを一つのファスナーによって結束できるようにすることも可能である。
【００４８】
図１４から図１７は、収容部２０を偶数の二、四、六、八つの区分収容部に分割した本発明の第１の実施の形態における変形例のマットレスの側断面図である。各区分収容部の縦長さを人体の相応する部位のサイズに合わせるように定めたマットレスを示しており、各構成部分の構成と作用は第１から第３の実施の形態と同一であるので、詳細な説明は省略する。
【００４９】

マットレスの各区分収容部の縦長さは図１４から図１７と異なるようにすることもできるし、上述した第２の実施の形態から第４の実施の形態のマットレスのように上下側を変えて使用することより上面と底面が変わるように裏返して使用することもできる。

【００５０】

図１８は収容部を９つの区分収容部に分割した、本発明の第３の実施の形態によるマットレスの変形例の側断面図であって、ユーザの必要によりまたは身長が極めて高いユーザに適合するマットレスを例示したものである。そのマットレスは中央の第１の区分収容部２０ａを基準としてその上側に続いて形成される第２の区分収容部２０ｂ、第３の区分収容部２０ｃ、第４の区分収容部２０ｄ、第５の区分収容部２０ｅを有する。それらの区分収容部の縦長さは人体の該当部位、すなわち、尻、腰、背中、首、頭の大きさを考慮して決定し、下側の区分収容部２０ｂ、２０ｃ、２０ｄ、２０ｅの縦長さはそれと対応する上側の区分収容部と同一にすることができる。

【００５１】

上述した本発明の実施の形態のフレーム１０の周壁１１は従来のマットレスと同じか弱い弾性を有しながら、長期間の使用でも原型を維持することができる堅固性を有しなければならないことについて、仕切り部２１、２１’はクッション部材３０の最も弱い弾性と同じか弱い弾性とすることによって、ユーザがマットレスの上に横になる時、人体の各部位別にクッション部材３０が押さえられる程度を仕切り部２１、２１’が妨げないようにするのが望ましい。ただし、長時間の使用によって変形されない堅固度を有しなければならないことは周壁１１の場合と同じである。

【００５２】

上述の本発明の実施の形態とは異なり、フレーム１０を図１９のようにウレタンフォーム１０ａに一定な間隔に形成された垂直結合孔１０ｂにポケットスプリング１０ｃを各々結合したり、図２０のようにポケットスプリングをウレタンフォーム１０ａ内に間隔を置いて収容させて一体に形成したり、図２１のように前記ウレタンフォーム１０ａの内部に列をなして連結された複数のポケットスプリングを収容させて一体に形成してもよく、ポケットスプリングは一般のコイルスプリングに代替することもできる。

【００５３】

一方、適合する弾性を有する限り、ウレタンフォーム以外のそれと類似なスポンジ部材でもクッション部材を作る弾性体として使用することができる。

【００５４】

図２２、図２３は、マットレスフレーム１０とクッション部材３０からなる本発明の第４の実施の形態(図１１参照)におけるマットレスの変形例のマットレスボディーの一部分解斜視図および部分側面図である。そのフレーム１０はウレタンフォームで作られ、多数の結合孔１０ｂが連続して形成された受け取り板材(base plate)１２と、第１、第２の区分収容部２０ａ、２０ｂを区画する周壁１１および仕切り部２１、２１’と、結合孔１０ｂに下部が固定されたポケットスプリング１０ｃと、受け取り板材１２の底面に付着されプラスチック板からなる補助板(bottom plate)１３とを含んで構成される。また、クッション部材３０は上の区分収容部２０ａ、２０ｂに設置される。

【００５５】

図２２、図２３において、各結合孔１０ｂが補助板材１３によって閉じられているので、ポケットスプリング１０ｃが受け取り板材１２の下に突出しない状態で結合孔１０ｂに固定されているが、たとえば、厚い受け取り板材１２を使用して底面が閉じられた結合孔１０ｂを形成することもできる。

【００５６】

また、隣接したポケットスプリング１０ｃを中間部分や上端部を互いに固定した結合体とすることによって、マットレスのクッション部材３０がユーザの体重により押さえられる時、周壁と仕切り部が区分収容部の両側に押されないようにして、フレームの機能を十分に行うようにすることが望ましい。

【００５７】

さらに、他の形態例に対して上で説明した周壁と仕切り部の弾性と堅固度は図２２、図２３のマットレスにも適用される。

【００５８】

上記形態例ではフレーム１０の仕切り部２１、２１’の高さは説明したように周壁１１と同一の高さにすることできるが、周壁１１の高さより低くすることもできるし、例えば、周壁１１の高さの１／２や、それ以上にしてその弾性を周壁１１より弱くすることもできる。

【００５９】

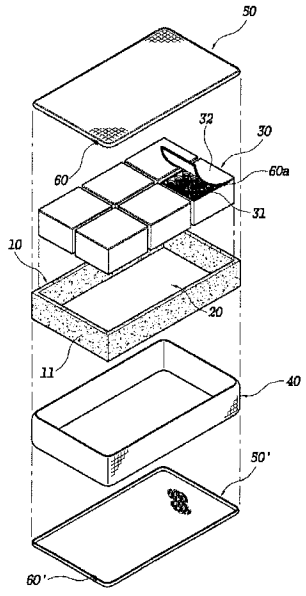
さらに、クッション部材３０は各区分収容部に沿って弾性を異なるようにすること以外に、一つのクッション部材または二つ以上の隣接クッション部材の集合体の周縁部の高さを隣接クッション部材と同一あるいは略同一にし、中央に向かうほど低くしたり高くすることで、溝や突出部が設けられるようにすることができる。また、各区分収容部に複数のクッション部材を配置することもできる。

【００６０】

本発明の望ましい形態について例示のために説明したが、この発明の分野で通常の知識を有する者であれば、上述したこと以外にも本発明の思想の範囲内で種々の変形、変更および代替が可能であろう。また、本発明の保護範囲は上記形態例および説明に限定されず、添付した特許請求の範囲によってのみ制限される。

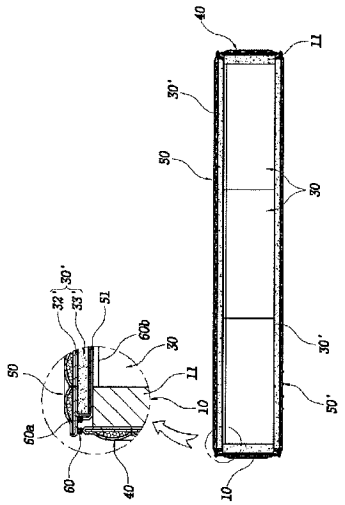
【図１】

[Fig. 1]



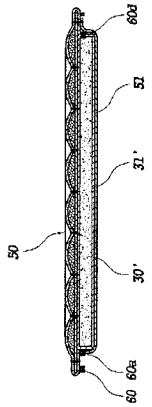

【図２】

[Fig. 2]



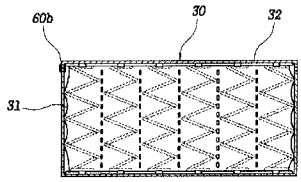
【図３】

[Fig. 3]



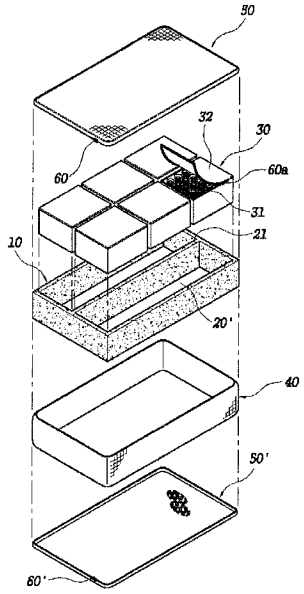

【図４】

[Fig. 4]



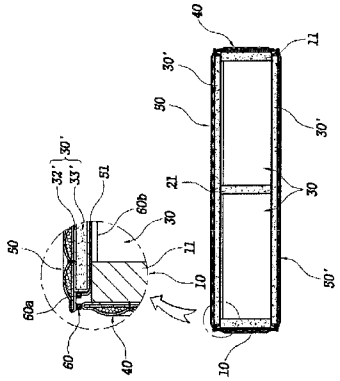

【図５】

[Fig. 5]




【図６】

[Fig. 6]




【図７】

[Fig. 7]

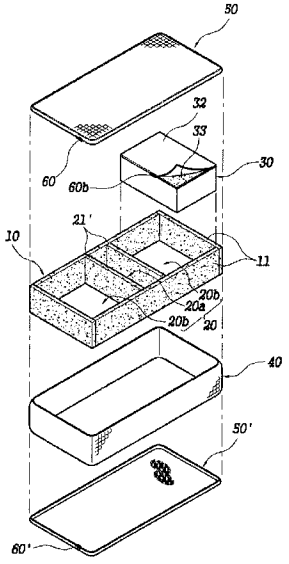
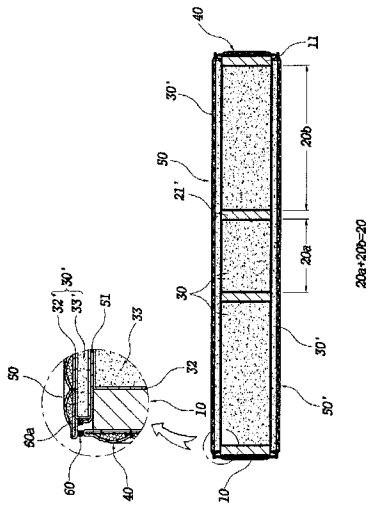


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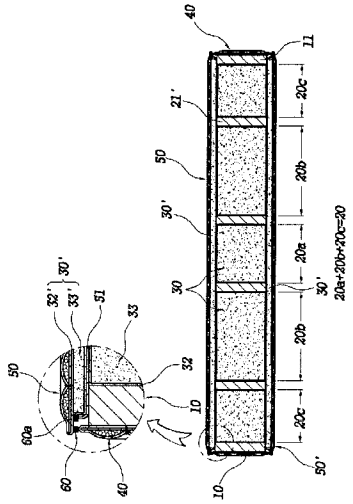
【図８】

[Fig. 8]



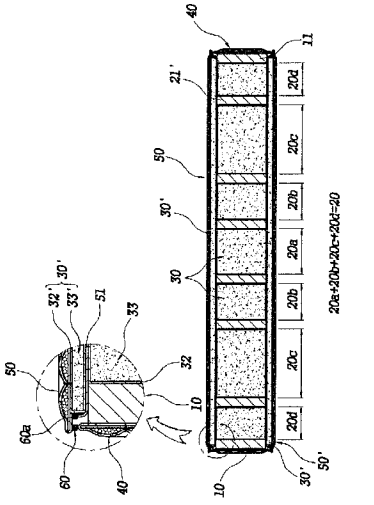

【図９】

[Fig. 9]



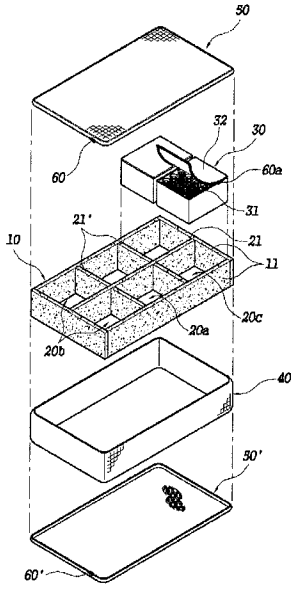

【図１０】

[Fig. 10]



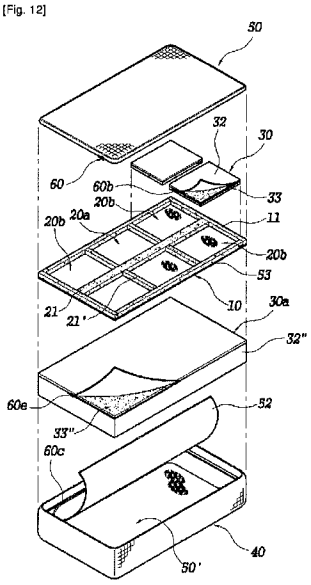

【図１１】

[Fig. 11]



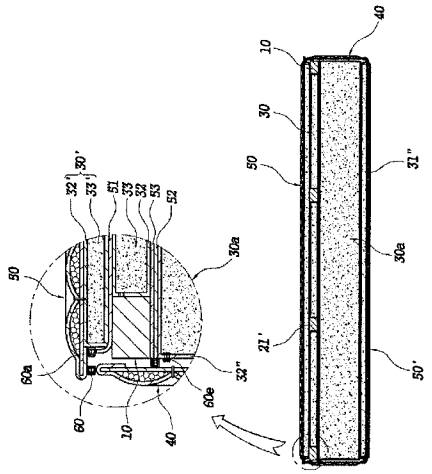
【図１２】

[Fig. 12]



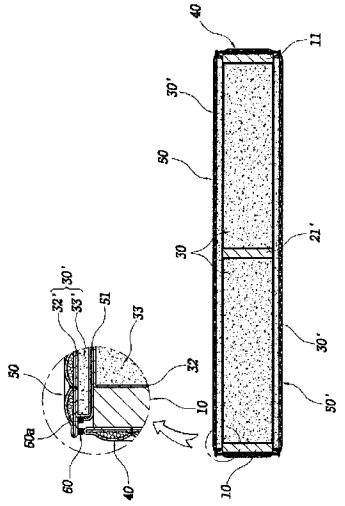

【図１３】

[Fig. 13]



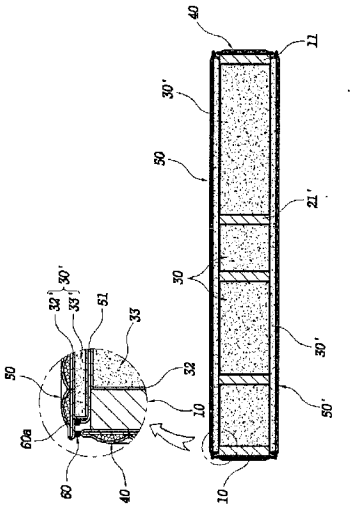

【図１４】

[Fig. 14]



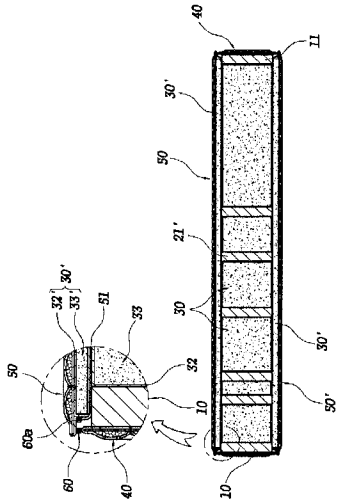

【図１５】

[Fig. 15]



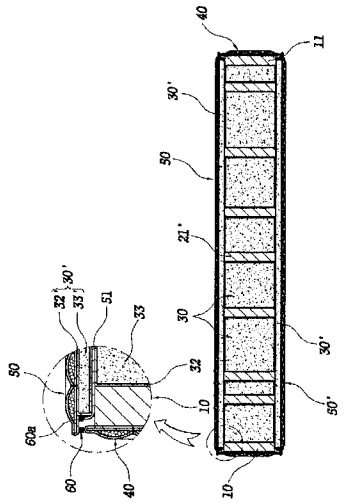
【図１６】

[Fig. 16]



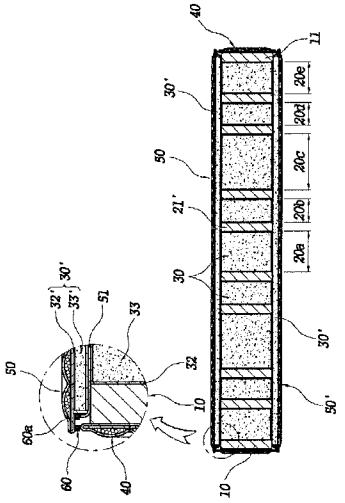
【図１７】

[Fig. 17]



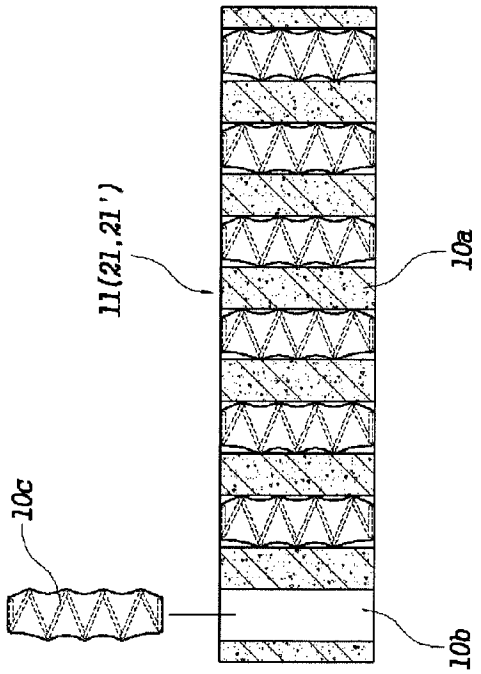
【図１８】

[Fig. 18]



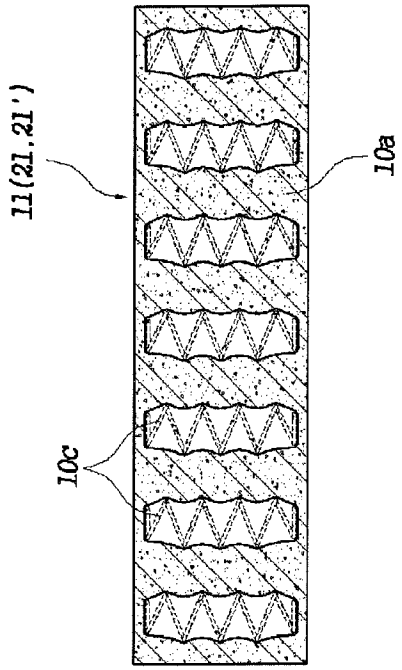
【図１９】

[Fig. 19]



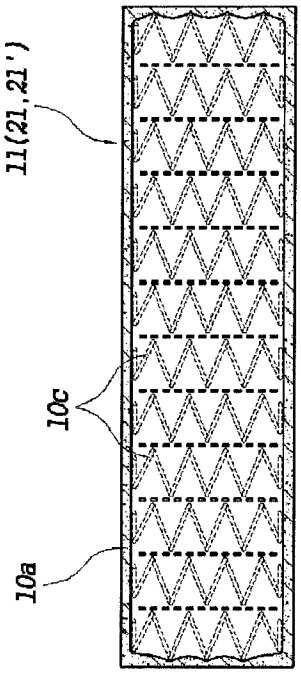
【図２０】

[Fig. 20]



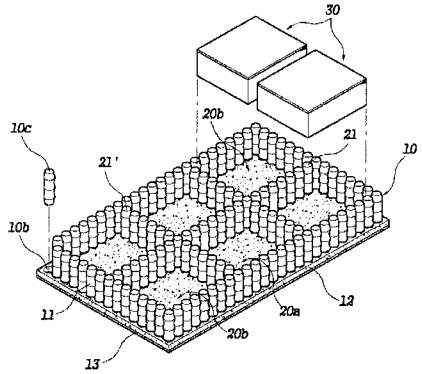

【図２１】

[Fig. 21]



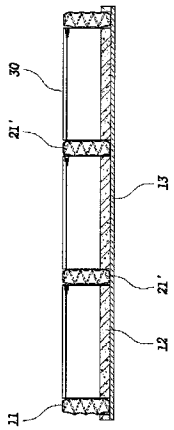

【図２２】

[Fig. 22]




【図２３】

[Fig. 23]



【手続補正書】
【提出日】平成21年2月9日(2009.2.9)
【手続補正１】
【補正対象書類名】特許請求の範囲
【補正対象項目名】全文
【補正方法】変更
【補正の内容】
【特許請求の範囲】
【請求項１】
一つの中央の第１の区分収容部と当該第１の中央の区分収容部の外側に設けられた一列または二列になった一対の第２の区分収容部である三つの区分収容部を形成するための弾性素材からなる少なくとも二つの横仕切り部を有し、一つの縦仕切り部を有するあるいは有さない一つの周壁を有する一つのマットレスフレームと；
各々の前記区分収容部に配置され、前記マットレスフレームと共に一つのマットレスボディーを形成する一つ以上のクッション部材と；
前記マットレスボディーの外側部を取り囲む側面パッドと；
前記マットレスボディーの上下面を覆うように、外周の端部が前記側面パッドの上下端部とそれぞれ結束される上下カバーパッドと、を有するマットレスであって、
前記両側の第２の区分収容部内のクッション部材の弾性が同一であるが、中央の前記第１の区分収容部内のクッション部材より弾性が強いことを特徴とするマットレス。
【請求項２】
前記マットレスボディーとその外周部の大きさが同一であり、前記マットレスボディーの下部に配置され、かつ、前記側面パッドにより前記マットレスボディーと共に覆われる一つの下部クッション部材をさらに有することを特徴とする請求項１に記載のマットレス。
【請求項３】
前記周壁および／または前記仕切り部が弾性スポンジ素材で一体に作られることを特徴とする請求項１または２に記載のマットレス。
【請求項４】
前記周壁および／または前記仕切り部が、隣接した弾性スポンジ素材のバー部材に相応する両端に、それらの両端が結合された弾性スポンジ素材のバー部材からなることを特徴とする請求項１または２に記載のマットレス。
【請求項５】
前記周壁および／または前記仕切り部がフレームベースに設けられた相応する孔内に下部が固定された複数のスプリング構造体を有することを特徴とする請求項１または２に記載のマットレス。
【請求項６】
弾性スポンジ素材の一つのフレームおよび複数のスプリング構造体を有する前記周壁および／または前記仕切り部が互いに分離または隣接しながら前記フレーム部材内に収容されることを特徴とする請求項１または２に記載のマットレス。
【請求項７】
前記下部クッション部材が一つ以上の縦または横方向仕切り部が備えるあるいは備えない一つのフレームおよび前記フレームの内部に取り囲まれた複数のクッション部材を有することを特徴とする請求項２に記載のマットレス。
【請求項８】
前記マットレスフレームが前記フレームベースの底面に付着された一つのクロージングプレートをさらに有することを特徴とする請求項５に記載のマットレス。
【請求項９】
前記スプリング構造体が、それらの中間部分または上端部で隣接するスプリング構造体に結束されることを特徴とする請求項５に記載のマットレス。

【請求項１０】
前記クッション部材が、弾性スポンジ素材、筒状スプリング構造体、またはコイルスプリングもしくはポケットスプリングを用いたスプリング構造体から作られることを特徴とする請求項１または２に記載のマットレス。
【請求項１１】
前記クッション部材が一つの布製袋に収容されることを特徴とする請求項１０に記載のマットレス。
【請求項１２】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第２の区分収容部の長さは同一であることを特徴とする請求項１に記載のマットレス。
【請求項１３】
前記第１の区分収容部内のクッション部材の長さが前記第２の区分収容部内のクッション部材の長さと同一であることを特徴とする請求項１に記載のマットレス。
【請求項１４】
各々の前記第２の区分収容部の外側にある一列または二列になった一対の第３の区分収容部を有し、前記第３の区分収容部内の各対のクッション部材は弾性が同一であり、前記第３の区分収容部内のクッション部材の弾性は前記第１および第２の区分収容部内のクッション部材とは弾性が異なることを特徴とする請求項１に記載のマットレス。
【請求項１５】
前記第３の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第１の区分収容部内のクッション部材の弾性より強いことを特徴とする請求項１４に記載のマットレス。
【請求項１６】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さより長いことを特徴とする請求項１４または１５に記載のマットレス。
【請求項１７】
前記第３の区分収容部の上下に設けられた一列または二列となった一対の第４の区分収容部を有し、前記第４の区分収容部の各対内のクッション部材は弾性が同一であることを特徴とする請求項１４に記載のマットレス。
【請求項１８】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さが前記第１の区分収容部の長さより短く、かつ、前記第４の区分収容部の長さが前記第２の区分収容部の長さより短いことを特徴とする請求項１７に記載のマットレス。
【請求項１９】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第３の区分収容部内のクッション部材の弾性が前記第１の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱く、さらに、前記第４の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱いことを特徴とする請求項１７または１８に記載のマットレス。
【請求項２０】
前記第４の区分収容部の上下に設けられた一列または二列となった一対の第５の区分収容部をさらに有し、前記第５の区分収容部の各対内のクッション部材は弾性が同一であることを特徴とする請求項１７に記載のマットレス。
【請求項２１】
前記第１の区分収容部の長さが前記第２の区分収容部の長さより短く、前記第３の区分収容部の長さが前記第１の区分収容部の長さより短いが、前記第５の区分収容部の長さとは同一であり、かつ、前記第４の区分収容部は前記第２の区分収容部よりその長さが短い

ことを特徴とする請求項２０に記載のマットレス。
【請求項２２】
前記第１の区分収容部内のクッション部材の弾性が前記第２の区分収容部内のクッション部材の弾性より弱く、前記第３の区分収容部内のクッション部材の弾性が前記第１の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱く、前記第４の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２の区分収容部内のクッション部材の弾性より弱く、さらに、前記第５の区分収容部内のクッション部材の弾性が前記第１および第３の区分収容部内のクッション部材の弾性より強いが、前記第２および第４の区分収容部内のクッション部材の弾性より弱いことを特徴とする請求項２０または２１に記載のマットレス。
【請求項２３】
一つ以上の左側クッション部材の弾性が隣接する右側クッション部材の弾性とは異なることを特徴とする請求項１に記載のマットレス。
【請求項２４】
コイルスプリングもしくはポケットスプリングを有する一つのスプリング構造体または一つの弾性スポンジ素材で作られ、前記マットレスボディーの上および／または底に配置される一つまたは二つの補助クッション部材を有することを特徴とする請求項１に記載のマットレス。
【請求項２５】
前記下部マットレス部材がコイルスプリングもしくはポケットスプリングで作られた一つのスプリング構造体または一つの弾性スポンジ素材からなることを特徴とする請求項２に記載のマットレス。
【請求項２６】
前記マットレスボディーと前記下部クッション部材との間に配置された一つの隔離シートパッドをさらに有することを特徴とする請求項２または２５に記載のマットレス。
【請求項２７】
前記マットレスフレームがその底に付着された一つの底シートを有することを特徴とする請求項２に記載のマットレス。
【請求項２８】
前記下部クッション部材が前記マットレスボディーより弾性が強いことを特徴とする請求項２または２５に記載のマットレス。
【請求項２９】
一つのファスナーが前記側面パッドと前記上部カバーパッドを分離できるように結束するように設けられることを特徴とする請求項１に記載のマットレス。
【請求項３０】
一つのファスナーが前記側面パッドと前記下部カバーパッドを分離できるように結束するように設けられることを特徴とする請求項１～２９のいずれか一項に記載のマットレス。

【国際調査報告】

**INTERNATIONAL SEARCH REPORT**

International application No.
PCT/KR 2008/001709

A. CLASSIFICATION OF SUBJECT MATTER
IPC[8]: ***A47C 27/20*** (2006.01); ***A47C 27/14*** (2006.01); ***A47C 27/15*** (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)
IPC[8]: A47C

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPI, EPODOC, DEPATISNET

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | WO 2005/002400 A1(FLEX EQUIPOS DE DESCANSO, S.A.) 13 January 2005 (13.01.2005) *claims ; Fig.1, Fig.2* | 1-45 |
| X | CA 2 290 244 A1(LOCKSHINCKY MEIER) 23 May 2000 (23.05.2000) *page 2, lines 20-25; claims; Figs.* | 1-45 |
| X | WO 2005/099520 A1(FLEX EQUIPOS DE DESCANSO, S.A.) 27 October 2005 (27.10.2005) *claims; Fig.1* | 1-45 |

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 24 June 2008 (24.06.2008) | 4 July 2008 (04.07.2008) |
| Name and mailing address of the ISA/ AT<br>**Austrian Patent Office**<br>Dresdner Straße 87, A-1200 Vienna<br>Facsimile No. +43 / 1 / 534 24 / 535 | Authorized officer<br>SEIRAFI M.<br>Telephone No. +43 / 1 / 534 24 / 224 |

Form PCT/ISA/210 (second sheet) (January 2004)

**INTERNATIONAL SEARCH REPORT**

International application No.
PCT/KR 2008/001709

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | US 2004 172 767 A1(L & P PROPERTY MANAGEMENT CO)<br>9 September 2004 (09.09.2004)<br>*whole document*<br>---- | 1-45 |

Form PCT/ISA/210 (continuation of second sheet (1)) (January 2004)

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR2008/001709

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| WO A 2005002400 | | ES A1 2245877 | 2006-01-16 |
| | | ES A1 2242300 | 2005-11-01 |
| | | WO A1 2005002400 | 2005-01-13 |
| CA A 2290244 | | CA A1 2290244 | 2000-05-23 |
| | | IL A 127197 | 2000-06-01 |
| WO A 2005099520 | | WO A1 2005099520 | 2005-10-27 |
| US A 2004172767 | | EP A1 1603434 | 2005-12-14 |
| | | WO A1 2004078001 | 2004-09-16 |
| | | AU A1 2003258243 | 2004-09-28 |
| | | US A1 2004172767 | 2004-09-09 |

Form PCT/ISA/210 (patent family annex) (July 1998; reprint January 2004)

フロントページの続き

(81)指定国 AP(BW,GH,GM,KE,LS,MW,MZ,NA,SD,SL,SZ,TZ,UG,ZM,ZW),EA(AM,AZ,BY,KG,KZ,MD,RU,TJ,TM),EP(AT,BE,BG,CH,CY,CZ,DE,DK,EE,ES,FI,FR,GB,GR,HR,HU,IE,IS,IT,LT,LU,LV,MC,MT,NL,NO,PL,PT,RO,SE,SI,SK,TR),OA(BF,BJ,CF,CG,CI,CM,GA,GN,GQ,GW,ML,MR,NE,SN,TD,TG),AE,AG,AL,AM,AO,AT,AU,AZ,BA,BB,BG,BH,BR,BW,BY,BZ,CA,CH,CN,CO,CR,CU,CZ,DE,DK,DM,DO,DZ,EC,EE,EG,ES,FI,GB,GD,GE,GH,GM,GT,HN,HR,HU,ID,IL,IN,IS,JP,KE,KG,KM,KN,KP,KZ,LA,LC,LK,LR,LS,LT,LU,LY,MA,MD,ME,MG,MK,MN,MW,MX,MY,MZ,NA,NG,NI,NO,NZ,OM,PG,PH,PL,PT,RO,RS,RU,SC,SD,SE,SG,SK,SL,SM,SV,SY,TJ,TM,TN,TR,TT,TZ,UA,UG,US,UZ,VC,VN,ZA,ZM,ZW

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Ｆターム(参考) 3B096 AA01 AB07 AC01 AD02 AD07

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15816983 |
| **Filing Date:** | 17-Nov-2017 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Attorney Docket Number:** | 54023-3030US01 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 260 | 260 |
| | | **Total in USD ($)** | | **260** |

# Electronic Acknowledgement Receipt

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|---|---|
| **EFS ID:** | 44254012 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 10-NOV-2021 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 17:50:57 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| Submitted with Payment | yes |
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| Payment was successfully received in RAM | $260 |
| RAM confirmation Number | E2021A0H51260616 |
| Deposit Account | |
| Authorized User | |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 2021-11-10-sb0008a-IDS-54023-3030US01.PDF | 1050479<br>1bdd312f8a0f604f99053b1b663ea570fe5e0a0e | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 2021-08-13-OA-JP2020-527078.PDF | 240163<br>1285213285143a1d4ad121e23b233d400f1a14de | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Foreign Reference | WO2009048209A1.PDF | 1775716<br>572277d8b0650a84f0d5bcf17cdd23c064b87c9a | no | 47 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Foreign Reference | JPS57201261U.PDF | 80079<br>f092431102984eeb25b498012317c77b40fee965 | no | 6 |
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| **Information:** | | | | | |
| 5 | Foreign Reference | JPS57201261U-MachineTranslation.PDF | 312679<br>5febfad58bcf6c55de4f45306003ab033a487c34 | no | 3 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Non Patent Literature | 2021-09-10-OA-KR10-2020-7016996.pdf | 643972<br>cf8dd7fdc561c585e5e03e30a3b2e842518409ff | no | 15 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

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| 7 | Foreign Reference | JP2010530764A.pdf | 2864553<br>f224a29278fb693c8d896a943e6e2b835a738aa8 | no | 25 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 8 | Fee Worksheet (SB06) | fee-info.pdf | 38438<br>20e0b58a7b083cfeda6b5f01ac2f8231cc33fe26 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 7006079 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Purple Innovation, LLC

**Application No.:** 15/816,983

**Filed:** November 17, 2017

**Confirmation No.:** 9411

**For:** MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

**Art Unit:** 3673

**Examiner:** McClure, Morgan J.

**Attorney Docket No.:** 54023-3030US01

VIA EFS
September 8, 2021

**RESPONSE TO FINAL OFFICE ACTION**

Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Examiner:

This Response follows the final Office Action of July 8, 2021.

A listing of the claims begins on page 2 of this paper; and

Remarks start on page 6 of this paper.

IN THE CLAIMS

1. (Previously presented) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric;

an elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed and defining a reduced slip surface or a non-slip surface on a lower surface of the stabilization layer, the reduced slip surface or the non-slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element.

2. (Previously presented) The mattress assembly of claim 1, wherein:

the coil layer has a thickness of about 6.00 inches to about 8.00 inches; and

the elastomeric cushioning element has a thickness of about 2.0 inches to about 4.5 inches.

3. (Previously presented) The mattress assembly of claim 2, wherein:

the coil layer has a thickness of about 7.50 inches; and

the elastomeric cushioning element has a thickness of about 4.0 inches.

4. (Previously presented) The mattress assembly of claim 1, further comprising:

one or more side panels extending around outer perimeters of the base layer and the upper layer, the outer covering also encasing the one or more side panels.

5. (Original) The mattress assembly of claim 1, wherein the base layer and the upper layer both comprise a polyurethane foam.

6. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer provides a slip-resistant surface against the upper layer.

7. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer is secured to the upper layer.

8. (Previously presented) The mattress assembly of claim 7, wherein the stabilization layer is adhesively secured to the upper layer.

9. (Previously presented) The mattress assembly of claim 1, wherein the base layer has a thickness of about 0.75 inches to about 1.50 inches and the upper layer has a thickness of about 0.25 inches to about 0.75 inches.

10. (Previously presented) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils, each pocketed coil of the plurality of pocketed coils comprising:

a plurality of nested casings; and

a single coil disposed within an innermost casting of the plurality of nested casings;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric; and

at least one elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the at least one elastomeric cushioning element seeping through the scrim fabric of the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric, the non-slip surface or the reduced slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the at least one elastomeric cushioning element.

11. (Original) The mattress assembly of claim 10, wherein the plurality of pocketed coils are oriented next to each other in a grid pattern.

12. (Previously presented) The mattress assembly of claim 10, wherein the plurality of nested casings of each pocketed coil comprises:
a first casing; and
a single second casing disposed within the first casing, with the single coil being disposed within the second casing.

13. (Original) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer.

14. (Previously presented) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element covers a portion of an upper surface of the upper layer.

15. (Previously presented) The mattress assembly of claim 11, wherein the at least one elastomeric cushioning element comprises a grid of interconnected walls defining hollow buckling columns.

16. (Previously presented) A method of forming a mattress assembly, comprising:
disposing a coil layer over a base layer;
disposing an upper layer over the coil layer;
disposing an elastomeric cushioning element over the upper layer including positioning a stabilization layer and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer against the upper layer, the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer; and
encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element in an outer casing.

17. (Previously presented) The method of claim 16, further comprising:
individually disposing each coil of the coil layer within a first casing; and
individually disposing the first casing within a second casing.

18. (Previously presented) The method of claim 17, wherein individually disposing each coil of the coil layer within the first casing comprises individually disposing the coil within a polypropylene bag.

19. (Previously presented) The method of claim 18, wherein individually disposing the first casing within the second casing comprises individually disposing the first casing within a polypropylene bag.

20. (Previously presented) The method of claim 16, further comprising:
securing the stabilization layer to the upper layer.

## REMARKS

The final Office Action of July 8, 2021 has been received and considered.

Claims 1-20 are currently pending, have been considered, and stand rejected.

Reconsideration of the application is respectfully requested.

### Rejections under 35 U.S.C. § 103

Claims 1-20 have been rejected under 35 U.S.C. § 103.

There are several requirements for establishing a prima facie case of obviousness against the claims of a patent application. All of the limitations of the claim must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. When the art teaches or suggests each and every claim element, a claim "is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007). The Office must also establish that one of ordinary skill in the art would have had some apparent reason to modify or combine reference teachings and then been able to predict that the purported modification or combination of reference teachings would have been successful. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). A mere conclusory statement that one of ordinary skill in the art would have been motivated to modify or combine reference teachings simply will not suffice. *KSR* at 1396. To meet its burden, the Office must provide "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The articulated reasoning must be found in the prior art or common knowledge to those of ordinary skill in the art, or be derived from the nature of the problem itself; it cannot be based upon the Applicant's disclosure or the Examiner's own hindsight analysis. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006).

<u>Gladney, Rancourt, and Mossbeck</u>

Claims 1-9 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from U.S. Patent 10,357,113 of Gladney ("Gladney"), in view of teachings and/or suggestions from U.S. Patent 9,032,571 of

Rancourt et al. ("Rancourt") and U.S. Patent Application Publication US 2014/0373281 A1 of Mossbeck ("Mossbeck").

Claim 1 recites a mattress assembly comprising a base layer, a coil layer, an upper layer over the coil layer, a stabilization layer, and an elastomeric cushioning element over the stabilization layer. Independent claim 1 further recites that the stabilization layer is secured to a bottom of the elastomeric cushioning element with an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer. Elastomeric material is exposed on a lower surface of the stabilization layer. The elastomeric material defines a reduced-slip *surface* of a non-slip *surface* on a lower surface of the stabilization layer. Paragraph **[0031]**. The reduced-slip *surface* or the non-slip *surface* is *positioned against* an upper surface of the upper layer. *Id.*

Gladney teaches a low-profile (with a thickness of 8 inches or less) mattress 10 with an inner core spring 12 and a foam padding layer 16 over the inner core spring 12.

Rancourt teaches a mattress with a silicone contact mat 14 that is integrated into a body support pad 12 "by capillarity during curing" of the silicone contact mat 14. Rancourt, col. 6, lines 56-67. The silicone material of the silicone contact mat 14 may extend into cells that open to an upper surface of the body support pad 12 located beneath the silicone contact mat 14 to mechanically integrate the silicone contact mat 14 and the body support pad 12. Rancourt, col. 6, lines 56-67. Alternatively, an anti-friction mat 16 that includes two layers may be placed between the body support pad 12 and the silicone contact mat 14 "to ensure slipping between the contact mat **14** and the body cushioning pad **12**…" Rancourt, col. 7, lines 1-7; FIG. 1.

Mossbeck teaches that a scrim layer 21 may be positioned between a pocketed spring assembly 12 and a pocketed topper 19. Mossbeck, paragraph **[0066]**; FIG. 1B.

It is respectfully submitted that none of Gladney, Rancourt, or Mossbeck teaches or suggests an elastomeric material that seeps through a stabilization layer to define a reduced-slip surface or a non-slip surface on a lower surface of the stabilization layer. Instead, Rancourt teaches an embodiment of mattress where a silicone contact mat 14 is positioned directly adjacent to a body support pad 12 and silicone of the silicone contact mat 14 extends into open cells of the body support pad 12 to mechanically integrate the silicone contact mat 14 to the body support pad 12. Rancourt, col. 6, lines 56-67. One of ordinary skill in the art would recognize

that it would be counterintuitive to place an "anti-friction mat" between the body support pad 12 and a silicone contact mat 14 that has been mechanically integrated with the body support pad 12, as it would be impossible to reduce friction between a body support pad 12 and a silicone contact mat 14 that has been mechanically integrated with the body support pad 12.

As an alternative to integrating the silicone contact mat 14 with the body support pad 12, Rancourt teaches that an anti-friction mat 16 that includes two layers of lycra-type material could be disposed between the body support pad 12 and the silicone contact mat 14 "to ensure slipping between" the silicone contact mat 14 and the body support pad 12. Rancourt, col. 7, lines 1-3. It is respectfully submitted that one of ordinary skill in the art would readily comprehend that slipping could not be ensured if silicone material of the silicone contact mat 14 seeped through the anti-friction mat 16 to define a *reduced-slip* surface, as required by claim 1.

In view of the foregoing, it is respectfully submitted that none of Gladney, Rancourt, or Mossbeck teaches or suggests a *reduced-slip* surface or a *non-slip* surface that has been formed from an elastomeric material that seeps through a stabilization layer.

Further, none of Gladney, Rancourt, or Mossbeck teaches or suggests that a reduced-slip surface or a non-slip surface is *positioned against* an upper surface of an upper layer over a coil layer. Again, the elastomeric material of Rancourt (i.e., the silicone of the silicone contact mat 14) passes into cells that open to an upper surface of the body support pad 12 (Rancourt, col. 6, lines 56-67); thus, the elastomeric material of Rancourt does not define a reduced-slip surface or a non-slip surface that is *positioned against* the upper surface of the body support pad 12.

For these reasons, it is respectfully submitted that the teachings and/or suggestions of Gladney, Rancourt, and Mossbeck, as combined by the Office, cannot be relied upon to establish a prima facie case of obviousness against amended independent claim 1, as would be needed for the Office to maintain its 35 U.S.C. § 103 rejection of independent claim 1.

Claims 2-9 are allowable, among other reasons, for depending from independent claim 1, which is allowable.

Gladney, Rancourt, Mossbeck and JP S61-34951

Claims 10, 11, 13, and 14 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Gladney, in view of teachings and/or suggestions from Rancourt, Mossbeck, and JP S61-34951 U.

Claim 10 recites a mattress assembly comprising a base layer, a coil layer disposed over the base layer, an upper layer disposed over the coil layer, a stabilization layer, and at least one elastomeric cushioning element disposed over the stabilization layer. An elastomeric material of the at least one elastomeric cushioning element seeps through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip *surface* or a reduced slip *surface* on a lower surface of the scrim fabric. The non-slip *surface* or the reduced slip *surface is positioned against* an upper surface of the upper layer. Paragraph **[0031]**.

The teachings of Gladney, Rancourt, and Mossbeck are summarized above.

JP S61-34951 U illustrates a mattress with rows of individually wrapped coils that are positioned adjacent to one another in a series of sleeves.

It is respectfully submitted that none of Gladney, Rancourt, Mossbeck, or JP S61-34951 U provides any teaching or suggestion of a stabilization layer that comprises a scrim fabric through which an elastomeric material of an elastomeric cushioning element seeps to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric. Rancourt does not teach or suggestion that silicone of the silicone contact mat 14 seeps through the anti-friction mat 16. Instead, Rancourt teaches that silicone of the silicone contact mat 14 may extend directly into open cells of an adjacent body support pad 12 to integrate the silicone contact mat 14 with the body support pad 12 (Rancourt, col. 6, lines 56-67) *or* that an anti-friction mat 16 may be positioned between the body support pad 12 and the silicone contact mat 14 "to ensure slipping between" the silicone contact mat 14 and the body support pad 12 (Rancourt, col. 7, lines 1-3).

Moreover, it is respectfully submitted that none of Gladney, Rancourt, Mossbeck, or JP S61-34951 U teaches or suggests that an elastomeric material defines a reduced-slip *surface* or a non-slip *surface positioned against* an upper surface of an upper layer over a coil layer.

Again, the purpose of the optional anti-friction mat 16 of Rancourt is "to ensure slipping between" the silicone contact mat 14 and the body contact pad 12. Rancourt, col. 7, lines 1-3. Thus, silicone could not seep through the anti-friction mat 16 to provide a reduced slip surface of a non-slip surface on the anti-friction mat 16, as a reduced-slip surface of a non-slip surface would not "ensure slipping between" the silicone contact mat 14 and the body support pad 12. Further, in embodiments where silicone of the silicone contact mat 14 extends into cells that open to the upper surface of the body support pad 12 (Rancourt, col. 6, lines 56-67), the silicone could not define a surface that is *positioned against* the upper surface of the body support pad 12.

Furthermore, it is respectfully submitted that none of Gladney, Rancourt, Mossbeck, or JP S61-34951 U provides any teaching or suggestion of an outer covering that encases *both* a coil layer and an elastomeric cushioning element. As the Office has acknowledged, Gladney does not provide any teaching or suggestion of an elastomeric cushioning element (Office Action of July 8, 2021, page 4), so Gladney could not teach or suggest encasement of an elastomeric cushioning element within an outer covering along with the coil layer taught by Gladney.

Although Rancourt teaches an elastomeric cushioning element, the elastomeric cushioning element of Rancourt is a silicone contact mat 14 for use with a body cushioning pad 12, such as a mattress. Rancourt does not teach or suggest that the body cushioning pad includes coils or springs. Instead, the teachings and suggestions of Rancourt are limited to: "the body cushioning pad **12** presents a base **18** made out of lateral bumpers (also referred as framing elements) that surround an array of a plurality of adjacent foam blocks **20** filling a central depression." Rancourt, col. 4, lines 32-35.

Mossbeck teaches a mattress that includes a "pocketed topper **19**" instead of an elastomeric material.

JP S61-34951 U discloses a mattress with coils, but provides no teaching or suggestion regarding the desirability of using such a conventional mattress with an elastomeric cushioning element, let alone of combining mattress coils with an elastomeric cushioning element in the manner required by amended independent claim 10.

Since Gladney, Rancourt, Mossbeck, and JP S61-34951 U, as combined by the Office, do not teach or suggest each and every element of independent claim 10, it is respectfully submitted that the teachings and/or suggestions of these references, as combined by the Office, cannot be

relied upon to establish a *prima facie* case of obviousness against independent claim 10, as would be needed for the Office to maintain 35 U.S.C. § 103 rejections of independent claim 10 and its dependent claims 11, 13, and 14. It is, therefore, respectfully submitted that claims 10, 11, 13, and 14 are allowable under 35 U.S.C. § 103.

Gladney, Rancourt, Mossbeck, JP S61-34951 U, and An

Claim 12 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Gladney, Rancourt, Mossbeck, JP S61-34951, and U.S. Patent 7,757,322 to An ("An").

Claim 12 is allowable, among other reasons, for depending from claim 10, which is allowable.

Gladney, Rancourt, Mossbeck, JP S61-34951 U, and McCann

Claim 15 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Gladney, Rancourt, Mossbeck, JP S61-34951, and U.S. Patent Application Publication US 2005/0223667 A1 of McCann ("McCann").

Claim 15 is allowable, among other reasons, for depending from claim 10, which is allowable.

Gladney in View of Rancourt

Claims 16 and 20 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Gladney, in view of teachings and/or suggestions from Rancourt.

Claim 16 recites a method of forming a mattress assembly. The method of claim 16 includes disposing a coil layer over a base layer, disposing an upper layer over the coil layer, and disposing an elastomeric cushioning element over the upper layer. Upon disposing the elastomeric cushioning element over the upper layer, a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of a stabilization layer on a bottom surface of

the elastomeric cushioning element is positioned against an upper surface of the upper layer. Paragraph **[0031]**.

It is respectfully submitted that neither Gladney nor Rancourt teaches or suggests a method that includes positioning a reduced-slip surface or a non-slip surface against an upper surface of an upper layer. Instead of positioning a reduced-slip surface or a non-slip surface against an upper surface of an upper layer, Rancourt teaches placing an anti-friction mat 16 on the upper surface of the body support pad 12 to enable a silicone contact mat 14 placed over the anti-friction mat 16 to slip relative to the body support pad 12 (Rancourt, col. 7, lines 1-3)—not to prevent slipping between the silicone contact mat 14 and the body support pad 12.

Therefore, it is respectfully submitted that the Office has not established a prima facie case of obviousness against claim 16, as would be needed for the Office to maintain its 35 U.S.C. § 103 rejections of claim 16.

Claim 20 is allowable, among other reasons, for depending from claim 16, which is allowable.

Gladney, Rancourt, and An

Claims 17-19 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Gladney, Rancourt, and An.

Claims 17-19 are allowable, among other reasons, for depending from claim 16, which is allowable.

## CONCLUSION

It is respectfully submitted that each of claims 1-20 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

/brick g power/

Brick G. Power
Registration No, 38,581
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Date: September 8, 2021
BGP/skp

# Electronic Acknowledgement Receipt

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|---|---|
| **EFS ID:** | 43715617 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 08-SEP-2021 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 20:32:44 |
| **Application Type:** | Utility under 35 USC 111(a) |

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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 2021-09-08-Amendment-54023-3030US01.pdf | 140260<br>deb4b5c83eeda06facbd997ae004b692f55f4ac8 | yes | 13 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Response After Final Action | 1 | 1 |
| | Claims | 2 | 5 |
| | Applicant Arguments/Remarks Made in an Amendment | 6 | 13 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 140260 | |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/816,983 | Filing Date<br>11/17/2017 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 09/08/2021 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $480 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /BURNELL L ROSS/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

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**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | |
|---|---|---|
| | 1 | CHINESE NATIONAL INTELLECTUAL PROPERTY ADMINISTRATION, "Second Office Action," Chinese Application No. 201810811684.1, July 5, 2021 |
| | 2 | CANADIAN INTELLECTUAL PROPERTY OFFICE, "Examiner's Report," Canadian Application No. 3,084,510, June 25, 2021 |
| | 3 | EUROPEAN PATENT OFFICE, "Communication pursuant to Article 94(3) EPC", European Application No. 18812494.5, May 3, 2021 |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

✓ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

✓ See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2021-08-03 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15816983 |
| **Filing Date:** | 17-Nov-2017 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Attorney Docket Number:** | 54023-3030US01 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 260 | 260 |
| | | **Total in USD ($)** | | **260** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 43418986 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 03-AUG-2021 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 18:23:22 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $260 |
| RAM confirmation Number | E202183I23441555 |
| Deposit Account | |
| Authorized User | |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 2021-08-03-sb0008a-IDS-540023-3030US01.PDF | 1035106<br>e22e028cf852f32d4797a8bc1e542c4e0936b037 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems. | | | | | |
| 2 | Non Patent Literature | 2021-05-03-Article94Communication-54023-3030WOEP.PDF | 118676<br>c131db90d209e33d2876b41630beaf0d96555105 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 2021-07-05-2ndOA-54023-3030WOCN.PDF | 1029901<br>6e0cd48bc85c702a261c6d6a3bf298bf27de870b | no | 13 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Non Patent Literature | 2021-06-25-OA-CA3084510.pdf | 640829<br>a8668af70547b4f452c65b62c81e3e5b1aebbaa2 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Fee Worksheet (SB06) | fee-info.pdf | 38438<br>c010ac7dd95ab5a6e08f8f2cb8e882260d8f3106 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 2862950 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
**United States Patent and Trademark Office**
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

128128 7590 07/08/2021

Dentons Durham Jones Pinegar
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

| EXAMINER | |
|---|---|
| MCCLURE, MORGAN J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3673 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 07/08/2021 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

djp.ipmail@dentons.com
stacia.boren@dentons.com

| Office Action Summary | Application No. 15/816,983 | Applicant(s) Pearce et al. | |
|---|---|---|---|
| | Examiner MORGAN J MCCLURE | Art Unit 3673 | AIA (FITF) Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☑ Responsive to communication(s) filed on 4/19/2021.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 12/13/2017 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

## DETAILED ACTION

### *Notice of Pre-AIA or AIA Status*

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

### *Response to Arguments*

Applicant's arguments filed 5/3/2021 have been fully considered but they are not persuasive.

Applicant argued that, "Rancourt teaches a mattress with a silicone contact mat 14 that is integrated into a body support pad 12 "by capillarity during curing" of the silicone contact mat 14. Rancourt, col. 6, lines 56 67. As the Office has pointed out, the silicone material may extend completely through one or more anti-friction mats 16 and into cells that open to an upper surface of the body support pad 12. Office Action, pages 2-3; Rancourt, col. 6, line 56, to col. 7, line 7; FIG. 1. Mossbeck teaches that a scrim layer 21 may be positioned between a pocketed spring assembly 12 and a pocketed topper 19. Mossbeck, paragraph [0066]; FIG. 1B. It is respectfully submitted that none of Kluft, Rancourt, or Mossbeck teaches or suggests an elastomeric material that seeps through a stabilization layer to define a reduced-slip surface or a non-slip surface on a lower surface of the stabilization layer. Instead of defining a reduced-slip surface or a non-slip surface on the lower surface of an anti-friction mat 16, the silicone material of Rancourt extends beyond the lower surface of the anti-friction mat 16 and into cells in the upper surface of the body support pad 12, on which the anti-friction mat 16 is placed. Rancourt, col. 6, line 56, to col. 7, line 7. Moreover, it is respectfully submitted that none of Kluft, Rancourt, or Mossbeck teaches or suggests a reduced-slip surface or a non-slip surface that has been formed from an elastomeric material and is positioned against an upper surface of an upper layer over a coil layer. Again, the elastomeric material of Rancourt (i.e., the silicone that passes through the anti-friction mats 16) extends into cells that open to an upper surface of the body support pad 12.

Rancourt, col. 6, line 56, to col. 7, line 7. Thus, the silicone could not define a surface that is positioned against the upper surface of the body support pad 12."

This is not found persuasive. Rancourt teaches, as Applicant points out, that the elastomeric material seeps through a stabilization layer and then into the pores of the upper layer. Thus, in the timeframe before the material seeps through the stabilization layer and into the pores, there would be a nonslip layer between the stabilization layer and the upper layer (See Column 6; lines 60-67 "while the silicone mat is curing, the top surface of the cushioning foam pad 12 is apposed to the bottom surface of the silicone mat 14"; describing the two surfaces being placed next to each other prior to the silicone seeping into the foam cells).

Applicant also argued, "Furthermore, it is respectfully submitted that none of Kluft, Rancourt, Mossbeck, or JP S61-34951 U provides any teaching or suggestion of an outer covering that encases both a coil layer and an elastomeric cushioning element. As the Office has acknowledged, Kluft does not provide any teaching or suggestion of an elastomeric cushioning element (Office Action of July 10, 2020, pages 2-3), so Kluft could not teach or suggest encasement of an elastomeric cushioning element within an outer covering along with the coil layer taught by Kluft. Although Rancourt teaches an elastomeric cushioning element, the elastomeric cushioning element of Rancourt is a body contact mat for use with a body cushioning pad, such as a mattress. Rancourt does not teach or suggest that the body cushioning pad includes coils or springs. Instead, the teachings and suggestions of Rancourt are limited to: "the body cushioning pad 12 presents a base 18 made out of lateral bumpers (also referred as framing elements) that surround an array of a plurality of adjacent foam blocks 20 filling a central depression." Rancourt, col. 4, lines 32-35."

This is not found persuasive. Rancourt teaches an outer covering around the entirety of the contents of a mattress and also the elastomeric layer in a mattress. When combined with Gladney, this results in an outer covering around a mattress with an elastomeric layer.

As a result of Applicant's arguments not being found persuasive, the action is made final and the rejection of the amended claims is set forth below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-9 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281).

a. Regarding claim 1, Gladney teaches a mattress assembly, comprising: a base layer (Figure 1; 14); a coil layer (Figure 1; 12) disposed over the base layer, the coil layer comprising a plurality of pocketed coils (Column 3; lines 16-19 describe pockets around the coils); an upper layer (Figure 1; 22) disposed over the coil layer; a stabilization layer (Figure 2; 22), and a cushioning element (Figure 2; 24) disposed over the upper layer. Gladney does not teach the cushioning element is an elastomeric cushioning element and the stabilization layer comprising a scrim fabric disposed over the upper layer, the elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed and defining a reduced slip surface or a non-slip surface on a lower surface of the stabilization layer, the reduced slip surface or the non-slip surface positioned against an upper surface of the upper layer, and an

outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5, 14 and Column 6; lines 50-67) and a stabilization layer (Column 6; lines 50-67, layer 16 is the stabilization layer equivalent) disposed over the upper layer (Figure la; 12 is the upper layer equivalent) the elastomeric cushioning element disposed over the stabilization layer; an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed and defining a reduced slip surface or a non-slip surface (Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), however in the state before the seeping began, there would be a non-slip surface formed between the two as a result of the elastomeric material's friction with the above surface) on a lower surface of the stabilization layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16), the reduced slip surface or the non-slip surface positioned against an upper surface of the upper layer, and an outer covering (Column 4; lines 19-25) encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Gladney to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer, and it would have been obvious to include an outer covering to protect the internal components and hold them securely together. Mossbeck teaches using scrim as a stabilization layer in a mattress (Figure lb; 21 and Paragraph 66). It would have been obvious to

one of ordinary skill in the art at the time of invention to modify the stabilization layer of Gladney and Rancourt to be scrim as in Mossbeck because doing so would simply be a change of material and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ 416 (CCPA 1960).

b. Regarding claim 2, Gladney does not specifically teach the coil layer has a thickness within a range of about 6.00inches and about 8.00inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the coil layer of Gladney to be between 6 and 8 inches in order to create a sufficiently soft yet elastic surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ402 (CCPA 1961). Gladney also does not specifically teach wherein the elastomeric cushioning element has a thickness within a range of about 2.0 inches to about 4.5 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning element 106 of Gladney to be between 2 and 4 inches in order to create a sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961).

c. Regarding claim 3, Gladney does not specifically teach the coil layer has a thickness of about 7.50 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the coil layer of Gladney to be 7.5 inches in order to create a sufficiently soft yet elastic surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration

within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961). Gladney also does not specifically teach wherein the elastomeric cushioning element has a thickness of about 4 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning element 106 of Gladney to be between about 4 inches in order to create a sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ402 (CCPA 1961).

d. Regarding claim 4, Gladney teaches one or more side panels extending around outer perimeters of the base layer and the upper layer (Figure 2; 100). Rancourt teaches the outer covering also encasing the one or more side panels (Column 4; lines 19-25, the outer covering encases the entire interior structure).

e. Regarding claim 5, Gladney teaches the base layer and the upper layer (Column 2; lines 51- Column 3; line 15) both comprise a polyurethane foam.

f. Regarding claim 6, Rancourt teaches the stabilization layer provides a slip-resistant surface against the upper layer (Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), however in the state before the seeping began, there would be a non-slip surface formed between the two as a result of the elastomeric material's friction with the above surface).

g. Regarding claim 7, Rancourt teaches wherein the stabilization layer is secured to the upper layer ((Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), thus securing the two together through the adhesive of the elastomeric material).

h. Regarding claim 8, Rancourt teaches the stabilization layer is adhesively secured to the upper layer ((Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), thus securing the two together through the adhesive of the elastomeric material).

i. Regarding claim 9, Gladney does not specifically teach the base layer has a thickness of about 0.75 inch and about 1.50 inches, and wherein the upper layer has a thickness of about 0.25inch and about 0.75 inch. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the upper layer of Gladney to be between .25 and .75 inches and the base layer to have a thickness of between .75 and 1.5 inches in order to create a sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961).

2. Claims 10, 11, and 13-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of JP S6134951 (hereafter 'the 951 patent').

j. Regarding claim 10, Gladney teaches a mattress assembly, comprising: a base layer (Figure 1; 14); a coil layer (Figure 1; 12) disposed over the base layer, the coil layer comprising a plurality of pocketed coils (Column 3; lines 16-19 describe pockets around the coils); each pocketed coil of the plurality of pocketed coils comprises: a plurality of casings (Column 3; lines 16-19 describe pockets around the coils which would be casings); and a coil (Figure 1; at 12) disposed within the plurality of casings; an upper layer (Figure 1; 20) disposed over the coil layer; a stabilization layer (Figure 1; 22), and at least one cushioning element (Figure 1; 24) disposed over the upper layer. Gladney does not teach the cushioning element is an elastomeric cushioning element, the stabilization layer comprising a scrim fabric on the upper layer, the

elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the scrim fabric of the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric; the non-slip surface or the reduced slip surface positioned against an upper surface of the upper layer; and an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element, and the coil is a single coil disposed within an innermost casing of the plurality of nested casings. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5,14and Column 6; lines 50-67) and a stabilization layer (Column 6; lines 50-67,16 is the stabilization layer equivalent) on the upper layer (Figure la, 12 is the upper layer equivalent) a bottom of the elastomeric cushioning element, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the stabilization layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16, and Column 4; lines 15-20 describe the layers 16 being present for anti-friction, thus the combination of the attenuation of the silicone and the anti-friction layers 16 provide a non-slip surface on a lower surface of 16 which is secured to and goes against upper layer equivalent 12) the non-slip surface or the reduced slip surface positioned against an upper surface of the upper layer (Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), however in the state before the seeping began, there would be a non-slip surface formed between the two as a result of the elastomeric material's friction with the above surface); and

an outer covering (Column 4; lines 19-25) encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Gladney to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer, and it would have been obvious to include an outer covering to protect the internal components and hold them securely together. The 951 patent teaches and the coil is a single coil disposed within an innermost casing of the plurality of nested casings (Figures 2, A is a single coil within the two nested casings Band D). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Gladney to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid. Mossbeck teaches using scrim as a stabilization layer in a mattress (Figure lb; 21 and Paragraph 66). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the stabilization layer of Gladney and Rancourt to be scrim as in Mossbeck because doing so would simply be a change of material and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ 416 (CCPA 1960).

k. Regarding claim 11, Gladney teaches the plurality of pocketed coils are oriented next to each other in a grid pattern (Figure 1; 12 and Figure 2; as shown).

l. Regarding claim 13, Gladney does not teach the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer. Rancourt teaches the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different

locations over the upper layer (Figure 5; 28). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Gladney to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress.

m. Regarding claim 14, Gladney teaches the at least one cushioning element covers a portion of an upper surface of the upper layer (Figure 1; 24). Rancourt teaches the cushioning element is elastomeric (Figure 5; 28).

3. Claims 12 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) in view of JP S6134951 (hereafter 'the 951 patent') further in view of An (US Patent 7757322).

n. Regarding claim 12, Gladney does not teach the plurality of nested casings of each pocketed coil comprises: a first casing; and a single second casing disposed within the first casing, with the single coil being disposed within the second casing. An teaches the plurality of nested casings of each pocketed coil comprises: a first casing (Figure 20, the foam casing 10a); and a single second casing disposed within the first casing (Figure 20, the pockets each spring is in), with the single coil being disposed within the second casing (Figure 20, 10c). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Gladney to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid.

4. Claim 15 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of JP S6134951 (hereafter 'the 951 patent') further in view of McCann (US Patent Application Publication 20050223667).

o. Regarding claim 15, Gladney and Rancourt do not teach the at least one elastomeric cushioning element comprises a grid of interconnected walls defining hollow buckling columns. McCann teaches the at least one elastomeric cushioning element comprises interconnected buckling walls (abstract). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Rancourt to be buckling as in McCann in order to increase user comfort by creating a deforming surface within the cushion.

5. Claims 16 and 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571).

p. Regarding claim 16, Gladney teaches a method of forming a mattress assembly, comprising: disposing a coil layer (Figure 1; 12) over a base layer (Figure 1; 14); disposing an upper layer (Figure 1; 20) over the coil layer including positioning a stabilization layer against the upper layer (Figure 1; 22); disposing an cushioning element (Figure 1; 24) over the upper layer, and disposing an outer covering over at least the upper layer (Figure 2; 104). Gladney does not teach the cushioning element is an elastomeric cushioning element, bringing the stabilization layer and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer into contact with the upper layer, the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5, 14 and Column 6; lines 50-67), including bringing a stabilization layer(Column 6; lines 50-67,16 is the stabilization layer equivalent) and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer into contact with the upper layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16,

and Column 4; lines 15-20 describe the layers 16 being present for anti-friction, thus the combination of the attenuation of the silicone and the anti-friction layers 16 provide a non-slip surface on a lower surface of 16 which is secured to and goes against upper layer equivalent 12), the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer (Column 6; lines 50-67 and Figure la; 14, 16, and 12). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Gladney to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer.

q. Regarding claim 20, Gladney does not teach securing the stabilization layer to the upper layer. Rancourt teaches securing the stabilization layer to the upper layer ((Column 6; lines 57-67 describe the elastomeric layer being placed against a surface of the layer above (the upper layer) and seeping the elastomeric material into the upper layer (12), thus securing the two together through the adhesive of the elastomeric material).

6. Claims 17-19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Gladney (US Patent 10357113) in view of Rancourt (US Patent 9032571) further in view of An (US Patent 7757322).

r. Regarding claim 17, Gladney teaches individually disposing each coil of the coil layer a first casings (Column 3; lines 16-19 describe pockets around the coils). Gladney does not teach and individually disposing the first casing within a second casing. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Gladney to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid. An teaches and individually disposing the first casing

within a second casing (Figure 20, the pockets are individually disposed within a foam casing). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Gladney to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid.

s. Regarding claim 18, Gladney and Ando not specifically teach wherein individually disposing each coil of the coil layer within the first casing comprises individually disposing the coil within a polypropylene bag. However, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the pockets of Gladney and An to be polypropylene bags in order to provide a tough, chemically resistant layer of protection to the springs and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ416 (CCPA 1960).

t. Regarding claim 19, Gladney and An does not teach individually disposing the first casing within the second casing comprises individually disposing the first casing within a polypropylene bag. However, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the pockets of Gladney and An to be polypropylene bags in order to provide a tough, chemically resistant layer of protection to the springs and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ416 (CCPA 1960).

## ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MORGAN J MCCLURE whose telephone number is (571)270-0362. The examiner can normally be reached on M-F 8:30am - 5:00pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 5712726856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MORGAN J MCCLURE/
Examiner, Art Unit 3673

/NICHOLAS F POLITO/
Primary Examiner, Art Unit 3619
7/2/2021

| Notice of References Cited | Application/Control No. 15/816,983 | Applicant(s)/Patent Under Reexamination Pearce et al. | |
|---|---|---|---|
| | Examiner MORGAN J MCCLURE | Art Unit 3673 | Page 1 of 1 |

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| | B | | | | | |
| | C | | | | | |
| | D | | | | | |
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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
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| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | Examiner | Art Unit |
| | MORGAN J MCCLURE | 3673 |

| CPC - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
| A47C27/20,001,056,06,064,146,148,15 | 01/02/2020 | MM |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
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| US Classification - Searched* | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| | | | |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| Search Notes | | |
|---|---|---|
| Search Notes | Date | Examiner |
| Inventor Name Search | 01/02/2020 | MM |
| Updated Search | 07/02/2020 | MM |
| Inventor Name Search | 01/28/2021 | MM |
| Updated Search | 06/30/2021 | MM |

| Interference Search | | | |
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| US Class/CPC Symbol | US Subclass/CPC Group | Date | Examiner |
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| /MORGAN J MCCLURE/<br>Examiner, Art Unit 3673 | |
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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|---|---|
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| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | | |
|---|---|---|---|
| | 1 | IP Australia, "Examination Report No. 1," Australian Application No. 2018368359, January 20, 2021 | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /MORGAN J MCCLURE/ | Date Considered | 06/30/2021 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2021-04-19 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| S1 | 77,756 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 18:33 |
| S2 | 1,098 | S1 and elastomeric | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 18:34 |
| S3 | 215 | S1 and elastomeric and coil | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:34 |
| S4 | 167 | S1 and elastomeric and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:35 |
| S5 | 92 | S1 and elastomer and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:40 |
| S6 | 77,756 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 20:09 |
| S7 | 92 | S6 and elastomer and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 20:09 |
| S8 | 14 | ("3151344" \| "3242505" \| "3256535" \| "3334951" \| "3959833" \| "3991428" \| "4086673" \| "4122567").PN. OR ("4234981").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:21 |
| S9 | 55 | ("2651788" \| "3166768" \| "3210781" \| "3274625" \| "3702484").PN. OR ("4213214").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:32 |
| S10 | 1,042 | spring and foam and adhesive and S6 | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:45 |
| S11 | 2 | ("2014/0208517").URPN. | USPAT | OR | OFF | 2019/12/30 22:40 |

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| S12 | 26 | ("20130025070" \| "3512192" \| "7424762" \| "20100058541" \| "20110154576" \| "20120180225" \| "20130025068" \| "20120079659" \| "8745795" \| "20140182063" \| "20080095983" \| "20130025069" \| "4092752" \| "20070226911" \| "20110256380" \| "20140059776" \| "6541094" \| "7661164" \| "2610338" \| "20070226911" \| "20120193572" \| "20130167302" \| "6668409" \| "20150335166" \| "5578368" \| "6609261" \| "6954956" \| "8418297" \| "20070061978" \| "5513402" \| "20130025065" \| "3818520" \| "6718583" \| "20040163180" \| "20110173757" \| "5919833" \| "20120060846" \| "4951336" \| "20150296994" \| "20060048301" \| "4504991" \| "20120180225" \| "8414732" \| "5837002" \| "6699266" \| "7469437" \| "3833951" \| "8181293" \| "20090142551" \| "20120022620" \| "20130025068" \| "7827637" \| "20130174344" \| "5513402" \| "4824719").PN. | USPAT | OR | OFF | 2019/12/30 22:46 |
| S13 | 25 | ("3512192").URPN. | USPAT | OR | OFF | 2019/12/30 22:53 |
| S14 | 1,682 | springs and (base with foam) | USPAT | OR | OFF | 2019/12/30 23:10 |
| S15 | 220 | S14 and S6 | USPAT | OR | OFF | 2019/12/30 23:10 |
| S16 | 53 | ("0698529" \| "1270840" \| "1682394" \| "1745986" \| "1959082" \| "20040237204" \| "20060260062" \| "20070204407" \| "20090193591" \| "20100192299" \| "20100223732" \| "20100319137" \| "20110061163" \| "20130192003" \| "2236007" \| "2615180" \| "3046574" \| "3080578" \| "3082438" \| "3099021" \| "3178735" \| "3230558" \| "3462779" \| "4462129" \| "5724686" \| "5787532" \| "6249924" \| "6295676" \| "6353952" \| "6813791" \| "6826796" \| "6889398" \| "6996865" \| "7082635" \| "7617788" \| "7640611" \| "7644461" \| "7917980" \| "7992242").PN. OR ("8918934").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 23:11 |
| S17 | 113 | (pearce and tony).in. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 10:46 |
| S18 | 216 | ("1228783" \| "20020013407" \| "20020061384" \| "20040172766" \| "20050223667" \| "20060194925" \| "20070246157" \| "20090246449" \| "20100229308" \| "2029370" \| "2385870" \| "2458588" \| "2491557" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 10:47 |

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"5289878" | "5314735" | "5330249" |
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"6797765" | "6865759" | "6905431" |
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| | | "7076822" \| "7138079" \| "7444703" \| "7666341" \| "7730566" \| "8075981" \| "8424137" \| "8434748").PN. OR ("8932692").URPN. | | | | |
| S19 | 38 | ("2005/0223667").URPN. | USPAT | OR | OFF | 2020/01/02 10:52 |
| S20 | 77,756 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 11:11 |
| S21 | 319 | S20 and (foam with adhesive) | USPAT | OR | OFF | 2020/01/02 11:11 |
| S22 | 138 | S20 and ((spring coil) with second with (casing case pocket pocketed pocketing cased)) | USPAT | OR | ON | 2020/01/02 11:19 |
| S23 | 7 | S20 and ((spring coil) with (second adj (casing case pocket pocketed pocketing cased))) | USPAT | OR | ON | 2020/01/02 11:21 |
| S24 | 2,903 | A47C27/20,001,056,06,064,146,148,15.cpc. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 11:44 |
| S25 | 77,763 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:34 |
| S26 | 264 | S25 and seep$4 | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:34 |
| S27 | 41 | S25 and (seep$4 with layer) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:35 |
| S28 | 2,989 | A47C27/20,001,056,06,064,146,148,15.cpc. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:39 |
| S29 | 7 | S28 and (elastomer$4 with fus$4) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:39 |
| S30 | 1 | "9032571".pn. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 17:42 |
| S31 | 36 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or | US-PGPUB; USPAT | OR | OFF | 2020/07/02 18:04 |

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| | | US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | | | | |
| S32 | 4 | S31 and (adhesive with foam) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:04 |
| S33 | 77,763 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:12 |
| S34 | 306 | S33 and (foam with (friction (anti adj slip) (anti-slip) slip)) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:12 |
| S35 | 114 | S33 and (foam with (friction (anti adj slip) (anti-slip) slip)) and layers | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:12 |
| S36 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | US-PGPUB; USPAT | OR | OFF | 2020/07/02 18:45 |
| S37 | 16 | S36 and pocket$4 | US-PGPUB; | OR | OFF | 2020/07/02 18:45 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |
| S38 | 1 | (US-7757322-$).did. | USPAT | OR | OFF | 2020/07/02 18:59 |
| S39 | 1 | (US-9032571-$).did. | USPAT | OR | OFF | 2020/07/02 19:01 |
| S40 | 1 | (US-20150223622-$).did. | US-PGPUB | OR | OFF | 2020/07/02 19:01 |
| S41 | 3 | S38 S39 S40 | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 19:01 |
| S42 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | US-PGPUB; USPAT | OR | OFF | 2021/01/28 16:27 |
| S43 | 2 | S42 and scrim | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/01/28 16:27 |
| S44 | 206 | B68G7/051.cpc. | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/01 12:57 |
| S45 | 77,761 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 15:17 |
| S46 | 24 | S45 and (foam with (porous pores) with (glue adhesive adher adherring adhering adherred adhered glued gluing glues)) | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 15:17 |
| S47 | 64 | ("20010018466" \| "20010056129" \| "20030135930" \| "20040098806" \| "20040211005" \| "20070113352" \| "3308491" \| | US-PGPUB; | OR | OFF | 2021/02/09 15:28 |

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| | | "5077849" \| "5107558" \| "5231717" \| "5636395" \| "5678266" \| "5768251" \| "5963998" \| "6041459" \| "6343839" \| "6629728" \| "6701556" \| "6726904" \| "6739008" \| "6762243" \| "6809143").PN. OR ("8307482").URPN. | USPAT; USOCR | | | |
| S48 | 1 | "5,537,699".pn. | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 15:52 |
| S49 | 179 | (cushion mattress pillow) and (foam with (porous pores) with (glue adhesive adher adherring adhering adherred adhered glued gluing glues)) | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 15:55 |
| S50 | 158 | S49 not S46 | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 15:55 |
| S51 | 48 | S45 and (foam with (open) with (glue adhesive adher adherring adhering adherred adhered glued gluing glues)) | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/02/09 16:14 |
| S52 | 1 | "8434748".pn. | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/06/23 19:31 |
| S53 | 243 | gel with scrim | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/06/23 19:32 |
| S54 | 74 | ("0681124" \| "1432875" \| "1873607" \| "1986255" \| "2002157" \| "2154910" \| "2610334" \| "2675566" \| "2709819" \| "2755215" \| "2862214" \| "3032782" \| "3148387" \| "3242505" \| "3502316" \| "3596299" \| "3636574" \| "3722013" \| "3822426" \| "3846857" \| "3848283" \| "3855653" \| "4286344" \| "4324011" \| "4326311" \| "4369534" \| "4429427" \| "4449261" \| "4476595" \| "4607402" \| "4662011" \| "4794658" \| "4872228" \| "4975996" \| "4980940" \| "5027459" \| "5040255" \| "5210890" \| "5222264" \| "5239715" \| "5513401" \| "5537699" \| "5704085" \| "5724686" \| "6223370" \| "6249924").PN. OR ("7640611").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/06/24 13:50 |
| S55 | 16 | S54 and pocket and foam | US-PGPUB; | OR | ON | 2021/06/24 13:50 |

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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |

**EAST Search History (Interference)**

<This search history is empty>

6/30/2021 6:25:30 PM
C:\Users\mmcclure\Documents\EAST\Workspaces\15816983 elastomeric mattress.wsp

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/816,983 | Filing Date<br>11/17/2017 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 05/03/2021 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $480 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | OPAC |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /BRIDGET C. MONROE/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Purple Innovation, LLC

**Application No.:** 15/816,983

**Filed:** November 17, 2017

**Confirmation No.:** 9411

**For:** MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS

**Art Unit:** 3673

**Examiner:** McClure, Morgan J.

**Attorney Docket No.:** 54023-3030US01

VIA EFS
May 3, 2021

**AMENDMENT**

Commissioner for Patents
United States Patent and Trademark Office
P. O. BOX 1450
Alexandria, VA 22313-1450

Examiner:

This Amendment follows the Office Action of February 3, 2021.

A listing of the claims, in which revisions to the claims are presented, begins on page 2 of this paper; and

Remarks start at page 6 of this paper.

IN THE CLAIMS

1. (Currently amended) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric ~~disposed over the upper layer~~;

an elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed and defining a reduced slip surface or a non-slip surface on a lower surface of the stabilization layer, the reduced slip surface or the non-slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element.

2. (Previously presented) The mattress assembly of claim 1, wherein:

the coil layer has a thickness of about 6.00 inches to about 8.00 inches; and

the elastomeric cushioning element has a thickness of about 2.0 inches to about 4.5 inches.

3. (Previously presented) The mattress assembly of claim 2, wherein:

the coil layer has a thickness of about 7.50 inches; and

the elastomeric cushioning element has a thickness of about 4.0 inches.

4. (Previously presented) The mattress assembly of claim 1, further comprising:

one or more side panels extending around outer perimeters of the base layer and the upper layer, the outer covering also encasing the one or more side panels.

5. (Original) The mattress assembly of claim 1, wherein the base layer and the upper layer both comprise a polyurethane foam.

6. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer provides a slip-resistant surface against the upper layer.

7. (Previously presented) The mattress assembly of claim 1, wherein the stabilization layer is secured to the upper layer.

8. (Previously presented) The mattress assembly of claim 7, wherein the stabilization layer is adhesively secured to the upper layer.

9. (Previously presented) The mattress assembly of claim 1, wherein the base layer has a thickness of about 0.75 inches to about 1.50 inches and the upper layer has a thickness of about 0.25 inches to about 0.75 inches.

10. (Currently amended) A mattress assembly, comprising:

a base layer;

a coil layer disposed over the base layer, the coil layer comprising a plurality of pocketed coils, each pocketed coil of the plurality of pocketed coils comprising:

a plurality of nested casings; and

a single coil disposed within an innermost casting of the plurality of nested casings;

an upper layer disposed over the coil layer;

a stabilization layer comprising a scrim fabric ~~on the upper layer~~; and

at least one elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the at least one elastomeric cushioning element seeping through the scrim fabric of the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric, the non-slip surface or the reduced slip surface positioned against an upper surface of the upper layer; and

an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the at least one elastomeric cushioning element.

11. (Original) The mattress assembly of claim 10, wherein the plurality of pocketed coils are oriented next to each other in a grid pattern.

12. (Previously presented) The mattress assembly of claim 10, wherein the plurality of nested casings of each pocketed coil comprises:
a first casing; and
a single second casing disposed within the first casing, with the single coil being disposed within the second casing.

13. (Original) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer.

14. (Previously presented) The mattress assembly of claim 10, wherein the at least one elastomeric cushioning element covers a portion of an upper surface of the upper layer.

15. (Previously presented) The mattress assembly of claim 11, wherein the at least one elastomeric cushioning element comprises a grid of interconnected walls defining hollow buckling columns.

16. (Currently amended) A method of forming a mattress assembly, comprising:

disposing a coil layer over a base layer;

disposing an upper layer over the coil layer;

disposing an elastomeric cushioning element over the upper layer including ~~bringing~~ positioning a stabilization layer and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer ~~into contact with~~ against the upper layer, the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer; and

encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element in an outer casing.

17. (Previously presented) The method of claim 16, further comprising:

individually disposing each coil of the coil layer within a first casing; and

individually disposing the first casing within a second casing.

18. (Previously presented) The method of claim 17, wherein individually disposing each coil of the coil layer within the first casing comprises individually disposing the coil within a polypropylene bag.

19. (Previously presented) The method of claim 18, wherein individually disposing the first casing within the second casing comprises individually disposing the first casing within a polypropylene bag.

20. (Previously presented) The method of claim 16, further comprising:

securing the stabilization layer to the upper layer.

## REMARKS

The Office Action of February 3, 2021 has been received and considered.

Claims 1-20 are currently pending in the above-captioned application. The Office has considered and rejected claims 1-20.

Reconsideration of the application is respectfully requested.

### Rejections under 35 U.S.C. § 103

The Office has rejected claims 1-20 under 35 U.S.C. § 103.

There are several requirements for establishing a *prima facie* case of obviousness against the claims of a patent application. All of the limitations of the claim must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Even when the art teaches or suggests each and every claim element, a claim "is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007). A mere conclusory statement that one of ordinary skill in the art would have been motivated to combine or modify reference teachings simply will not suffice. *KSR* at 1396. The Office must also establish that one of ordinary skill in the art would have been able to predict that the purported modification or combination of reference teachings would have been successful. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). To meet its burden, the Office must provide "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR* at 1396, quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The articulated reasoning must be found in the prior art or common knowledge to those of ordinary skill in the art, or be derived from the nature of the problem itself; it cannot be based upon the Applicant's disclosure or the Examiner's own hindsight analysis. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006).

#### Kluft, Rancourt, and Mossbeck

Claims 1-5 and 9 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from U.S. Patent 7,640,611 to Kluft ("Kluft"), in view of teachings and/or suggestions from U.S.

Patent 9,032,571 to Rancourt et al. ("Rancourt") and U.S. Patent Application Publication US 2014/0373281 A1 of Mossbeck ("Mossbeck").

Independent claim 1 is directed to a mattress assembly comprising a base layer, a coil layer, an upper layer over the coil layer, a stabilization layer, and an elastomeric cushioning element over the stabilization layer. Independent claim 1 further recites that the stabilization layer is secured to a bottom of the elastomeric cushioning element with an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer. Elastomeric material is exposed on a lower surface of the stabilization layer. As amended, independent claim 1 recites that the elastomeric material defines a reduced-slip *surface* of a non-slip *surface* on a lower surface of the stabilization layer. Paragraph **[0031]**. In addition, amended independent claim 1 recites that the reduced-slip *surface* or the non-slip *surface* is *positioned against* an upper surface of the upper layer. *Id.*

Kluft teaches a mattress with a foam encasement that surrounds individually wrapped coils. Kluft, col. 3, line 59, to col. 4, line 27. Kluft also teaches placing a sheet layer 100 between the coil layer and an upper layer of the foam encasement. Kluft, col. 4, lines 56-67.

Rancourt teaches a mattress with a silicone contact mat 14 that is integrated into a body support pad 12 "by capillarity during curing" of the silicone contact mat 14. Rancourt, col. 6, lines 56 67. As the Office has pointed out, the silicone material may extend completely through one or more anti-friction mats 16 and into cells that open to an upper surface of the body support pad 12. Office Action, pages 2-3; Rancourt, col. 6, line 56, to col. 7, line 7; FIG. 1.

Mossbeck teaches that a scrim layer 21 may be positioned between a pocketed spring assembly 12 and a pocketed topper 19. Mossbeck, paragraph **[0066]**; FIG. 1B.

It is respectfully submitted that none of Kluft, Rancourt, or Mossbeck teaches or suggests an elastomeric material that seeps through a stabilization layer to define a reduced-slip surface or a non-slip surface on a lower surface of the stabilization layer. Instead of defining a reduced-slip surface or a non-slip surface on the lower surface of an anti-friction mat 16, the silicone material of Rancourt extends beyond the lower surface of the anti-friction mat 16 and into cells in the upper surface of the body support pad 12, on which the anti-friction mat 16 is placed. Rancourt, col. 6, line 56, to col. 7, line 7.

Moreover, it is respectfully submitted that none of Kluft, Rancourt, or Mossbeck teaches or suggests a reduced-slip *surface* or a non-slip *surface* that has been formed from an elastomeric material and is *positioned against* an upper surface of an upper layer over a coil layer. Again, the elastomeric material of Rancourt (*i.e.,* the silicone that passes through the anti-friction mats 16) extends into cells that open to an upper surface of the body support pad 12. Rancourt, col. 6, line 56, to col. 7, line 7. Thus, the silicone could not define a surface that is *positioned against* the upper surface of the body support pad 12.

For these reasons, it is respectfully submitted that the teachings and/or suggestions of Kluft, Rancourt, and Mossbeck, as combined by the Office, cannot be relied upon to establish a prima facie case of obviousness against amended independent claim 1, as would be needed for the Office to maintain its 35 U.S.C. § 103 rejection of independent claim 1.

Claims 2-5 and 9 are allowable, among other reasons, for depending from independent claim 1, which is allowable.

Kluft, Rancourt, Mossbeck, and Mobley

Claim 6 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, in view of teachings and/or suggestions from Rancourt, Mossbeck, and U.S. Patent Application Publication US 2015/0223622 A1 of Mobley ("Mobley").

Claim 6 is allowable, among other reasons, for depending from independent claim 1, which is allowable.

Kluft, Rancourt, Mossbeck, and Lauer

Claims 7 and 8 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, in view of teachings and/or suggestions from Rancourt, Mossbeck, and U.S. Patent Application Publication US 2014/0130265 A1 of Lauer ("Lauer").

Claims 7 and 8 are allowable, among other reasons, for depending from independent claim 1, which is allowable.

Kluft, Rancourt, Mossbeck, and JP S61-34951

Claims 10, 11, 13, and 14 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, in view of teachings and/or suggestions from Rancourt, Mossbeck, and JP S61-34951 U.

Independent claim 10 is directed to a mattress assembly comprising a base layer, a coil layer disposed over the base layer, an upper layer disposed over the coil layer, a stabilization layer, and at least one elastomeric cushioning element disposed over the stabilization layer. An elastomeric material of the at least one elastomeric cushioning element seeps through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip *surface* or a reduced slip *surface* on a lower surface of the scrim fabric. As amended, independent claim 10 further recites that the non-slip *surface* or the reduced slip *surface is positioned against* an upper surface of the upper layer. Paragraph **[0031]**.

The teachings of Kluft, Rancourt, and Mossbeck are summarized above.

JP S61-34951 U illustrates a mattress with rows of individually wrapped coils that are positioned adjacent to one another in a series of sleeves.

It is respectfully submitted that none of Kluft, Rancourt, Mossbeck, or JP S61-34951 U provides any teaching or suggestion of a stabilization layer that comprises a scrim fabric through which an elastomeric material of an elastomeric cushioning element seeps to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric. Instead of defining a reduced-slip surface or a non-slip surface on the lower surface of an anti-friction mat 16, the silicone material of Rancourt extends beyond the lower surface of the anti-friction mat 16 and into cells in the upper surface of the body support pad 12, on which the anti-friction mat 16 is placed. Rancourt, col. 6, line 56, to col. 7, line 7.

Moreover, it is respectfully submitted that none of Kluft, Rancourt, Mossbeck, or JP S61-34951 U teaches or suggests that an elastomeric material defines a reduced-slip *surface* or a non-slip *surface positioned against* an upper surface of an upper layer over a coil layer. Instead of being positioned against an upper surface of the body support mat 12, Rancourt teaches that the elastomeric material (*i.e.,* the silicone that passes through the anti-friction

mats 16) extends the upper surface of the body support pad 12 or, more specifically, into cells that open to the upper surface of the body support pad 12. Rancourt, col. 6, line 56, to col. 7, line 7. Thus, the silicone could not define a surface that is *positioned against* the upper surface of the body support pad 12.

Furthermore, it is respectfully submitted that none of Kluft, Rancourt, Mossbeck, or JP S61-34951 U provides any teaching or suggestion of an outer covering that encases *both* a coil layer and an elastomeric cushioning element. As the Office has acknowledged, Kluft does not provide any teaching or suggestion of an elastomeric cushioning element (Office Action of July 10, 2020, pages 2-3), so Kluft could not teach or suggest encasement of an elastomeric cushioning element within an outer covering along with the coil layer taught by Kluft.

Although Rancourt teaches an elastomeric cushioning element, the elastomeric cushioning element of Rancourt is a body contact mat for use with a body cushioning pad, such as a mattress. Rancourt does not teach or suggest that the body cushioning pad includes coils or springs. Instead, the teachings and suggestions of Rancourt are limited to: "the body cushioning pad **12** presents a base **18** made out of lateral bumpers (also referred as framing elements) that surround an array of a plurality of adjacent foam blocks **20** filling a central depression." Rancourt, col. 4, lines 32-35.

Mossbeck teaches a mattress that includes a "pocketed topper **19**" instead of an elastomeric material.

JP S61-34951 U discloses a mattress with coils, but provides no teaching or suggestion regarding the desirability of using such a conventional mattress with an elastomeric cushioning element, let alone of combining mattress coils with an elastomeric cushioning element in the manner required by amended independent claim 10.

Since Kluft, Rancourt, Mossbeck, and JP S61-34951 U, as combined by the Office, do not teach or suggest each and every element of independent claim 10, it is respectfully submitted that the teachings and/or suggestions of these references, as combined by the Office, cannot be relied upon to establish a *prima facie* case of obviousness against independent claim 10, as would be needed for the Office to maintain 35 U.S.C. § 103 rejections of independent claim 10 and its dependent claims 11, 13, and 14. It is, therefore, respectfully submitted that claims 10, 11, 13, and 14 are allowable under 35 U.S.C. § 103.

Kluft, Rancourt, Mossbeck, JP S61-34951 U, and An

Claim 12 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, Rancourt, Mossbeck, JP S61-34951 U, and U.S. Patent 7,757,322 to An ("An").

Claim 12 is allowable, among other reasons, for depending from independent claim 10, which is allowable.

Kluft, Rancourt, Mossbeck, JP S61-34951 U, and McCann

Claim 15 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, Rancourt, Mossbeck, JP S61-34951 U, and U.S. Patent Application Publication US 2005/0223667 A1 of McCann ("McCann").

Claim 15 is allowable, among other reasons, for depending from independent claim 10, which is allowable.

Kluft in view of Rancourt

Claim 16 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft in view of teachings and/or suggestions from Rancourt.

In view of the foregoing, withdrawal of the 35 U.S.C. § 103(a) rejections of claims is respectfully solicited, as is the allowance of these claims.

Independent claim 16 is directed to a method of forming a mattress assembly. The method of independent claim 16, as amended, includes disposing a coil layer over a base layer, disposing an upper layer over the coil layer, and disposing an elastomeric cushioning element over the upper layer. Upon disposing the elastomeric cushioning element over the upper layer, a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of a stabilization layer on a bottom surface of the elastomeric cushioning element is positioned against an upper surface of the upper layer. Paragraph **[0031]**.

It is respectfully submitted that neither Kluft nor Rancourt provides any teaching or suggestion of a method that includes positioning a reduced-slip surface or a non-slip surface against an upper surface of an upper layer. Instead of positioning a reduced-slip surface or a non-slip surface against an upper surface of an upper layer, Rancourt teaches placing an anti-friction mat 16 on the upper surface of the body support pad 12, then allowing silicone material to pass through the anti-friction mat 16 and into the upper surface of the body support pad 12, into cells that open to the upper surface of the body support pad 12. Rancourt, col. 6, line 56, to col. 7, line 7.

Kluft, Rancourt, and An

Claims 17-19 have been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, Rancourt, and An.

Claims 17-19 are allowable, among other reasons, for depending from independent claim 16, which is allowable.

Kluft, Rancourt, and Lauer

Claim 20 has been rejected under 35 U.S.C. § 103 for being drawn to subject matter that is purportedly not patentable over teachings and/or suggestions from Kluft, Rancourt, and Lauer.

Claim 20 is allowable, among other reasons, for depending from independent claim 16, which is allowable.

## CONCLUSION

It is respectfully submitted that each of claims 1-20 is allowable. An early notice of the allowability of each of these claims is respectfully solicited. If any issues preventing allowance

of the above-captioned application remain, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

/brick g power/

Brick G. Power
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Date: May 3, 2021
BGP/skp

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 42625876 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 03-MAY-2021 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 20:26:19 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 2021-05-03-Amendment-54023-3030US01.pdf | 524368<br>ac4384c0643f41ba83e79c6d91676c8c4e168afa | yes | 13 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment/Req. Reconsideration-After Non-Final Reject | 1 | 1 |
| | Claims | 2 | 5 |
| | Applicant Arguments/Remarks Made in an Amendment | 6 | 13 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 524368 | |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 4685727 | A | 1987-08-11 | Cremer et al. | |
| | 2 | 5107558 | A | 1992-04-28 | Luck | |
| | 3 | 5179742 | A | 1993-01-19 | Oberle | |
| | 4 | 5613257 | A | 1997-03-25 | Graebe | |
| | 5 | 8997279 | A | 2015-04-07 | McKay | |
| | 6 | 10881217 | A | 2021-01-05 | Moon et al. | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 20030135930 | A1 | 2003-07-24 | Varese et al. | |
| | 2 | 20090100606 | A1 | 2009-04-23 | An | |
| | 3 | 20100192299 | A1 | 2010-08-05 | Schermel et al. | |
| | 4 | 20150217534 | A1 | 2015-08-06 | Rancourt et al. | |
| | 5 | 20150231007 | A1 | 2015-08-20 | Vrzalik et al. | |
| | 6 | 20170251825 | A1 | 2017-09-07 | Pearce | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
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| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | |
|---|---|---|
| | 1 | IP Australia, "Examination Report No. 1," Australian Application No. 2018368359, January 20, 2021 |

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**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

✓ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2021-04-19 |
|---|---|---|---|
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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# Electronic Patent Application Fee Transmittal

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|---|---|
| **Application Number:** | 15816983 |
| **Filing Date:** | 17-Nov-2017 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Attorney Docket Number:** | 54023-3030US01 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 260 | 260 |
| | | **Total in USD ($)** | | **260** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 42494049 |
| **Application Number:** | 15816983 |
| **International Application Number:** | |
| **Confirmation Number:** | 9411 |
| **Title of Invention:** | MATTRESSES INCLUDING AN ELASTOMERIC CUSHIONING ELEMENT AND A POCKETED COIL LAYER AND RELATED METHODS |
| **First Named Inventor/Applicant Name:** | Tony M. Pearce |
| **Customer Number:** | 128128 |
| **Filer:** | Brick Glenn Power/stacia pentz-boren |
| **Filer Authorized By:** | Brick Glenn Power |
| **Attorney Docket Number:** | 54023-3030US01 |
| **Receipt Date:** | 19-APR-2021 |
| **Filing Date:** | 17-NOV-2017 |
| **Time Stamp:** | 21:34:04 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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| Payment Type | DA |
| Payment was successfully received in RAM | $260 |
| RAM confirmation Number | E20214IL34181781 |
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|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 2021-04-19-sb0008a-IDS-54023-3030US01.PDF | 1035469<br>debc8db9edfaaf8dea477ad31f4d9310bd433ca1 | no | 5 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 2021-01-20-OA-AU2018368359.PDF | 237861<br>31e871d463d2aed7c1417961625d5dfbdb0f7dff | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 30920<br>a24a068c06573067fc5884b103cb1f0e305ef910 | no | 2 |
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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

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**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/816,983 | 11/17/2017 | Tony M. Pearce | 54023-3030US01 | 9411 |

128128 7590 02/03/2021

Durham Jones & Pinegar, P.C.
Intellectual Property Law Group
3301 N. Thanksgiving Way, Suite 400
Lehi, UT 84043

| EXAMINER | |
|---|---|
| MCCLURE, MORGAN J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3673 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/03/2021 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

apower@djplaw.com
ipmail@djplaw.com
sboren@djplaw.com

| Office Action Summary | Application No. 15/816,983 | Applicant(s) Pearce et al. | |
|---|---|---|---|
| | Examiner MORGAN J MCCLURE | Art Unit 3673 | AIA (FITF) Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☑ Responsive to communication(s) filed on 10/8/2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 12/13/2017 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

## DETAILED ACTION

### *Notice of Pre-AIA or AIA Status*

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

### *Response to Arguments*

Applicant's arguments filed 9/10/2020 have been fully considered but they are not persuasive. Applicant argued that, "It is respectfully submitted that neither Kluft nor Rancourt, either alone or when combined in the manner that has been asserted by the Office, teaches or suggests a stabilization layer through which an elastomeric material seeps to secure an elastomeric cushioning element to an upper surface of the stabilization layer, with the elastomeric material being exposed on a lower surface of the stabilization layer. The Office has already acknowledged at pages 2-3 of the Office Action of July 10, 2020 that Kluft lacks any teaching or suggestion of "an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer." Rancourt acknowledges that "liquid silicone [only] gets into the foam cells" of the body support pad 12 "over a small thickness..." Because neither Kluft nor Rancourt teaches or suggests elastomeric material exposed on a lower surface of a stabilization layer, as required by amended independent claim 1 and amended independent claim 16, it is respectfully submitted that the teachings and/or suggestions of Kluft and Rancourt, as combined by the Office, cannot be relied upon to establish a prima facie case of obviousness against amended independent claim 1, amended independent claim 16, or any of their respective dependent claims."

This is not found persuasive. In Rancourt Column 6; lines 55-67, Rancourt states, "while the silicone mat is curing, the top surface of the cushioning foam pad 12 is apposed to the bottom surface of the silicone mat 14, such that by capillarity, the liquid silicone gets into the foam cells over a small thickness, thereby mechanically integrating both surfaces together during curing." However, Figure 1a

also shows the layers 16 between 14 and 12. If the small thickness of liquid silicone integrates into the foam pad 12, then it must necessarily go through the entirety, top and bottom surfaces of layer 16. Layer 16 adds to the stability of the apparatus, both by being an additional structural layer, and by having antifriction properties. As such, the interpretation as set forth in the rejection below meets the claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-5 and 9 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281).

a. Regarding claim 1, Kluft teaches a mattress assembly, comprising: a base layer (Figure 2; 60 (the portion under the springs 156)); a coil layer (Figure 2; 156) disposed over the base layer, the coil layer comprising a plurality of pocketed coils (Figure 2; 156, shows pockets around the coils); an upper layer (Figure 2; 102) disposed over the coil layer; a stabilization layer (Figure 2; 104) disposed over the upper layer, and a cushioning element (Figure 2; 106) disposed over the upper layer. Kluft does not teach the cushioning element is an elastomeric cushioning element and the stabilization layer comprising a scrim fabric disposed over the upper layer, the elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper

surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed on a lower surface of the stabilization layer, and an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5,14 and Column 6; lines 50-67) and a stabilization layer (Column 6; lines 50-67, layer 16 is the stabilization layer equivalent) disposed over the upper layer (Figure 1a; 12 is the upper layer equivalent) the elastomeric cushioning element disposed over the stabilization layer; an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element, the elastomeric material exposed on a lower surface of the stabilization layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16) and an outer covering (Column 4; lines 19-25) encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Kluft to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer, and it would have been obvious to include an outer covering to protect the internal components and hold them securely together. Mossbeck teaches using scrim as a stabilization layer in a mattress (Figure 1b; 21 and Paragraph 66). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the stabilization layer of Kluft and Rancourt to be scrim as in Mossbeck because doing so would simply be a change of material and the selection of a known material based upon its suitability

for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

b. Regarding claim 2, Kluft does not specifically teach the coil layer has a thickness within a range of about 6.00inches and about 8.00inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the coil layer of Kluft to be between 6 and 8 inches in order to create a sufficiently soft yet elastic surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ402 (CCPA 1961). Kluft also does not specifically teach wherein the elastomeric cushioning element has a thickness within a range of about 2.0 inches to about 4.5 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning element 106 of Kluft to be between 2 and 4 inches in order to create a sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961).

c. Regarding claim 3, Kluft does not specifically teach the coil layer has a thickness of about 7.50 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the coil layer of Kluft to be 7.5 inches in order to create a sufficiently soft yet elastic surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961). Kluft also does not specifically teach wherein the elastomeric cushioning element has a thickness of about 4 inches. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning element 106 of Kluft to be between about 4 inches in order to create a

sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961).

d. Regarding claim 4, Kluft teaches one or more side panels extending around outer perimeters of the base layer and the upper layer (Figure 5; 124). Rancourt teaches the outer covering also encasing the one or more side panels (Column 4; lines 19-25, the outer covering encases the entire interior structure).

e. Regarding claim 5, Kluft teaches the base layer (Column 3; lines 60-65) and the upper layer (Column 4; lines 57-60) both comprise a polyurethane foam.

f. Regarding claim 9, Kluft does not specifically teach the base layer has a thickness of about 0.75 inch and about 1.50 inches, and wherein the upper layer has a thickness of about 0.25inch and about 0.75 inch. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the upper layer of Kluft to be between .25 and .75 inches and the base layer to have a thickness of between .75 and 1.5 inches in order to create a sufficiently soft surface according to user preference, and doing so would simply be an optimization of proportions, and the optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839,129 USPQ 402 (CCPA 1961).

2. Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of Mobley (US Patent Application Publication 20150223622).

g. Regarding claim 6, Kluft and Rancourt do not specifically teach the stabilization layer provides a slip-resistant surface against the upper layer. Mobley teaches the stabilization layer provides a slip-resistant surface against the upper layer (Paragraph 14discusses foaming foams of a high friction material to inhibit friction against other layers of foam in a cushion device). It

would have been obvious to one of ordinary skill in the art at the time of invention to modify the foam of Kluft and Rancourt to have a high coefficient of friction in order to "inhibit slippage therebetween" (Paragraph 14of Mobley).

3. Claims 7 and 8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of Lauer (US Patent Application Publication 20140130265).

h. Regarding claim 7, Kluft does not teach wherein the stabilization layer is secured to the upper layer. Lauer teaches wherein the stabilization layer is secured to the upper layer (Claim 22). It would have been obvious to one of ordinary skill in the art to use an adhesive on the layers of Kluft and Rancourt in order to prevent sliding of the layers in relation to each other.

i. Regarding claim 8, Kluft does not specifically teach the stabilization layer is adhesively secured to the upper layer. Lauer teaches the stabilization layer is adhesively secured to the upper layer (Claim 22). It would have been obvious to one of ordinary skill in the art to use an adhesive on the layers of Kluft and Rancourt in order to prevent sliding of the layers in relation to each other.

4. Claims 10,11, and 13-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of JP S6134951 (hereafter 'the 951 patent').

j. Regarding claim 10, Kluft teaches a mattress assembly, comprising: a base layer (Figure 2; 60 (the portion under the springs 156)); a coil layer (Figure 2; 156) disposed over the base layer, the coil layer comprising a plurality of pocketed coils (Figure 2; 156, shows pockets around the coils); each pocketed coil of the plurality of pocketed coils comprises: a plurality of casings (Figure 1; 84); and a coil (Figure 2; 156) disposed within the plurality of casings; an upper layer (Figure 2; 102) disposed over the coil layer; a stabilization layer (Figure 2; 104) disposed over the

upper layer, and at least one cushioning element (Figure 2; 106) disposed over the upper layer. Kluft does not teach the cushioning element is an elastomeric cushioning element, the stabilization layer comprising a scrim fabric on the upper layer, the elastomeric cushioning element disposed over the stabilization layer, an elastomeric material of the elastomeric cushioning element seeping through the scrim fabric of the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the scrim fabric; and an outer covering encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element, and the coil is a single coil disposed within an innermost casing of the plurality of nested casings. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5,14 and Column 6; lines 50-67) and a stabilization layer (Column 6; lines 50-67, 16 is the stabilization layer equivalent) on the upper layer (Figure 1a, 12 is the upper layer equivalent) a bottom of the elastomeric cushioning element, an elastomeric material of the elastomeric cushioning element seeping through the stabilization layer to secure an upper surface of the stabilization layer to the elastomeric cushioning element and to provide a non-slip surface or a reduced slip surface on a lower surface of the stabilization layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16, and Column 4; lines 15-20 describe the layers 16 being present for anti-friction, thus the combination of the attenuation of the silicone and the anti-friction layers 16 provide a non-slip surface on a lower surface of 16 which is secured to and goes against upper layer equivalent 12) and an outer covering (Column 4; lines 19-25) encasing the base layer, the coil layer, the upper layer, the stabilization layer, and the elastomeric cushioning element. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Kluft to be elastomeric as in Rancourt in order to increase

user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer, and it would have been obvious to include an outer covering to protect the internal components and hold them securely together. The 951 patent teaches and the coil is a single coil disposed within an innermost casing of the plurality of nested casings (Figures 2, A is a single coil within the two nested casings Band D). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Kluft to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid. Mossbeck teaches using scrim as a stabilization layer in a mattress (Figure 1b; 21 and Paragraph 66). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the stabilization layer of Kluft and Rancourt to be scrim as in Mossbeck because doing so would simply be a change of material and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

k. Regarding claim 11, Kluft teaches the plurality of pocketed coils are oriented next to each other in a grid pattern (Figure 1; 80, 84).

l. Regarding claim 13, Kluft does not teach the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer. Rancourt teaches the at least one elastomeric cushioning element comprises a plurality of distinct elastomeric cushioning elements disposed at different locations over the upper layer (Figure 5; 28). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Kluft to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress.

m. Regarding claim 14, Kluft does not teach the at least one cushioning element covers a portion of an upper surface of the upper layer (Figure 1; 106). Rancourt teaches the cushioning element is elastomeric (Figure 5; 28).

5. Claims 12 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) in view of JP S6134951 (hereafter 'the 951 patent') further in view of An (US Patent 7757322).

n. Regarding claim 12, Kluft does not teach the plurality of nested casings of each pocketed coil comprises: a first casing; and a single second casing disposed within the first casing, with the single coil being disposed within the second casing. An teaches the plurality of nested casings of each pocketed coil comprises: a first casing (Figure 20, the foam casing 10a); and a single second casing disposed within the first casing (Figure 20, the pockets each spring is in), with the single coil being disposed within the second casing (Figure 20, 10c). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Kluft to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid.

6. Claim 15 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) in view of Mossbeck (US Patent Application Publication 20140373281) further in view of JP S6134951 (hereafter 'the 951 patent') further in view of McCann (US Patent Application Publication 20050223667).

o. Regarding claim 15, Kluft and Rancourt do not teach the at least one elastomeric cushioning element comprises a grid of interconnected walls defining hollow buckling columns. McCann teaches the at least one elastomeric cushioning element comprises interconnected buckling walls (abstract). It would have been obvious to one of ordinary skill in the art at the

time of invention to modify the cushioning layer 106 of Rancourt to be buckling as in McCann in order to increase user comfort by creating a deforming surface within the cushion.

7. Claim 16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571).

p. Regarding claim 16, Kluft teaches method of forming a mattress assembly, comprising: disposing a coil layer (Figure 2; 156) over a base layer (Figure 2; 60 (the portion under the springs 156)); disposing an upper layer (Figure 2; 102) over the coil layer including bringing a stabilization layer into contact with the upper layer (Figure 2; 104); disposing an cushioning element (Figure 2; 106) over the upper layer, and disposing an outer covering over at least the upper layer (Figure 1; outermost layer of 108). Kluft does not teach the cushioning element is an elastomeric cushioning element, bringing the stabilization layer and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer into contact with the upper layer, the stabilization layer being located on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer. Rancourt teaches the cushioning element is an elastomeric cushioning element (Figure 5, 14 and Column 6; lines 50-67), including bringing a stabilization layer (Column 6; lines 50-67, 16 is the stabilization layer equivalent) and a non-slip surface or a reduced slip surface formed by elastomeric material on a lower surface of the stabilization layer into contact with the upper layer (Column 6; lines 50-67 describe the elastomeric layer 14 seeping onto 12 over a thickness, thus meaning the silicone would bleed entirely through 16, and Column 4; lines 15-20 describe the layers 16 being present for anti-friction, thus the combination of the attenuation of the silicone and the anti-friction layers 16 provide a non-slip surface on a lower surface of 16 which is secured to and goes against upper layer equivalent 12), the stabilization layer being located

on a bottom surface of the elastomeric cushioning element, the elastomeric material of the elastomeric cushioning element securing the elastomeric cushioning element to an upper surface of the stabilization layer (Column 6; lines 50-67 and Figure 1a; 14, 16, and 12). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the cushioning layer 106 of Kluft to be elastomeric as in Rancourt in order to increase user comfort according to user preference by including resiliency in the mattress, and it would have been obvious to include a stabilization layer to prevent sliding and movement of the elastomeric layer.

8. Claims 17-19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) further in view of An (US Patent 7757322).

q. Regarding claim 17, Kluft teaches individually disposing each coil of the coil layer a first casings (Figure 1; 80, 84). Kluft does not teach and individually disposing the first casing within a second casing. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Kluft to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid. An teaches and individually disposing the first casing within a second casing (Figure 20, the pockets are individually disposed within a foam casing). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the springs of Kluft to be within two casings in order to provide additional firmness as desired to the springs, as well as to protect them from outside dirt and liquid.

r. Regarding claim 18, Kluft and Ando not specifically teach wherein individually disposing each coil of the coil layer within the first casing comprises individually disposing the coil within a polypropylene bag. However, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the pockets of Kluft and An to be polypropylene bags

in order to provide a tough, chemically resistant layer of protection to the springs and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ416 (CCPA 1960).

s. Regarding claim 19, Kluft and An does not teach individually disposing the first casing within the second casing comprises individually disposing the first casing within a polypropylene bag. However, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the pockets of Kluft and An to be polypropylene bags in order to provide a tough, chemically resistant layer of protection to the springs and the selection of a known material based upon its suitability for the intended use is a design consideration within the level of skill of one skilled in the art. In re Leshin, 227 F.2d 197,125 USPQ416 (CCPA 1960).

9. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Kluft (US Patent 7640611) in view of Rancourt (US Patent 9032571) further in view of Lauer (US Patent Application Publication 20140130265).

t. Regarding claim 20, Kluft does not teach securing the stabilization layer to the upper layer. Lauer teaches securing the stabilization layer to the upper layer (Claim 22). It would have been obvious to one of ordinary skill in the art to use an adhesive on the layers of Kluft and Rancourt in order to prevent sliding of the layers in relation to each other.

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MORGAN J MCCLURE whose telephone number is (571)270-0362. The examiner can normally be reached on M-F 8:30am - 5:00pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 5712726856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MORGAN J MCCLURE/
Examiner, Art Unit 3673

/NICHOLAS F POLITO/
Primary Examiner, Art Unit 3619
1/29/2021

| Notice of References Cited | Application/Control No. 15/816,983 | Applicant(s)/Patent Under Reexamination Pearce et al. | |
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| | Examiner MORGAN J MCCLURE | Art Unit 3673 | Page 1 of 1 |

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| | B | | | | | |
| | C | | | | | |
| | D | | | | | |
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| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/816,983 | Pearce et al. |
| | Examiner | Art Unit |
| | MORGAN J MCCLURE | 3673 |

| CPC - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
| A47C27/20,001,056,06,064,146,148,15 | 01/02/2020 | MM |

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| Search Notes | | |
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| Search Notes | Date | Examiner |
| Inventor Name Search | 01/02/2020 | MM |
| Updated Search | 07/02/2020 | MM |
| Inventor Name Search | 01/28/2021 | MM |

| Interference Search | | | |
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| US Class/CPC Symbol | US Subclass/CPC Group | Date | Examiner |
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Doc code: IDS
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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| Attorney Docket Number | 54023-3030US01 |

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|---|---|---|---|
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| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

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|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2020-10-08 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

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Doc description: Information Disclosure Statement (IDS) Filed

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|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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|---|---|---|---|



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

| | | |
|---|---|---|
| | 1 | INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY, International Application Number PCT/US2018/060680, May 19, 2020 |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| | | | |
|---|---|---|---|
| Examiner Signature | /MORGAN J MCCLURE/ | Date Considered | 01/28/2021 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

X That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

X See attached certification statement.

X The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2020-07-28 |
| Name/Print | Brick G. Power | Registration Number | 38581 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.J.M/

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L7 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | US-PGPUB; USPAT | OR | OFF | 2021/01/28 16:27 |
| L8 | 2 | L7 and scrim | US-PGPUB; USPAT; USOCR | OR | OFF | 2021/01/28 16:27 |
| S1 | 77,756 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 18:33 |
| S2 | 1,098 | S1 and elastomeric | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 18:34 |
| S3 | 215 | S1 and elastomeric and coil | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:34 |
| S4 | 167 | S1 and elastomeric and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:35 |
| S5 | 92 | S1 and elastomer and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 18:40 |
| S6 | 77,756 | "5".clas. | US-PGPUB; | OR | OFF | 2019/12/30 20:09 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |
| S7 | 92 | S6 and elastomer and coil and mattress | US-PGPUB; USPAT; USOCR | OR | ON | 2019/12/30 20:09 |
| S8 | 14 | ("3151344" \| "3242505" \| "3256535" \| "3334951" \| "3959833" \| "3991428" \| "4086673" \| "4122567").PN. OR ("4234981").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:21 |
| S9 | 55 | ("2651788" \| "3166768" \| "3210781" \| "3274625" \| "3702484").PN. OR ("4213214").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:32 |
| S10 | 1,042 | spring and foam and adhesive and S6 | US-PGPUB; USPAT; USOCR | OR | OFF | 2019/12/30 21:45 |
| S11 | 2 | ("2014/0208517").URPN. | USPAT | OR | OFF | 2019/12/30 22:40 |
| S12 | 26 | ("20130025070" \| "3512192" \| "7424762" \| "20100058541" \| "20110154576" \| "20120180225" \| "20130025068" \| "20120079659" \| "8745795" \| "20140182063" \| "20080095983" \| "20130025069" \| "4092752" \| "20070226911" \| "20110256380" \| "20140059776" \| "6541094" \| "7661164" \| "2610338" \| "20070226911" \| "20120193572" \| "20130167302" \| "6668409" \| "20150335166" \| "5578368" \| "6609261" \| "6954956" \| "8418297" \| "20070061978" \| "5513402" \| "20130025065" \| "3818520" \| "6718583" \| "20040163180" \| "20110173757" \| "5919833" \| "20120060846" \| "4951336" \| "20150296994" \| "20060048301" \| "4504991" \| "20120180225" \| "8414732" \| "5837002" \| "6699266" \| "7469437" \| "3833951" \| "8181293" \| "20090142551" \| "20120022620" \| "20130025068" \| "7827637" \| "20130174344" \| "5513402" \| "4824719").PN. | USPAT | OR | OFF | 2019/12/30 22:46 |
| S13 | 25 | ("3512192").URPN. | USPAT | OR | OFF | 2019/12/30 22:53 |
| S14 | 1,682 | springs and (base with foam) | USPAT | OR | OFF | 2019/12/30 23:10 |
| S15 | 220 | S14 and S6 | USPAT | OR | OFF | 2019/12/30 23:10 |
| S16 | 53 | ("0698529" \| "1270840" \| "1682394" \| "1745986" \| "1959082" \| "20040237204" \| | US-PGPUB; | OR | OFF | 2019/12/30 23:11 |

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| | | "20060260062" \| "20070204407" \| "20090193591" \| "20100192299" \| "20100223732" \| "20100319137" \| "20110061163" \| "20130192003" \| "2236007" \| "2615180" \| "3046574" \| "3080578" \| "3082438" \| "3099021" \| "3178735" \| "3230558" \| "3462779" \| "4462129" \| "5724686" \| "5787532" \| "6249924" \| "6295676" \| "6353952" \| "6813791" \| "6826796" \| "6889398" \| "6996865" \| "7082635" \| "7617788" \| "7640611" \| "7644461" \| "7917980" \| "7992242").PN. OR ("8918934").URPN. | USPAT; USOCR | | | |
| S17 | 113 | (pearce and tony).in. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 10:46 |
| S18 | 216 | ("1228783" \| "20020013407" \| "20020061384" \| "20040172766" \| "20050223667" \| "20060194925" \| "20070246157" \| "20090246449" \| "20100229308" \| "2029370" \| "2385870" \| "2458588" \| "2491557" \| "2617751" \| "2655369" \| "2672183" \| "2715435" \| "2814053" \| "2887425" \| "2979739" \| "3043731" \| "3197357" \| "3222697" \| "3308491" \| "3407406" \| "3459179" \| "3462778" \| "3518786" \| "3529368" \| "3552044" \| "3605145" \| "3748669" \| "3748779" \| "3801420" \| "3893198" \| "3940811" \| "3968530" \| "3986213" \| "4038762" \| "4083127" \| "4144658" \| "4163297" \| "4229546" \| "4243754" \| "4247963" \| "4252910" \| "4255202" \| "4256304" \| "4274169" \| "4279044" \| "4292701" \| "4335476" \| "4369284" \| "4370769" \| "4378396" \| "4383342" \| "4422194" \| "4457032" \| "4467053" \| "4472847" \| "4483029" \| "4485505" \| "4485568" \| "4498205" \| "4541136" \| "4572174" \| "4588229" \| "4614632" \| "4618213" \| "4628557" \| "4660238" \| "4670925" \| "4686724" \| "4698864" \| "4709431" \| "4713854" \| "4726624" \| "4728551" \| "4737998" \| "4744564" \| "4761843" \| "4842330" \| "4913755" \| "4945588" \| "4952190" \| "4952439" \| "4953913" \| "4959059" \| "4967433" \| "5010608" \| "5013518" \| "5015313" \| "5018790" \| "5020176" \| "5027801" \| "5039567" \| "5052068" \| "5053436" \| "5058291" \| "5074620" \| "5079786" \| "5079787" \| "5093138" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 10:47 |

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| | | "5100712" \| "5103518" \| "5111544" \| "5147685" \| "5149173" \| "5152023" \| "5153956" \| "5163196" \| "5171766" \| "5172494" \| "5180619" \| "5190504" \| "5191752" \| "5201780" \| "5203607" \| "5204154" \| "5211446" \| "5243722" \| "5255404").PN. OR ("5262468" \| "5282286" \| "5289878" \| "5314735" \| "5330249" \| "5334646" \| "5334696" \| "5335907" \| "5336708" \| "5352023" \| "5360653" \| "5362834" \| "5369828" \| "5403642" \| "5421874" \| "5429852" \| "5444881" \| "5445861" \| "5452488" \| "5456072" \| "5490299" \| "5496610" \| "5508334" \| "5513402" \| "5549743" \| "5592706" \| "5617595" \| "5626657" \| "5633286" \| "5636395" \| "5689845" \| "5749111" \| "5881409" \| "5994450" \| "6026527" \| "6115861" \| "6187837" \| "6241695" \| "6290794" \| "6413458" \| "6490744" \| "6498198" \| "6598321" \| "6704961" \| "6797765" \| "6865759" \| "6905431" \| "6905831" \| "6908662" \| "7060213" \| "7076822" \| "7138079" \| "7444703" \| "7666341" \| "7730566" \| "8075981" \| "8424137" \| "8434748").PN. OR ("8932692").URPN. | | | | |
| S19 | 38 | ("2005/0223667").URPN. | USPAT | OR | OFF | 2020/01/02 10:52 |
| S20 | 77,756 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 11:11 |
| S21 | 319 | S20 and (foam with adhesive) | USPAT | OR | OFF | 2020/01/02 11:11 |
| S22 | 138 | S20 and ((spring coil) with second with (casing case pocket pocketed pocketing cased)) | USPAT | OR | ON | 2020/01/02 11:19 |
| S23 | 7 | S20 and ((spring coil) with (second adj (casing case pocket pocketed pocketing cased))) | USPAT | OR | ON | 2020/01/02 11:21 |
| S24 | 2,903 | A47C27/20,001,056,06,064,146,148,15.cpc. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/01/02 11:44 |
| S25 | 77,763 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:34 |
| S26 | 264 | S25 and seep$4 | US-PGPUB; | OR | OFF | 2020/07/02 14:34 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |
| S27 | 41 | S25 and (seep$4 with layer) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:35 |
| S28 | 2,989 | A47C27/20,001,056,06,064,146,148,15.cpc. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:39 |
| S29 | 7 | S28 and (elastomer$4 with fus$4) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 14:39 |
| S30 | 1 | "9032571".pn. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 17:42 |
| S31 | 36 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | US-PGPUB; USPAT | OR | OFF | 2020/07/02 18:04 |
| S32 | 4 | S31 and (adhesive with foam) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:04 |
| S33 | 77,763 | "5".clas. | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:12 |
| S34 | 306 | S33 and (foam with (friction (anti adj slip) (anti-slip) slip)) | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:12 |
| S35 | 114 | S33 and (foam with (friction (anti adj slip) (anti-slip) slip)) and layers | US-PGPUB; | OR | OFF | 2020/07/02 18:12 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |
| S36 | 37 | (US-20150096121-$ or US-20140130265-$ or US-20100005595-$ or US-20110302721-$ or US-20110197363-$ or US-20110179579-$ or US-20110173757-$ or US-20100319137-$ or US-20150305515-$ or US-20150067967-$ or US-20140373281-$ or US-20140208517-$ or US-20090246449-$ or US-20050223667-$ or US-20150231007-$ or US-20150217534-$ or US-20150223622-$).did. or (US-8006360-$ or US-4234981-$ or US-4213214-$ or US-6701557-$ or US-4504991-$ or US-4092752-$ or US-3512192-$ or US-8353072-$ or US-8429776-$ or US-7581271-$ or US-4866799-$ or US-8918934-$ or US-7640611-$ or US-7730566-$ or US-8607387-$ or US-6523812-$ or US-7757322-$ or US-8910334-$ or US-8997279-$ or US-9032571-$).did. | US-PGPUB; USPAT | OR | OFF | 2020/07/02 18:45 |
| S37 | 16 | S36 and pocket$4 | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 18:45 |
| S38 | 1 | (US-7757322-$).did. | USPAT | OR | OFF | 2020/07/02 18:59 |
| S39 | 1 | (US-9032571-$).did. | USPAT | OR | OFF | 2020/07/02 19:01 |
| S40 | 1 | (US-20150223622-$).did. | US-PGPUB | OR | OFF | 2020/07/02 19:01 |
| S41 | 3 | S38 S39 S40 | US-PGPUB; USPAT; USOCR | OR | OFF | 2020/07/02 19:01 |

**EAST Search History (Interference)**

<This search history is empty>

1/28/2021 4:39:26 PM
C:\Users\mmcclure\Documents\EAST\Workspaces\15816983 elastomeric mattress.wsp

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/816,983 | Filing Date<br>11/17/2017 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 10/08/2020 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $480 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
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|---|---|
| Application Number | 15816983 |
| Filing Date | 2017-11-17 |
| First Named Inventor | Tony M. Pearce |
| Art Unit | 3673 |
| Examiner Name | McClure, Morgan J. |
| Attorney Docket Number | 54023-3030US01 |

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| | 1 | 7757322 | B2 | 2010-07-20 | An | |

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|---|---|---|---|---|---|---|---|---|
| | 1 | 101568281 | CN | A | 2009-10-28 | An | Corresponds to US 7757322 B2 | ☒ |
| | 2 | 2272697 | CN | Y | 1998-01-21 | Shunde Golden BMW Furniture Manufacturing Co., Ltd | | ☒ |
| | 3 | 105747678 | CN | A | 2016-07-13 | Jiao | | ☒ |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 4 | 204838771 | CN | U | 2015-12-09 | Chongqing Weilan Mattress Furniture Co., Ltd. | | ☒ |
| | 5 | 204734212 | CN | U | 2015-11-04 | Chongqing Weilan Mattress Furniture Co., Ltd. | | ☒ |
| | 6 | 205321883 | CN | U | 2016-06-22 | Faliya (Quanzhou) Household Products Co., Ltd. | | ☒ |
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| | 1 | Chinese National Intellectual Property Administration, "First Office Action," Chinese Application No. 201810811684.1, September 24, 2020 | |

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|---|---|---|
| | Application Number | 15816983 |
| | Filing Date | 2017-11-17 |
| | First Named Inventor | Tony M. Pearce |
| | Art Unit | 3673 |
| | Examiner Name | McClure, Morgan J. |
| | Attorney Docket Number | 54023-3030US01 |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /brick g power/ | Date (YYYY-MM-DD) | 2020-10-08 |
|---|---|---|---|
| Name/Print | Brick G. Power | Registration Number | 38581 |

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# Bibliographic data: CN101568281 (A) — 2009-10-28

## A mattress

**Inventor(s):** HO AN JUNG [KR] ± (AN JUNG HO)

**Applicant(s):** HO AN JUNG [KR] ± (AN JUNG HO)

**Classification:** - international: ***A47C27/14; A47C27/15; A47C27/20***
- cooperative: **A47C27/001 (EP); A47C27/056 (EP); A47C27/062 (EP); A47C27/064 (EP); A47C27/148 (EP); A47C27/15 (EP); A47C27/20 (EP); A47C31/105 (EP)**

**Application number:** CN20088001177 20080327

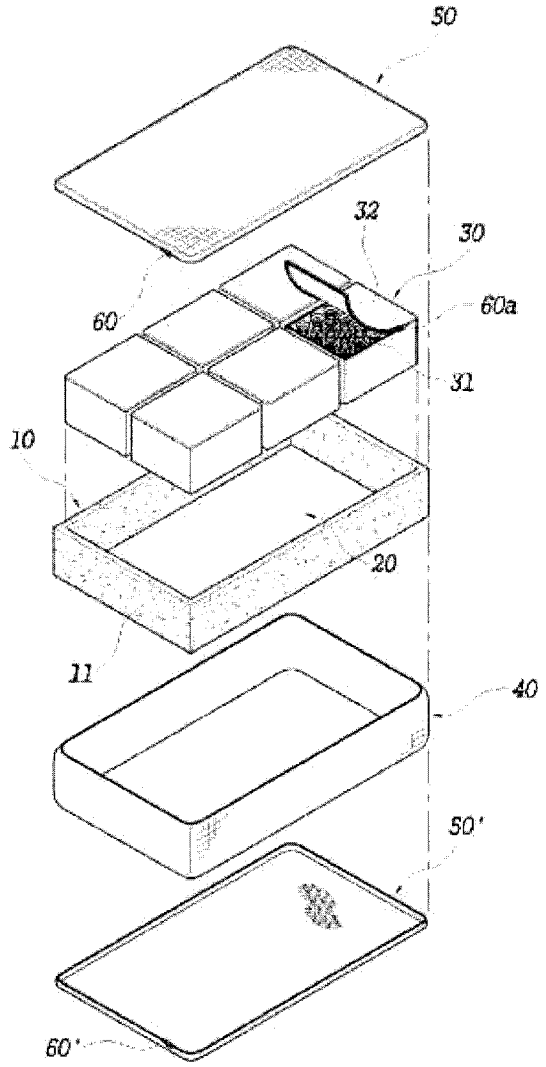
**Priority number (s):** WO2008KR01709 20080327 ; KR20070101660 20071009 ; KR20070107409 20071024 ; KR20070141824 20071231

**Also published as:** CN101568281 (B) CA2666268 (A1) CA2666268 (C) EP2194814 (A1) EP2194814 (A4) more

**Abstract of CN101568281 (A)**

A bed mattress is provided for employing a plurality of cushion elements to be arranged in different portions of the mattress divided corresponding to the user's body parts and have appropriate elasticity for the corresponding part of the user's body, which comprises a mattress frame with an enclosing wall of elastic material for providing a mounting space therein; a plurality of cushion elements disposed in the mounting space and forming a mattress body together with the mattress frame; a side pad covering the periphery of the mattress body; and upper and lower cover pads with outer edges fastened respectively to the top and bottom edges of the side pad to enclose the upper and lower surfaces of the mattress body.

[Fig. 1]



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*A47C 27/20*(2006.01)
*A47C 27/15*(2006.01)
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(56)对比文件
WO 2005002400 A1,2005.01.13, 全文.
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CN 2218550 Y,1996.01.31, 全文.
US 2004172767 A1,2004.09.09, 全文.
CA 2290244 A1,2000.05.23, 全文.

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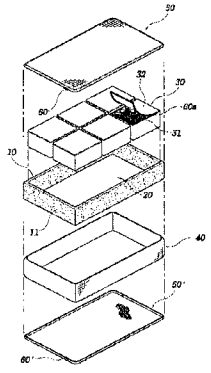
权利要求书 3 页 说明书 7 页 附图 20 页

(54)发明名称

床垫

(57)摘要

本发明提供了一种使用多个垫元件(30)的床垫,所述多个垫元件被布置在对应于用户身体部位而分割的床垫的不同部分中,并且具有适合于用户身体的相应部位的弹性,所述床垫包括具有包封壁(11)以便在其中提供安装空间(20)的床垫框架(10);布置在所述安装空间(20)内并且与所述床垫框架(10)一起形成床垫体部的多个垫元件(30);覆盖所述床垫体部的周边的侧部衬垫;以及上部覆盖衬垫(50)和下部覆盖衬垫(50'),所述上部覆盖衬垫和下部覆盖衬垫的外缘分别紧固(60,60')在所述侧部衬垫的顶缘和底缘上以包封所述床垫体部的上表面和下表面。



CN 101568281 B

1. 一种床垫，包括：

床垫框架，所述床垫框架具有包封壁，所述包封壁具有两个横向分割壁并且由弹性材料制成，以用于形成三个分割安装空间，即第一中心分割安装空间以及设置在所述第一中心分割安装空间外侧的一对第二分割安装空间；

一个或多个垫元件，所述一个或多个垫元件布置在所述分割安装空间的每一个中，并且与所述床垫框架一起形成床垫体部；

侧部衬垫，所述侧部衬垫用于覆盖所述床垫体部的周边；以及

上部和下部覆盖衬垫，所述上部和下部覆盖衬垫的外缘分别紧固在所述侧部衬垫的顶缘和底缘上以包封所述床垫体部的上表面和下表面，

其中，在两个所述第二分割安装空间中的所述垫元件的弹性相同，且高于在所述第一中心分割安装空间中的垫元件的弹性。

2. 根据权利要求 1 所述的床垫，其特征在于，所述床垫还包括：

下部垫构件，所述下部垫构件具有与所述床垫体部相同的周边尺寸，被设置在所述床垫体部下方，并且与所述床垫体部一起被所述侧部衬垫覆盖。

3. 根据权利要求 1 或 2 所述的床垫，其特征在于，所述包封壁和 / 或所述一个或多个分割壁由一种或多种弹性海绵材料一体地制成。

4. 根据权利要求 1 或 2 所述的床垫，其特征在于，所述包封壁和 / 或所述一个或多个分割壁由弹性海绵材料构成的杆元件制成，所述杆元件的相对端连结到由弹性海绵材料构成的相邻杆元件的对应的相对端。

5. 根据权利要求 1 或 2 所述的床垫，其特征在于，所述包封壁和 / 或所述一个或多个分割壁包括多个弹簧结构，所述弹簧结构的底部固定在框架基部上所设置的对应安装孔中。

6. 根据权利要求 1 或 2 所述的床垫，其特征在于，所述包封壁和 / 或所述一个或多个分割壁包括弹性海绵材料构成的框架构件，多个弹簧结构保持相互分离或彼此相邻并且被嵌入所述框架构件。

7. 根据权利要求 2 所述的床垫，其特征在于，所述下部垫构件包括具有或不具有一个或多个纵向或横向分割壁的框架，以及被包封在所述框架中的多个垫元件。

8. 根据权利要求 5 所述的床垫，其特征在于，所述床垫框架还包括连接到所述框架基部的底部的封闭板。

9. 根据权利要求 5 所述的床垫，其特征在于，所述弹簧结构在其中部或上部接合到相邻的弹簧结构。

10. 根据权利要求 1 或 2 所述的床垫，其特征在于，所述垫元件由弹性海绵材料或圆柱形弹簧结构或使用螺旋弹簧或布袋弹簧的弹簧结构制成。

11. 根据权利要求 10 所述的床垫，其特征在于，所述垫元件被包装在织物袋内。

12. 根据权利要求 1 所述的床垫，其特征在于，所述第一分割安装空间的长度比具有相同长度的所述第二分割安装空间的长度短。

13. 根据权利要求 1 所述的床垫，其特征在于，所述第一分割安装空间的长度与具有相同长度的所述第二分割安装空间的长度相同。

14. 根据权利要求 1 所述的床垫，其特征在于，所述床垫还包括位于所述第二分割安装空间外侧的一对第三分割安装空间，其中所述第三分割安装空间中的垫元件具有相同的弹



Exhibit 1002
TEMPUR Page 321 of 717

性，并且所述第三分割安装空间中的垫元件的弹性与所述第一和第二分割安装空间中的垫元件不同。

15. 根据权利要求 14 所述的床垫，其特征在于，所述第三分割安装空间中的垫元件的弹性低于所述第二分割安装空间中的垫元件的弹性且高于所述第一分割安装空间中的垫元件的弹性。

16. 根据权利要求 14 或 15 所述的床垫，其特征在于，所述第一分割安装空间的长度短于所述第二分割安装空间的长度，且长于具有相同长度的所述第三分割安装空间的长度。

17. 根据权利要求 14 所述的床垫，其特征在于，所述床垫还包括位于所述第三分割安装空间外侧的一对第四分割安装空间，其中所述第四分割安装空间中的垫元件具有相同的弹性。

18. 根据权利要求 17 所述的床垫，其特征在于，所述第一分割安装空间的长度短于所述第二分割安装空间的长度，所述第三分割安装空间的长度短于所述第一分割安装空间的长度，并且所述第四分割安装空间的长度短于所述第二分割安装空间的长度。

19. 根据权利要求 17 或 18 所述的床垫，其特征在于，所述第一分割安装空间中的垫元件的弹性低于所述第二分割安装空间中的垫元件的弹性，所述第三分割安装空间中的垫元件的弹性高于所述第一分割安装空间中的垫元件的弹性且低于所述第二分割安装空间中的垫元件的弹性，并且所述第四分割安装空间中的垫元件的弹性高于所述第一和第三分割安装空间中的垫元件的弹性且低于所述第二分割安装空间中的垫元件的弹性。

20. 根据权利要求 17 所述的床垫，其特征在于，所述床垫还包括位于所述第四分割安装空间外侧的一对第五分割安装空间，其中所述第五分割安装空间中的垫元件具有相同的弹性。

21. 根据权利要求 20 所述的床垫，其特征在于，所述第一分割安装空间的长度短于所述第二分割安装空间的长度，所述第三分割安装空间的长度短于所述第一分割安装空间的长度且与所述第五分割安装空间的长度相同，并且所述第四分割安装空间的长度短于所述第二分割安装空间的长度。

22. 根据权利要求 20 或 21 所述的床垫，其特征在于，所述第一分割安装空间中的垫元件的弹性低于所述第二分割安装空间中的垫元件的弹性，所述第三分割安装空间中的垫元件的弹性高于所述第一分割安装空间中的垫元件的弹性且低于所述第二分割安装空间中的垫元件的弹性，所述第四分割安装空间中的垫元件的弹性高于所述第一和第三分割安装空间中的垫元件的弹性且低于所述第二分割安装空间中的垫元件的弹性，并且所述第五分割安装空间中的垫元件的弹性高于所述第一和第三分割安装空间中的垫元件的弹性且低于所述第二和第四分割安装空间中的垫元件的弹性。

23. 根据权利要求 1 所述的床垫，其特征在于，在每个所述分割安装空间中所述垫元件设置成左右两排，并且在左右两排中的两个相邻的垫元件彼此具有不同的弹性。

24. 根据权利要求 1 所述的床垫，其特征在于，所述床垫还包括一个或两个辅助垫元件，所述辅助垫元件由弹性海绵材料或包含螺旋弹簧或布袋弹簧的弹簧结构制成，并且被布置在所述床垫体部之上和 / 或之下。

25. 根据权利要求 2 所述的床垫，其特征在于，所述下部垫构件由弹性海绵材料形成，或者由螺旋弹簧或布袋弹簧制成的弹簧结构形成。



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26. 根据权利要求 2 或 25 所述的床垫，其特征在于，所述床垫还包括设置在所述床垫体部和所述下部垫构件之间的分隔板。

27. 根据权利要求 2 所述的床垫，其特征在于，所述床垫框架包括连接到所述床垫框架下方的闭合板。

28. 根据权利要求 2 或 25 所述的床垫，其特征在于，所述下部垫构件的弹性高于所述床垫体部的弹性。

29. 根据权利要求 1 所述的床垫，其特征在于，设有紧固件以便将所述侧部衬垫和所述上部覆盖衬垫单独联接在一起。

30. 根据权利要求 1 或 29 所述的床垫，其特征在于，设有紧固件以便将所述侧部衬垫和所述下部覆盖衬垫单独联接在一起。



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# 床垫

## 技术领域

[0001] 本发明涉及一种床垫，尤其涉及一种具有框架的床垫，该框架包含具有不同弹性的多个垫元件，这使得可选择性地使用适合于用户的各个身体部位的垫元件。

## 背景技术

[0002] 当垫元件失去根据使用的材料而变化的弹性，附件例如侧部衬垫和上 / 下覆盖衬垫被完全或部分损坏、弄脏或褪色时，传统的床垫常常被整个丢弃而不是进行修理。这是因为床垫的所有部件、即垫元件和附件结合成单个体部，这样不易于修理床垫的一个或多个部分。

[0003] 此外，传统的床垫在其所有区域或范围上具有几乎相同的弹性，从而当用户躺在床上使得床垫或其垫元件在用户各个身体部位的重量的作用下被压缩时，根据身体部位的轻重压缩程度不同，但是，由用户身体重量导致的床垫上的曲线与用户身体的轮廓并不相同，从而一些身体部位例如颈部和腰部没有与床垫接触并且被床垫支承，而是保持与床垫分离。由于这些身体部位的肌肉的紧张状态，导致用户不能采取或保持舒适和放松的姿势躺在床垫上。

[0004] 旨在解决上述问题的韩国实用新型第 337232 号中公开了一种床垫，其中床垫可沿纵向被分成与身体部位相对应的多个部分，并且在这些部分中具有弹性不同的弹簧结构构成的垫。但是，由于床垫的一体结构使得难以或者不可能对一个或多个部分进行局部修理或更换，因此如果被损坏，则用户必须更换整个床垫。

[0005] 此外，在双人床的情况下，在床垫的不同部分中设置弹性不同的弹簧结构不足以使得具有不同身体尺寸和结构的男性和女性用户都感到舒适。

## 发明内容

[0006] 本发明的一个目标是提供一种使用户在其上具有舒适且放松的睡眠的床垫，所述床垫使用多个垫元件，所述多个垫元件被布置在相应于用户身体部位分割的床垫的不同部分中，并且具有在考虑了用户的年龄、性别、身高、体重和其它身体结构的情况下适合于用户身体的相应部位的弹性，以便解决上述的传统床垫的问题。

[0007] 本发明的另一个目标是提供一种具有可更换的部件的床垫，以便容易进行床和床垫的维修并且延长使用时间。

[0008] 根据本发明的一个方面，一种床垫包括：

[0009] 床垫框架，所述床垫框架具有包封壁以便在其中提供安装空间；

[0010] 多个垫元件，所述多个垫元件被布置在所述安装空间内，并且与所述床垫框架一起形成床垫体部；

[0011] 侧部衬垫，所述侧部衬垫覆盖所述床垫体部的周边；以及

[0012] 上部和下部覆盖衬垫，所述上部和下部覆盖衬垫的外缘分别紧固在所述侧部衬垫的顶缘和底缘上以包封所述床垫体部的上表面和下表面。



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[0013] 根据本发明的另一个方面，床垫框架包括用于将安装空间分成一对平行分割安装空间的纵向分割壁。

[0014] 根据本发明的又一个方面，床垫还包括下部垫构件，所述下部垫构件与床垫体部具有相同的周边，所述床垫体部包括具有或不具有一个或多个纵向或横向分割壁的床垫框架以及如上所述的多个垫元件。

[0015] 根据对应于具有根据本发明的床垫的床的用户的身体部位和结构以及喜好的所述床垫的区域或范围，所述床垫的垫元件可选择成具有不同的弹性。

[0016] 此外，床垫的各个部分例如垫元件以及侧部、上部和下部覆盖衬垫可被拆卸以便更换或维修，从而延长了床垫寿命。

## 附图说明

[0017] 下文将参照附图详细描述本发明，其中：

[0018] 图 1 是根据本发明的第一实施例的床垫的分解透视图；

[0019] 图 2 是图 1 中所示的床垫的一部分的侧向剖视图；

[0020] 图 3 是图 2 中所示的床垫的上部覆盖衬垫和辅助垫元件的组合的侧向剖视图；

[0021] 图 4 是图 1 所示的床垫中使用的垫元件的另一个示例的侧向剖视图；

[0022] 图 5 是根据本发明的第二实施例的床垫的分解透视图；

[0023] 图 6 是图 5 中所示的床垫的正面剖视图；

[0024] 图 7 是根据本发明的第三实施例的床垫的分解透视图；

[0025] 图 8 是图 7 中所示的床垫的侧向剖视图；

[0026] 图 9 是图 7 中所示的床垫的一个变型的侧向剖视图；

[0027] 图 10 是图 7 中所示的床垫的另一个变型的侧向剖视图；

[0028] 图 11 是根据本发明的第四实施例的床垫的分解透视图；

[0029] 图 12 是根据本发明的第五实施例的床垫的分解透视图；

[0030] 图 13 是图 12 中所示的床垫的侧向剖视图；

[0031] 图 14 是根据本发明的第一实施例的一个变型的床垫的侧向剖视图，该床垫具有沿该床垫的纵向方向的上部和下部两个分割安装空间。

[0032] 图 15 是根据本发明的第一实施例的另一个变型的床垫的侧向剖视图，该床垫具有四个分割安装空间；

[0033] 图 16 是根据本发明的第一实施例的床垫的另一变型的侧向剖视图，该床垫具有六个分割安装空间；

[0034] 图 17 是根据本发明的第一实施例的床垫的又一变型的侧向剖视图，该床垫具有八个分割安装空间；

[0035] 图 18 是根据本发明的第三实施例的床垫的一个变型的侧向剖视图，该床垫具有九个分割安装空间；

[0036] 图 19-21 是根据本发明的床垫中所使用的包封壁和分割壁的其它示例的局部剖视图；

[0037] 图 22 是根据本发明的第四实施例的床垫的一个变型的床垫体部的局部分解透视图；以及



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[0038] 图 23 是图 22 中所示的床垫体部的局部侧向剖视图。

## 具体实施方式

[0039] 图 1 是根据本发明的第一实施例的床垫的分解透视图，图 2 是图 1 中所示的床垫的侧向剖视图，图 3 是图 2 中所示的床垫的上部覆盖衬垫和辅助垫元件的组合的侧向剖视图，并且图 4 是图 1 中所示的床垫中使用的垫元件的另一个示例的侧向剖视图。

[0040] 根据本发明的第一实施例的床垫包括具有用于在其中提供安装空间的由弹性聚氨酯泡沫制成的矩形包封壁 11 的床垫框架 10，在该安装空间中排列成两排并且与该框架 10 一起形成床垫体部的六个垫元件 30，每个均包括袋 32 和扁平的聚氨酯泡沫 33 并且布置在床垫体部之上或之下的一对辅助垫元件 30，覆盖床垫体部的周边的侧部衬垫 40，以及分别覆盖辅助垫元件 30 的上部和下部覆盖衬垫 50、50'，所述上部和下部覆盖衬垫通过设置在其边缘的紧固件 60、60' 紧固在侧部衬垫 40 的上端和下端。

[0041] 垫元件 30 是包含多个螺旋弹簧 31 的弹簧结构，所述多个螺旋弹簧 31 被包装在具有紧固件 60a 的立方体织物袋 32 中，而辅助垫元件 30 分别与上部或下部覆盖衬垫 50、50' 和具有紧固件 60a 的保护板 51 相结合并且被包封在其中（见图 2）。此外，可以不使用袋 32，并且辅助垫元件 30 可仅被布置在床垫体部上，或者根本不被使用。

[0042] 框架 10 的矩形壁 11 可以是一体地形成的体部，或者通过将一个杆元件的两端与其它杆元件的相对应的端部连结而由四个杆元件形成，其中另外需要连结过程并且连结部可能由于较差的连结质量或者长期的重载荷而易于断裂。因此，优选地，框架被一体地形成或模制，或者具有厚的和 / 或牢固的连结部。在包封壁 20 中布置成两排的垫元件 30 的外侧面与壁的内壁表面或相邻垫元件的外侧面紧密接触，从而它们可作为单个垫元件起作用。此外，如上所述，在需要时，垫元件 30 可制成具有不同的弹性，并且辅助垫元件 30 的部分也可制成具有不同的弹性。

[0043] 图 1 和 2 中示出排成两排的六个垫元件 30，但是床垫可根据需要具有排成两排的四到十八个垫元件 30。

[0044] 对于将由男性和女性、丈夫和妻子、或者成年人和儿童使用的双人床，希望床垫的一侧设置的垫元件 30 比另一侧设置的垫元件 30 弹性低和 / 或宽度窄。

[0045] 在此实施例中，所示的弹簧结构使用螺旋弹簧 31，但是垫元件 30 的材料并不局限于此，如图 4 所示，弹簧结构可采用布袋弹簧 31 以代替被包装在具有紧固件 60b 的袋 32 中的螺旋弹簧。

[0046] 此外，类似于所述框架，垫元件 30 可由弹性海绵例如聚氨酯泡沫形成，辅助垫元件 30 也可用与垫元件相同的材料形成，或者由天然或合成橡胶形成。

[0047] 图 5 和 6 分别是根据本发明的第二实施例的床垫的分解透视图和正面剖视图，其中在床垫框架 10 内设有与床垫框架 10 相同的材料制成的纵向分割壁 21，以将安装空间 20 分成两个平行的分割安装空间 20。

[0048] 图 5 和 6 中所示的床垫可适合于大号床或双人床。此外，由于每个垫元件 30 的外侧面与分割壁 21 接触，该分割壁 21 与相邻垫元件 30 相比刚性更大，因此每个垫元件的形状不易于变形，从而保持所希望的牢固。

[0049] 分割壁 21 可通过将与框架 10 的壁相同的材料制成的单个元件的两端连结到壁 11



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的内表面上来提供，但是优选地，分割壁与壁 11 一体地形成。

[0050] 此外，安装在被分割壁 21 分成的两个平行分割安装空间 20 中的垫元件 30 的数量和弹性可与第一实施例中的情况相同，因此在此实施例中将不再详细说明。

[0051] 图 7 是根据本发明的第三实施例的床垫的分解透视图，图 8 是图 7 中所示的床垫的侧向剖视图，并且图 9 和图 10 是图 7 中所示的床垫的变型的侧向剖视图，其中，该床垫包括床垫框架 10，多个垫元件 30，一对辅助垫元件 30，侧部衬垫 40、以及上部和下部覆盖衬垫 50、50'，该框架 10 具有壁 11 和在框架 10 中被两个、四个或六个横向分割壁 21 分成三个、五个或七个分割安装空间的安装空间 20，每一个垫元件 30 被布置在相应的分割安装空间内。安装空间 20 被沿床垫的纵向或者从其底部到顶部分成三个、五个或七个分割安装空间 20a、20b、20c 和 20d，该垫元件的构造与第一和第二实施例相同，并且如同第一和第二实施例一样，侧部衬垫以及上部和下部覆盖衬垫由紧固件 60 紧固。

[0052] 当安装空间 20 的分割安装空间的数量从三个增加到五个，以及从五个增加到七个时，床垫的分割安装空间的长度减小，而在考虑特定用户或普通用户的身体部位的尺寸和重量的情况下，分割安装空间可优选地具有彼此不同的长度，并且还可具有弹性不同的垫元件。

[0053] 对于图 7 和 8 中所示的床垫，优选地使得第一中心分割安装空间 20a 的长度比相邻第二分割安装空间 20b 短，并且在第一分割安装空间 20a 中设置的垫元件 30 的弹性低于用于第二分割安装空间 20b 的垫元件。

[0054] 此外，在作为本发明的第三实施例的床垫的一个变型的图 9 中所示的床垫的情况下，已经发现，以下适合于被分成臀部、躯干、腿部、头部和足部的人体结构：使第一分割安装空间 20a 的长度短于相邻第二分割安装空间 20b，最外侧的第三分割安装空间 20c 的长度短于第一分割安装空间 20a，并且在第一分割安装空间 20a 中设置的垫元件 30 的弹性低于用于第二分割安装空间 20b 的垫元件，以及在第三分割安装空间 20c 中设置的垫元件 30 的弹性高于用于第一分割安装空间 20a 的垫元件且低于用于第二分割安装空间 20b 的垫元件。

[0055] 在作为本发明的第三实施例的床垫的另一变型的图 10 中所示的床垫的情况下，第一分割安装空间 20a 的长度长于相邻的第二分割安装空间 20b，在第二分割安装空间 20b 外侧的分割安装空间 20c 的长度长于第一分割安装空间 20a，并且在第三分割安装空间 20c 外侧的第四分割安装空间 20d 的长度长于第二分割安装空间 20b，同时，第一分割安装空间 20a 中设置的垫元件 30 的弹性低于第二分割安装空间 20b 中的垫元件 30，第三分割安装空间 20c 中的垫元件 30 的弹性高于第一分割安装空间 20a 中的垫元件且低于第二分割安装空间 20b 中的垫元件，并且第四分割安装空间 20d 中的垫元件的弹性高于第一和第三分割安装空间 20a 和 20c 中的垫元件且低于第二分割安装空间 20b 中的垫元件。

[0056] 上述构造使得用户可具有宁静和舒适的睡眠，其中，如同其它身体部位例如头部、躯干、臀部、腿部和足部一样，比其它身体部位更轻、更窄或更细的颈部、腰部以及膝盖和手臂的弯曲部与相应的垫元件适当地接触且被该垫元件支承，这是因为，具有均匀弹性的床垫元件的其它床垫可能不能被下压成使其表面具有用户身体的形状或轮廓，从而不能使得较轻、较窄或较细的身体部位例如颈部、腰部以及膝盖和手臂的弯曲部在床垫上舒适地伸展。



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[0057] 通过如上所述使床垫元件的弹性不同，在分割安装空间 20a、20b、20c 和 20d 中的垫元件 30 根据当用户躺在床垫上时人体的相应部位被不同地下压。换句话说，在用于臀部的第一分割安装空间 20a 中的垫元件被最大程度地下压，在用于腰部的位于顶部的第二分割安装空间 20b 中的垫元件被最小程度地下压，而在用于躯干的位于床垫的顶部的第三分割安装空间 20c 中的垫元件的下压程度小于第一分割安装空间 20a 中的垫元件并且大于在用于头部的位于床垫的顶部的第四分割安装空间 20d 中的垫元件，在用于腿部和足部的位于床垫的底部的其余第二到第四分割安装空间 20b、20c 和 20d 中的垫元件被下压的程度与腿部和足部的每个部位的重量有关。

[0058] 如上所述，通过设置与人体的相应部位的重量大致成反比的不同弹性的垫元件，使床垫——实际上是垫元件——被下压成具有人体的轮廓或形状，并且舒适地支承所有人体部位。从第一分割安装空间 20a 依次向外设置的分割安装空间 20b、20c 和 20d 中的每对垫元件的弹性和长度相同使得用户在需要时可使用顶部和底部颠倒的床垫。

[0059] 参照示出根据本发明的第四实施例的床垫的分解透视图的图 11，其中示出了这样的床垫：该床垫包括床垫框架 10，该床垫框架 10 在被纵向分割壁 21 和两个横向分割壁分隔的安装空间 20 中具有六个分割安装空间 20a、20b 和 20c。垫元件 30 是通过将螺旋弹簧 31 设置在织物袋 32 中制成的。

[0060] 由于在每对右侧和左侧分割安装空间 20a、20b 或 20c 中可使用具有不同弹性的一对垫元件 30，因此图 11 中所示的床垫可尤其适合于由具有男女不同身体结构例如身高或体重的两个人同时使用的大尺寸床或双人床。

[0061] 另外，对于身体结构明显不同的两个用户，一对或多对分割安装空间 20a、20b 和 20c 的长度可不同。

[0062] 图 12 是根据本发明的第五实施例的床垫的分解透视图，并且图 13 是图 12 中所示的床垫的侧向剖视图。

[0063] 参照图 12 和 13，所述床垫包括：床垫框架 10，该床垫框架 10 包括矩形壁 11，该矩形壁 11 由其两个端部连结到其它聚氨酯泡沫元件的相应端部的四个杆形聚氨酯泡沫元件形成，由杆形聚氨酯泡沫元件形成的一个纵向和四个横向分割壁 21 和 21'分成的分割安装空间 20a 和 20b，所述横向分割壁的两端连结到壁 11 的内表面或者连结到纵向分割壁 21 的侧面，以及用于封闭框架 10 的下部开口的底盖 53；设置在六个分割安装空间 20a 和 20b 的每一个中的用于与框架 10 一起形成床垫体部的六个垫元件 30；设置在框架 10 下方的下部垫构件 30a；覆盖通过组合下部垫构件 30a 和床垫体部形成的结构的周边的侧部衬垫 40；覆盖床垫体部并且具有紧固件 60 的上部覆盖衬垫 50，该紧固件 60 用于将上部覆盖衬垫 50 的边缘紧固在侧部衬垫 40 的上边缘；以及沿侧部衬垫 40 的下边缘缝合并且与侧部衬垫 40 一起接纳床垫体部和下部垫构件 30a 的下部覆盖衬垫 50'。

[0064] 下部垫构件 30a 希望比包含框架 10 和垫元件 30 的床垫体部厚，或者两者可具有相同的厚度。

[0065] 垫元件 30 和下部垫构件 30a 分别通过将弹性聚氨酯泡沫 33 或 33"包封在具有拉链 60b 或 60e 的织物袋 32 或 32" 中形成，可选择地，也可使用上述的弹簧结构。

[0066] 分隔板 52 设置在框架 10 和下部垫构件 30a 之间，并且可通过设置在其外缘以及侧部衬垫 40 的内表面处的紧固件 60c 被打开或闭合。由于下部覆盖衬垫 50' 的外缘围绕



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侧部衬垫 40 的下缘缝合，因此可将下部垫构件 30a 放入由侧部衬垫和下部覆盖衬垫形成的空间，或者从该空间中取出。

[0067] 底板 53 设置成用于防止分割安装空间 20a 和 20b 中的垫元件 30 掉落，但是它不是框架或床垫的必要组件。

[0068] 优选地，下部垫构件 30a 的弹性大于具有最强弹性的垫元件 30，并且如相对于根据本发明的第一实施例的床垫描述的，还优选地使用于分割安装空间 20a 和 20b 的每个垫元件的弹性不同。此外，如相对于根据本发明的第四实施例的床垫描述的，分割安装空间 20a 和 20b 的宽度以及垫元件 30 的弹性希望根据分割安装空间的位置，即左侧或右侧，而不同。

[0069] 此外，如本发明的前述实施例一样，下部覆盖衬垫可通过紧固件紧固在侧部衬垫上。

[0070] 图 14-17 是根据本发明的第一实施例的变型的床垫的侧向剖视图，其中，安装空间 20 被分成偶数个分割安装空间，即两个、四个、六个或八个分割安装空间。附图中所示的床垫的每个分割安装空间的长度适合于用户的相应身体部位的尺寸，并且每个组件的构造和功能可与第一至第三实施例相同，因此将不再详细描述。

[0071] 床垫的分割安装空间的长度可设定为与图 14-17 中的长度不同，同时这些床垫可被面向下地使用，而不是如相对于第二到第四实施例所描述的床垫那样顶部和底部颠倒地使用。

[0072] 图 18 是根据本发明的第三实施例的变型的床垫的侧向剖视图，该床垫具有被分成九个分割安装空间的安装空间，并且可适合于非常高的人或用户。该床垫具有位于中心的第一分割安装空间 20a，和从该第一分割安装空间 20a 向上依次形成的第二至第五分割安装空间 20b ～ 20e。在考虑了用户的相应身体部位、即臀部、腰部、躯干、颈部和头部的尺寸的情况下，设定分割安装空间的长度，而位于床垫的底部的分割安装空间 20b 至 20e 可与位于床垫的顶部的对应分割安装空间具有相同长度。

[0073] 根据本发明的上述实施例的床垫的框架 10 的壁 11 应被制成具有与传统床垫相同或更低的弹性，并且具有足以在床垫寿命期间保持其初始形状和弹性的强度，同时优选地，分割壁 21 和 21' 具有与垫元件当中弹性最低的垫元件 30 相同或更低的弹性，从而所有垫元件可被用户的身体部位下压而不会被分割壁 21 和 21' 阻挡。但是，如针对壁 11 所描述的，分割壁也应具有在床垫寿命期间被保持的足够的强度。

[0074] 可选择地，框架 10 可这样制成：通过如图 19 所示将布袋弹簧 10c 放置在以均匀间隔形成在聚氨酯泡沫壁构件 10a 中的垂直孔 10b 内，如图 20 所示将布袋弹簧嵌入聚氨酯泡沫壁元件 10a，或者如图 21 所示将排成一排的布袋弹簧组件嵌入聚氨酯泡沫壁元件 10a，同时，可使用常规的螺旋弹簧代替布袋弹簧。

[0075] 此外，除聚氨酯泡沫之外的各种海绵材料也可被用于制造垫元件，只要其具有合适的弹性即可。

[0076] 图 22 和 23 是根据本发明的第四实施例的床垫（见图 11）的一个变型的床垫体部的局部分解透视图和局部侧向剖视图，该床垫体部包括床垫框架 10 和垫元件 30。框架 10 包括由聚氨酯泡沫形成并且具有多个连续孔 10b 的弹性基板 12，其下部固定在其中一个孔 10b 内的布袋弹簧 10c，限定了第一和第二分割安装空间 20a 和 20b 的壁 11 以及分割壁 21



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和 21'，和连接到基板 12 的底部的塑料底板 13。此外，垫元件 30 被放置在分割安装空间 20a 和 20b 内。

[0077] 参照图 22 和 23，布袋弹簧 10c 被固定在孔 10b 内，并且没有从基板 12 向下突出，这是因为孔 10b 被底板 13 封闭，但是，可形成底部例如通过使用厚的基板 12 封闭的孔 10b。

[0078] 此外，优选地使布袋弹簧 10c 的中部和 / 或上部联接到相邻的布袋弹簧 10c，从而框架可具有足够的强度以防止在床垫的垫元件 30 被用户的重量下压时所述壁和分割壁发生摇摆。

[0079] 另外，上文针对其它实施例描述的对于壁和分割壁的弹性和强度的要求也应用于图 22 和 23 的床垫。

[0080] 框架 10 的分割壁 21 和 21'可具有与针对上述实施例示出的壁 11 相同的高度，但是也可具有稍低于壁 11 的高度，例如为壁 11 的高度的一半或更多，并且分割壁 21 和 21' 的弹性低于壁 11。

[0081] 除了如上所述使垫元件 30 具有相同高度但具有不同弹性之外，一个垫元件或者两个或更多相邻垫元件的组合可具有高度相同或基本相同的边缘，以及带有逐渐突出或降低的表面的圆形中心部分。此外，一个分割安装空间中可布置多个垫元件。

[0082] 尽管已经示例性地公开了本发明的优选实施例，但是本领域技术人员应理解，可存在各种变型、增加和替代而不会背离本发明的范围和精神。此外，本发明并不局限于公开的示例性实施例以及上文的描述，而仅由所附的权利要求限制。



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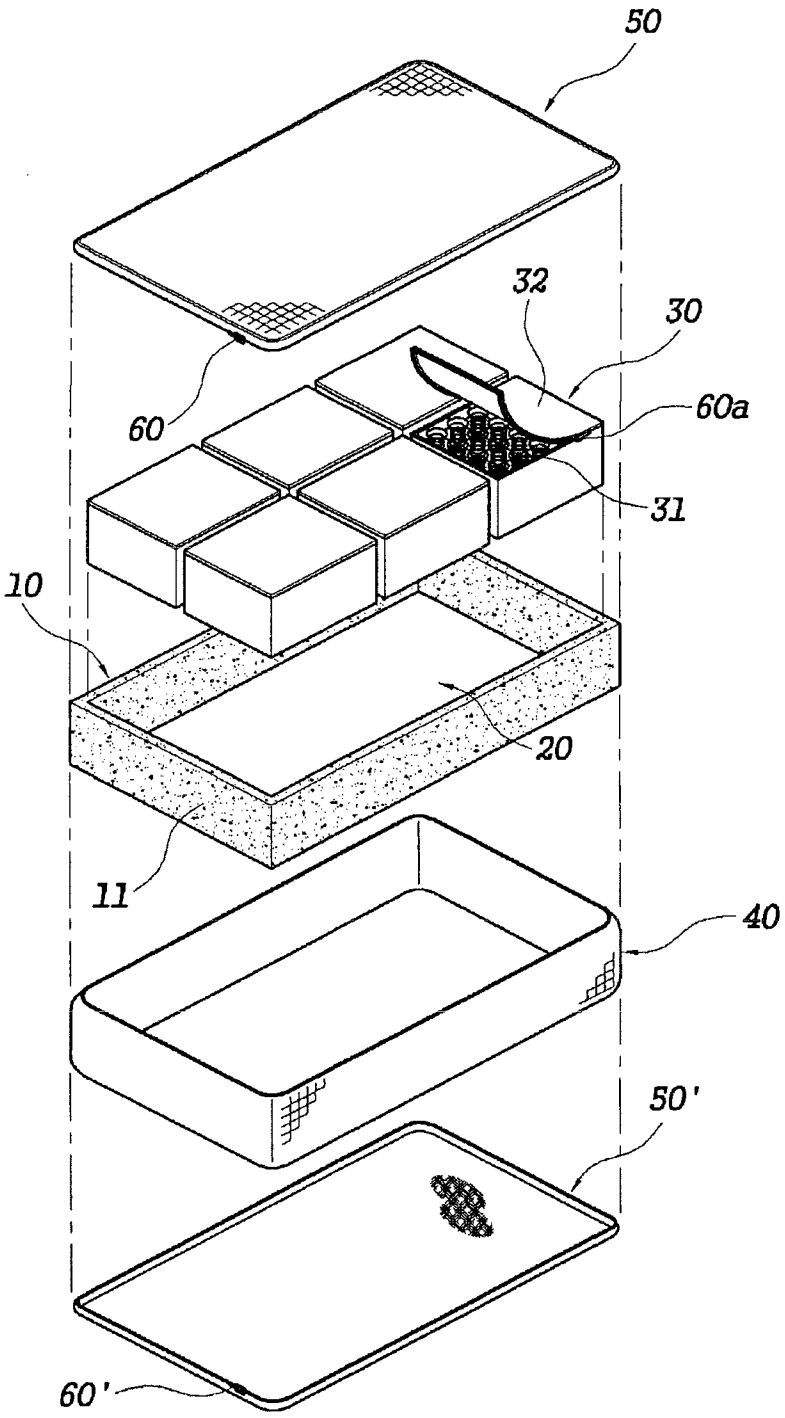



图 1



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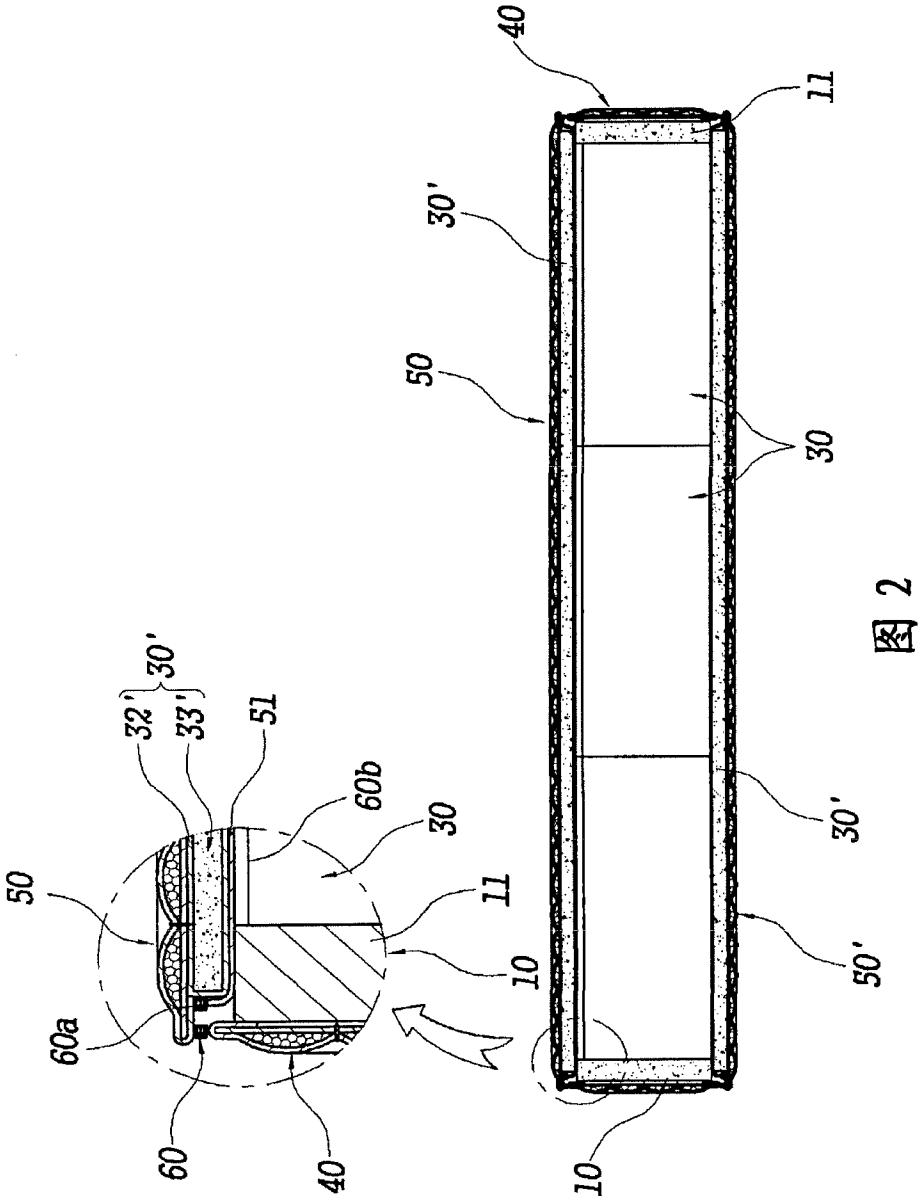



图 2



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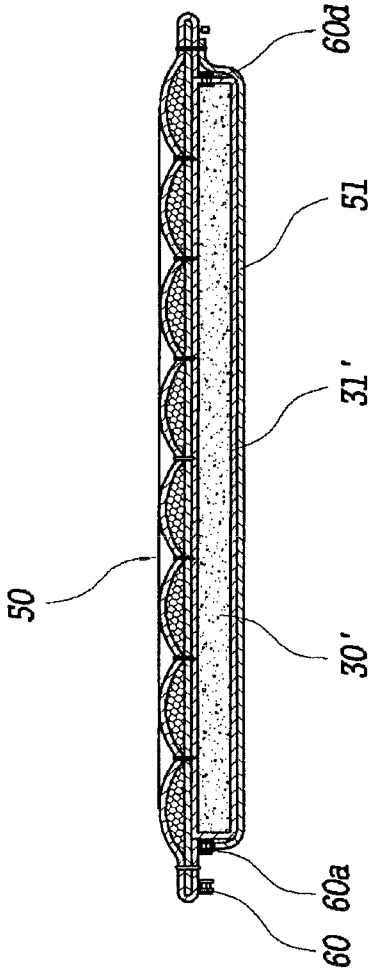



图 3

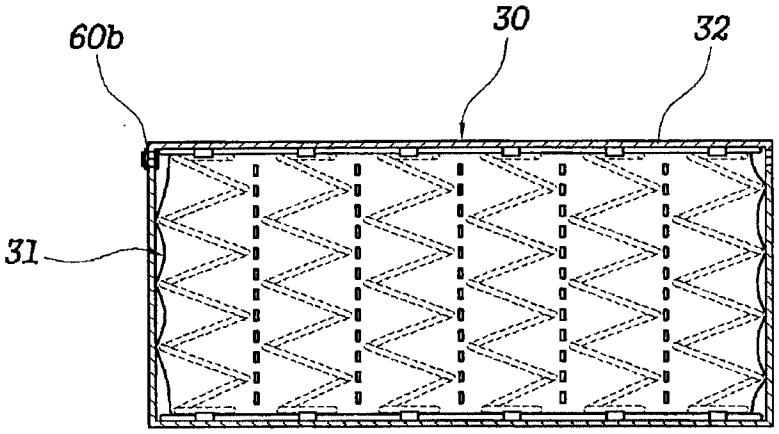



图 4



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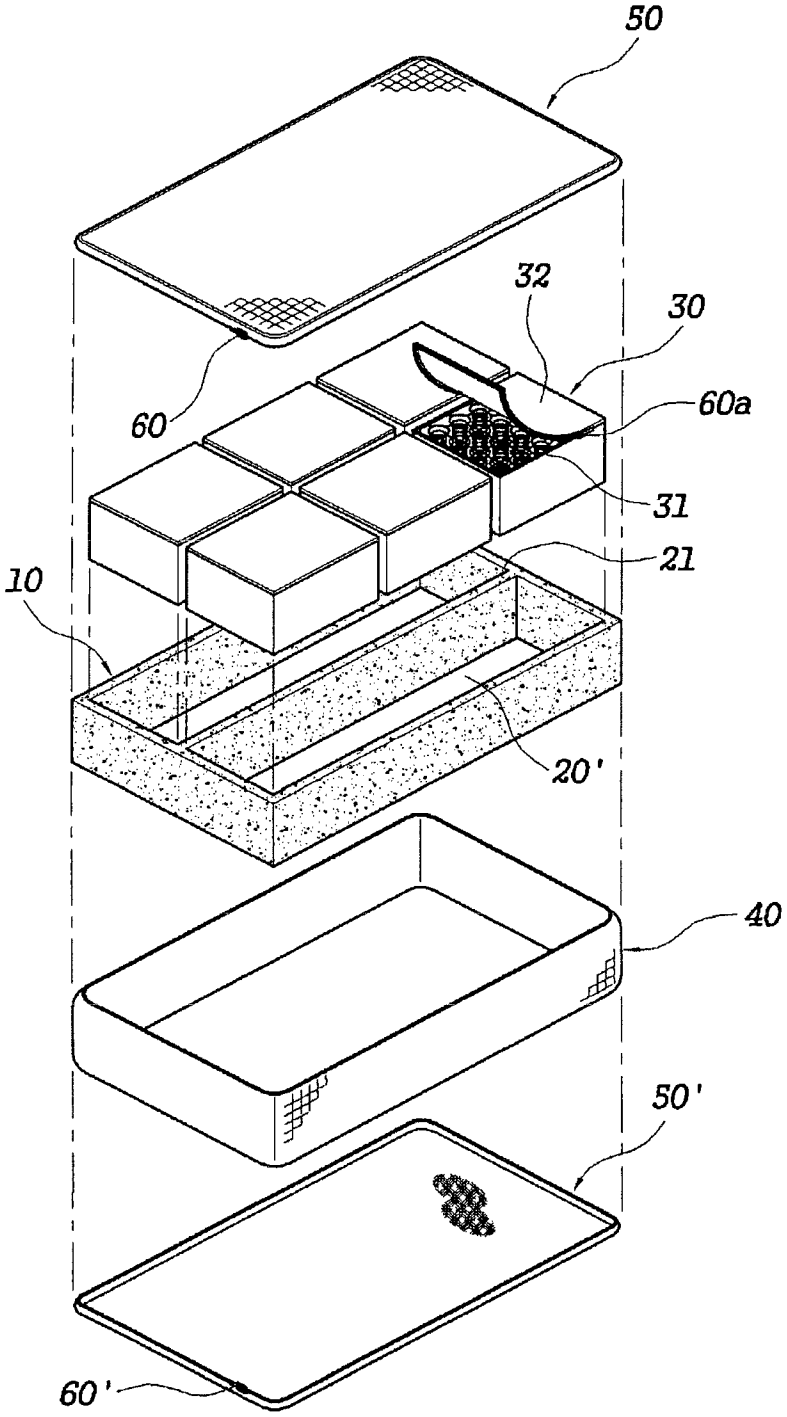



图 5



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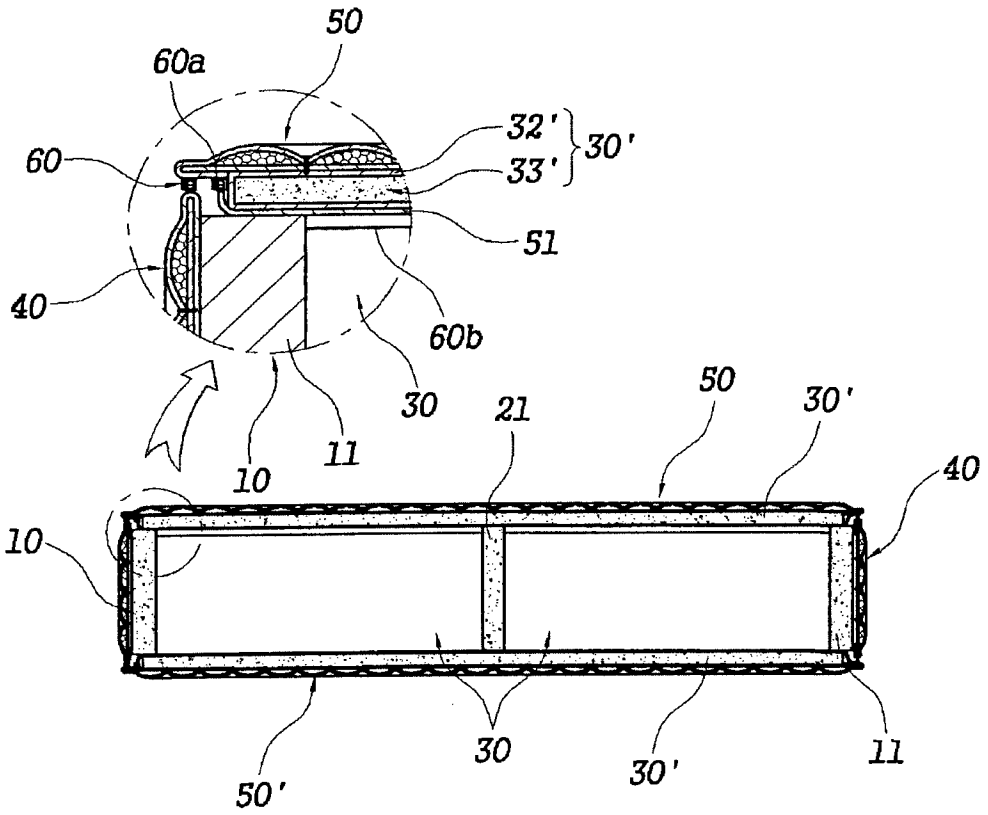



图 6



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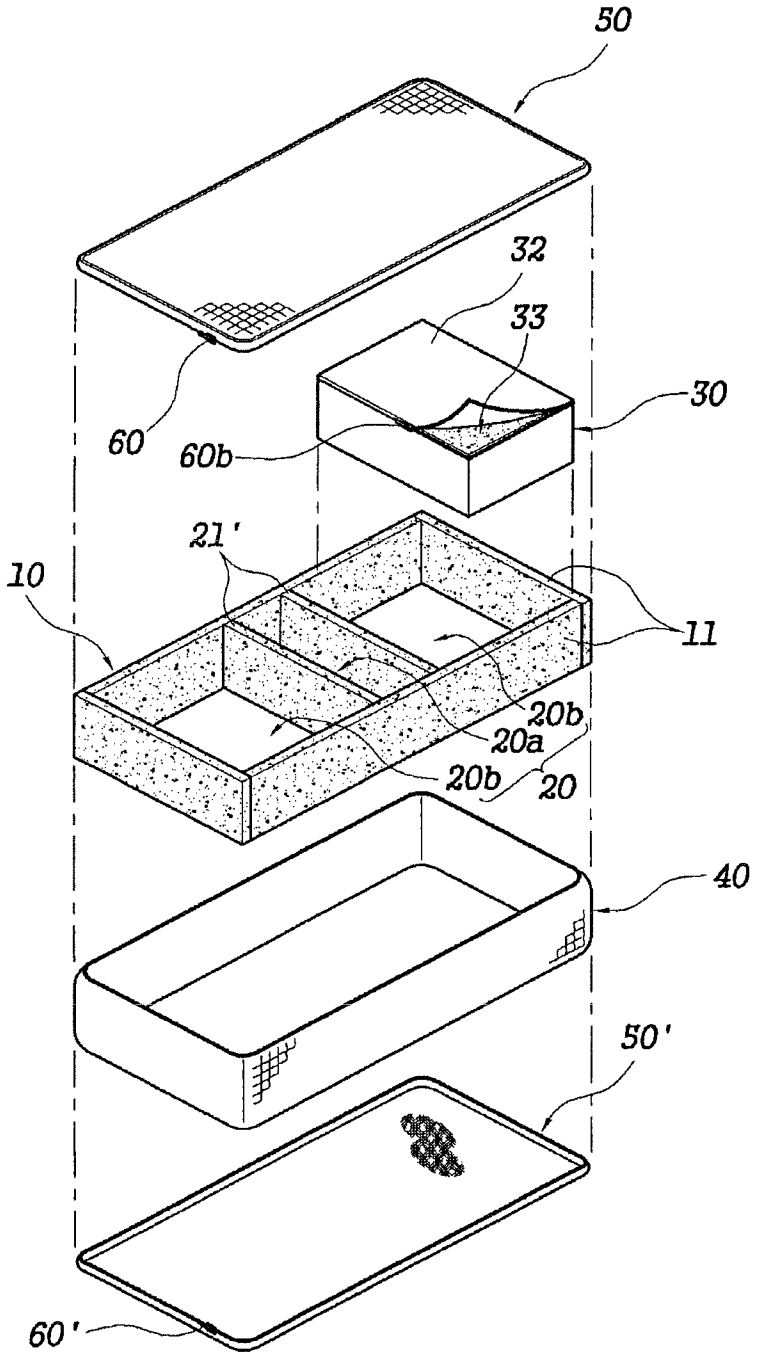



图 7



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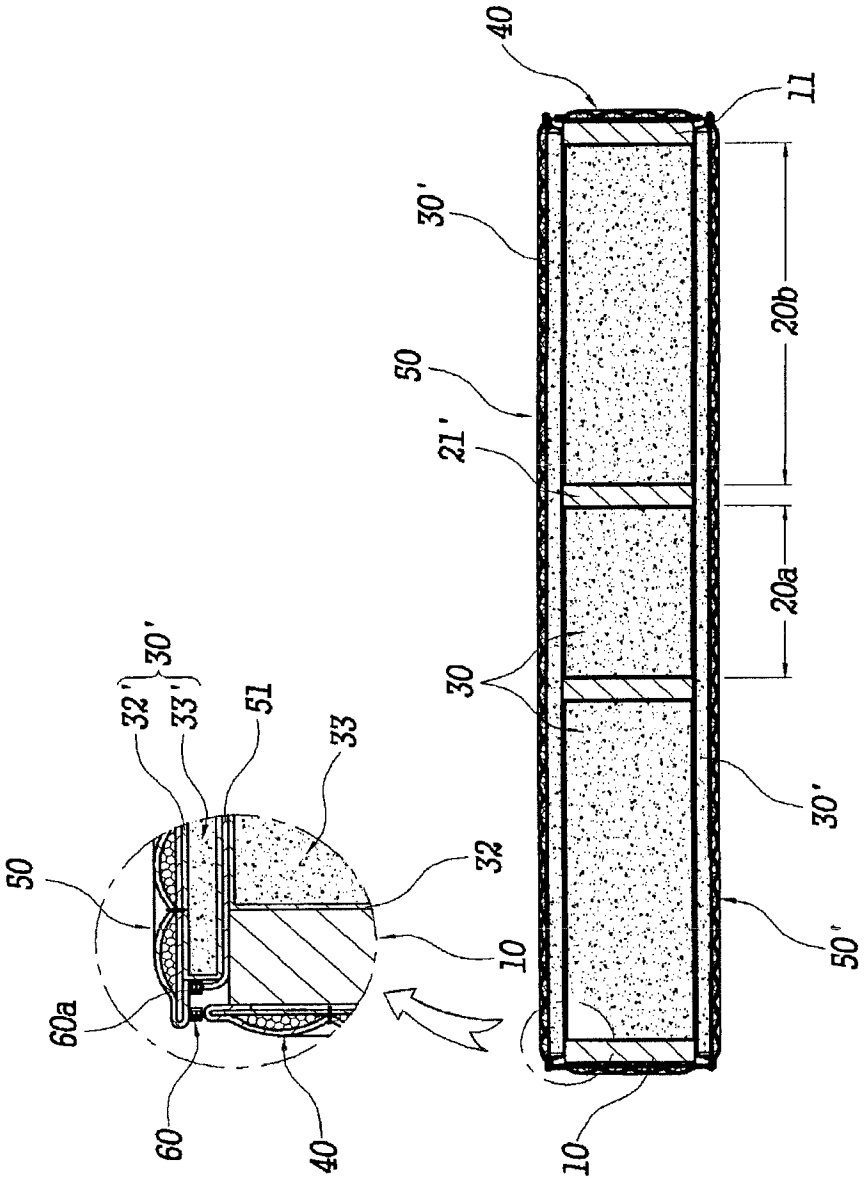



图 8



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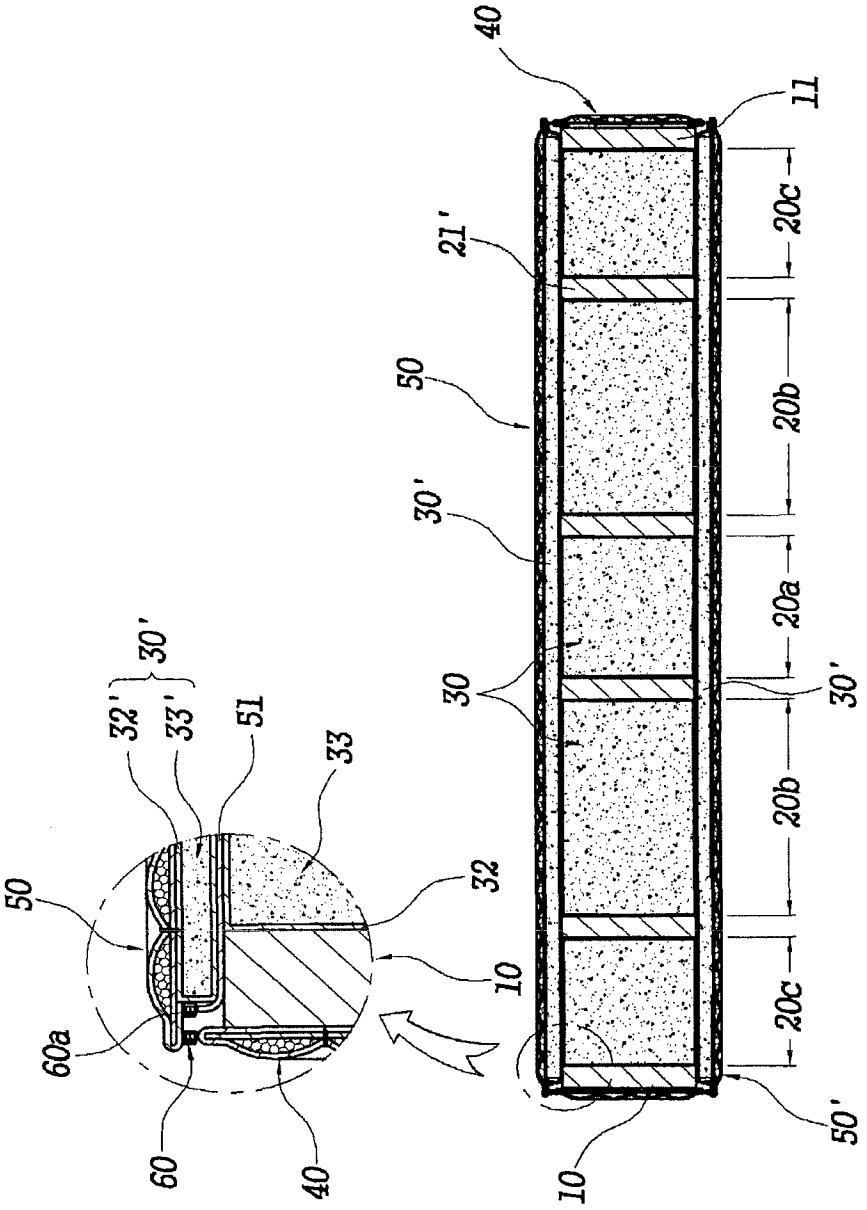



图 9



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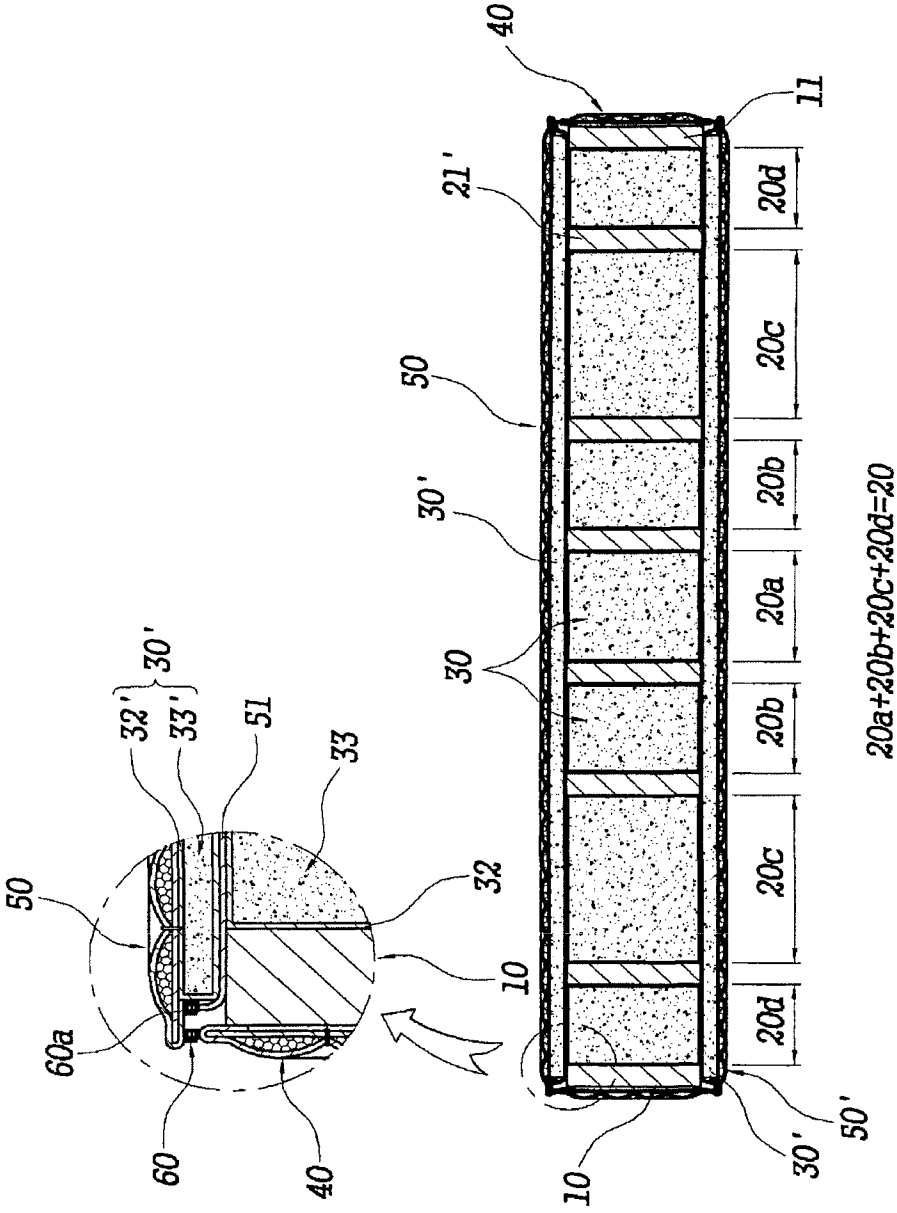



图 10



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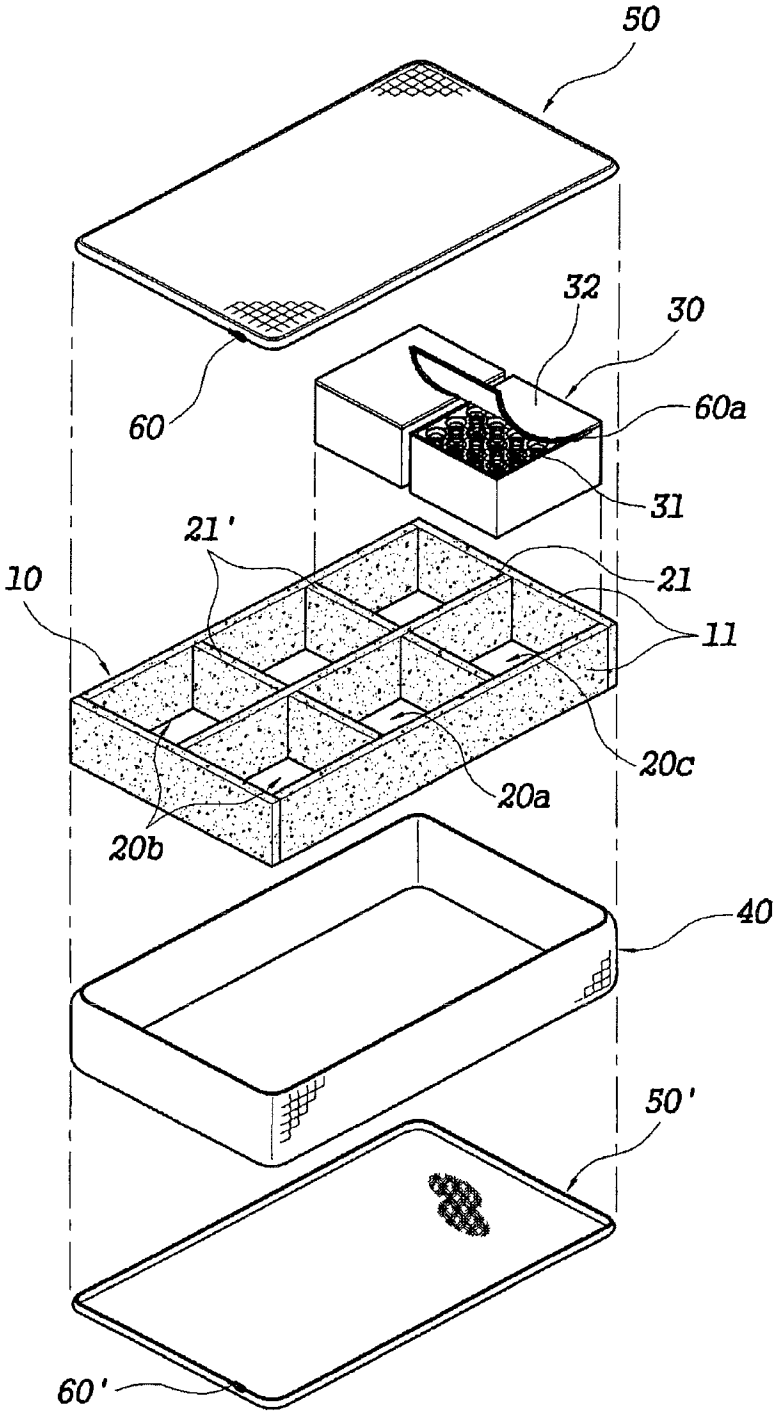



图 11



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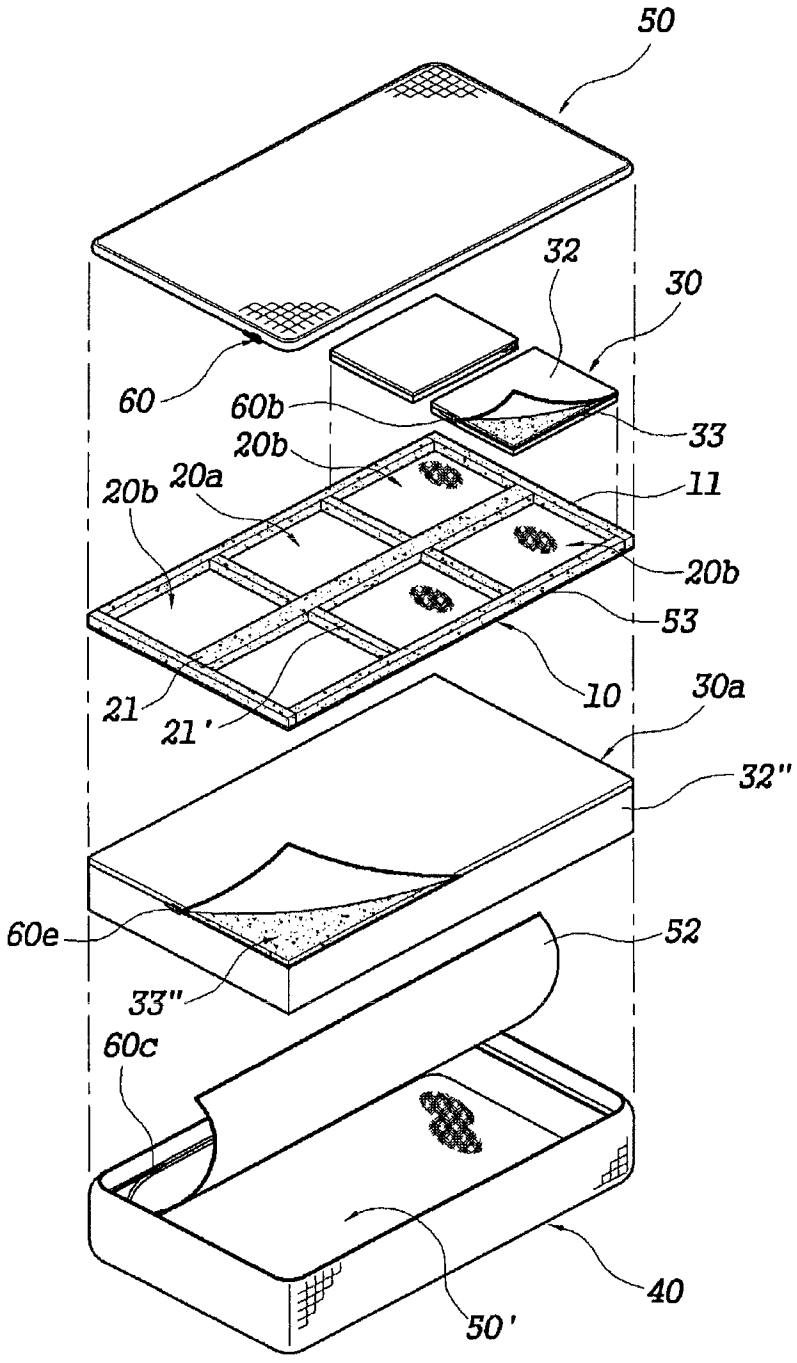



图 12



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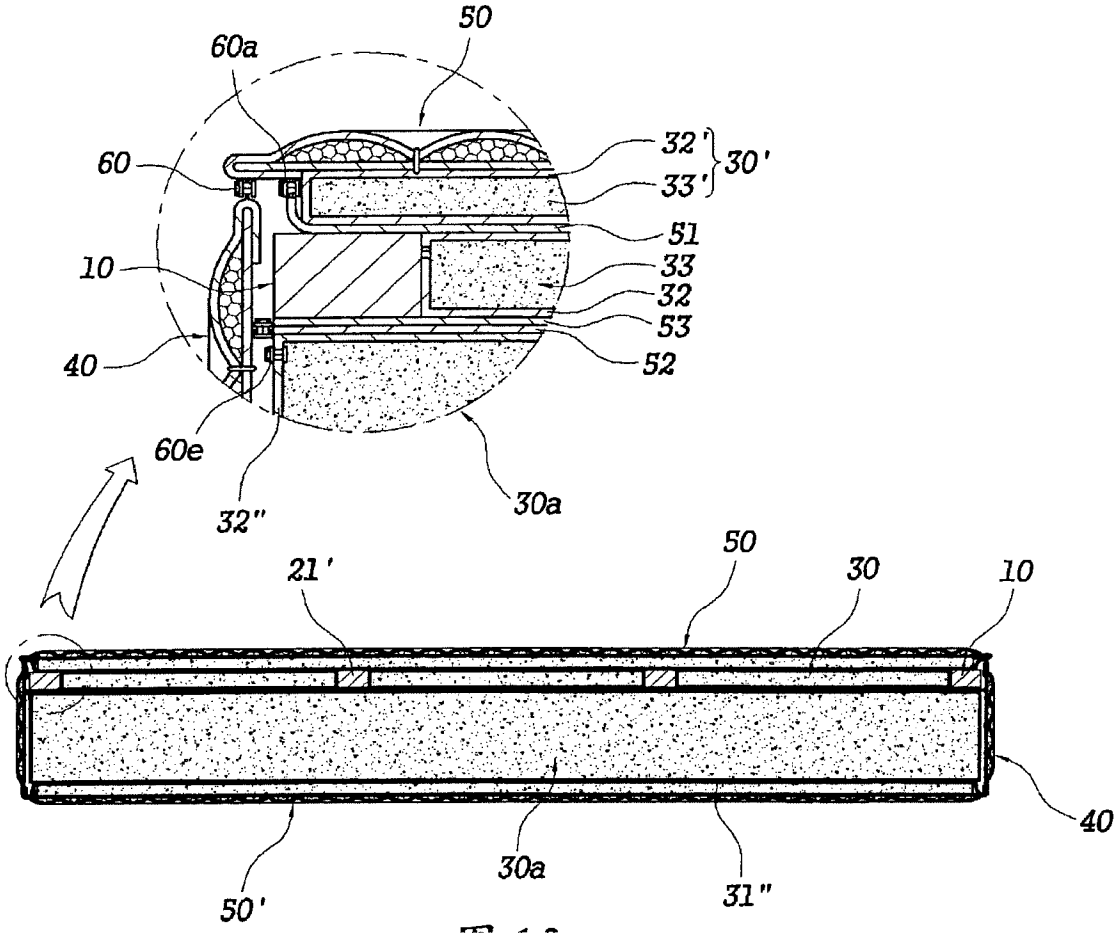



图 13



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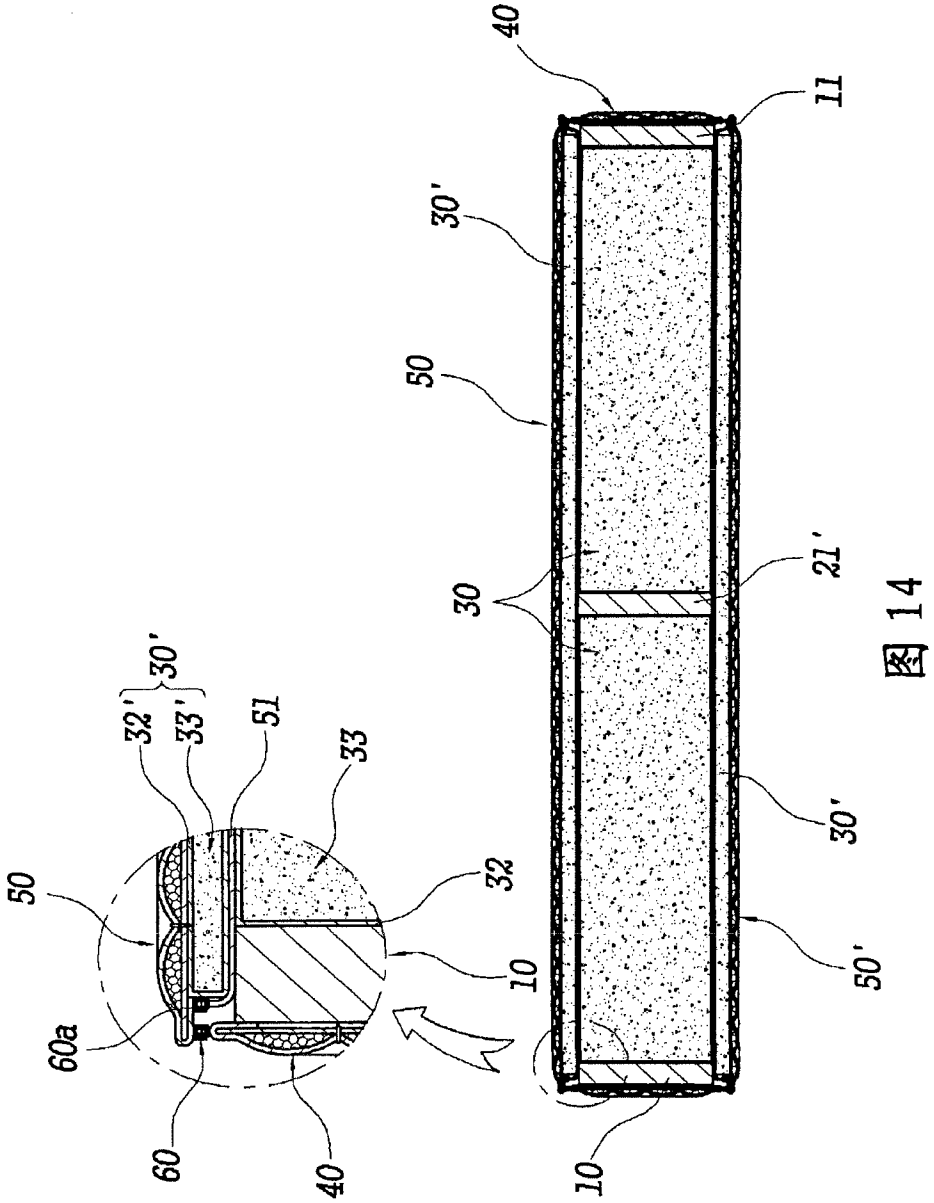



图 14



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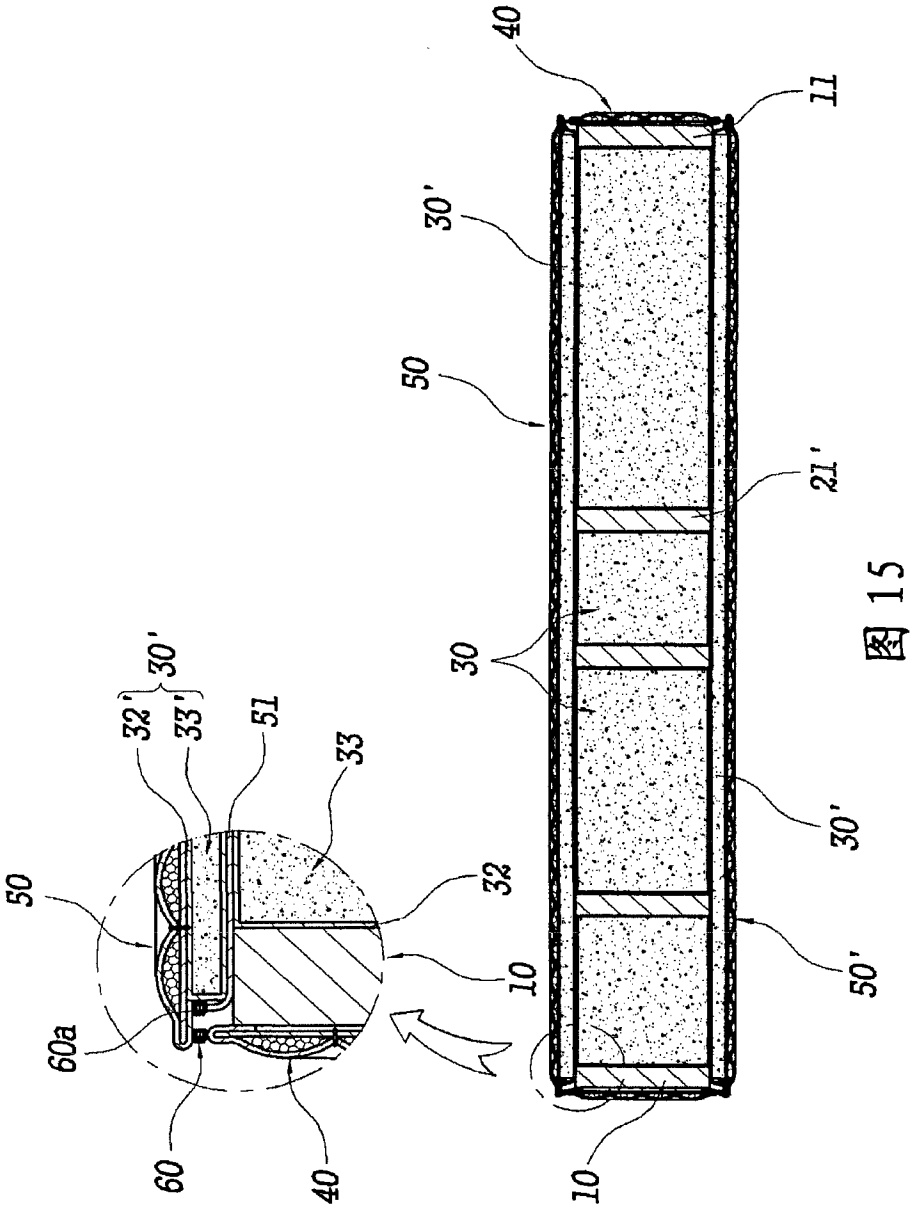



图 15



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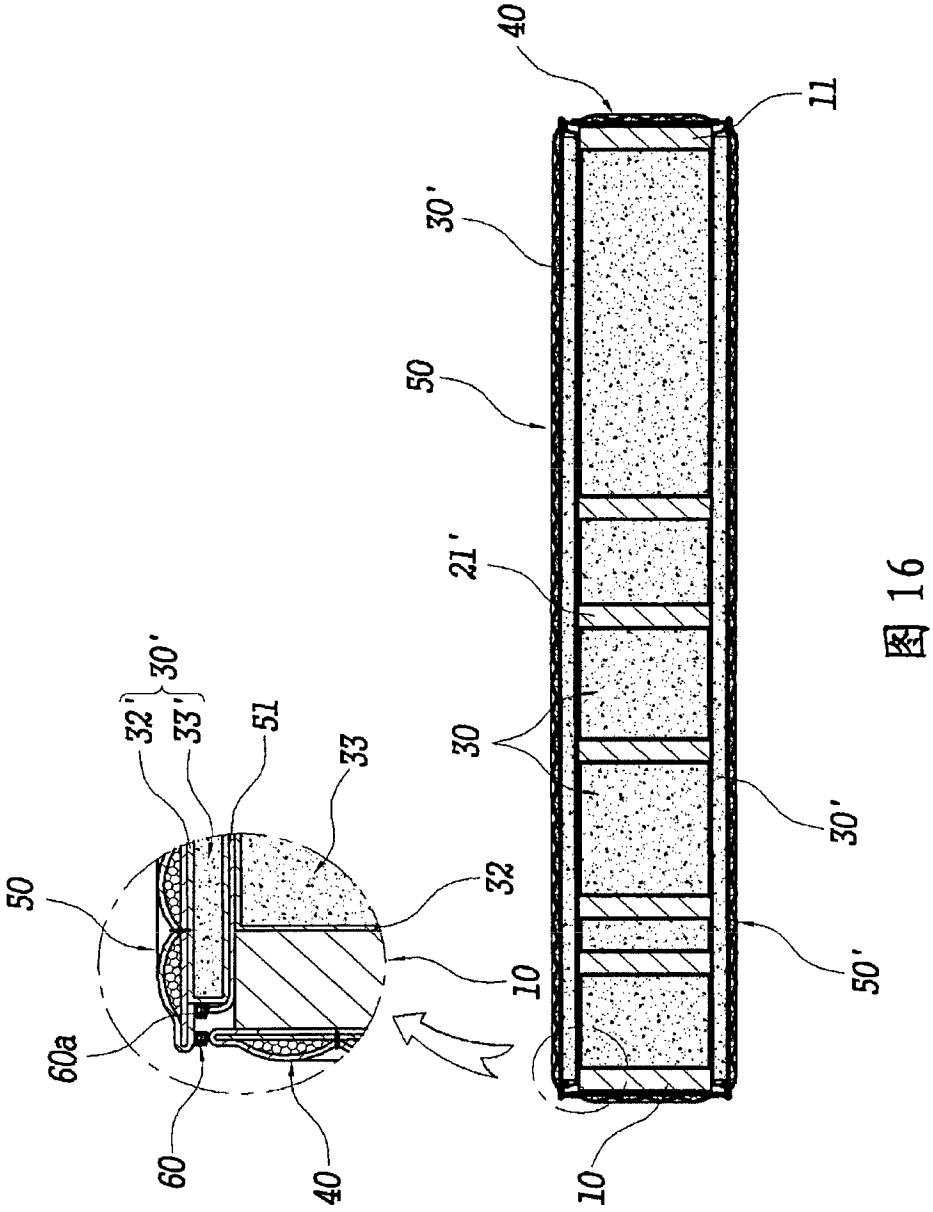



图 16



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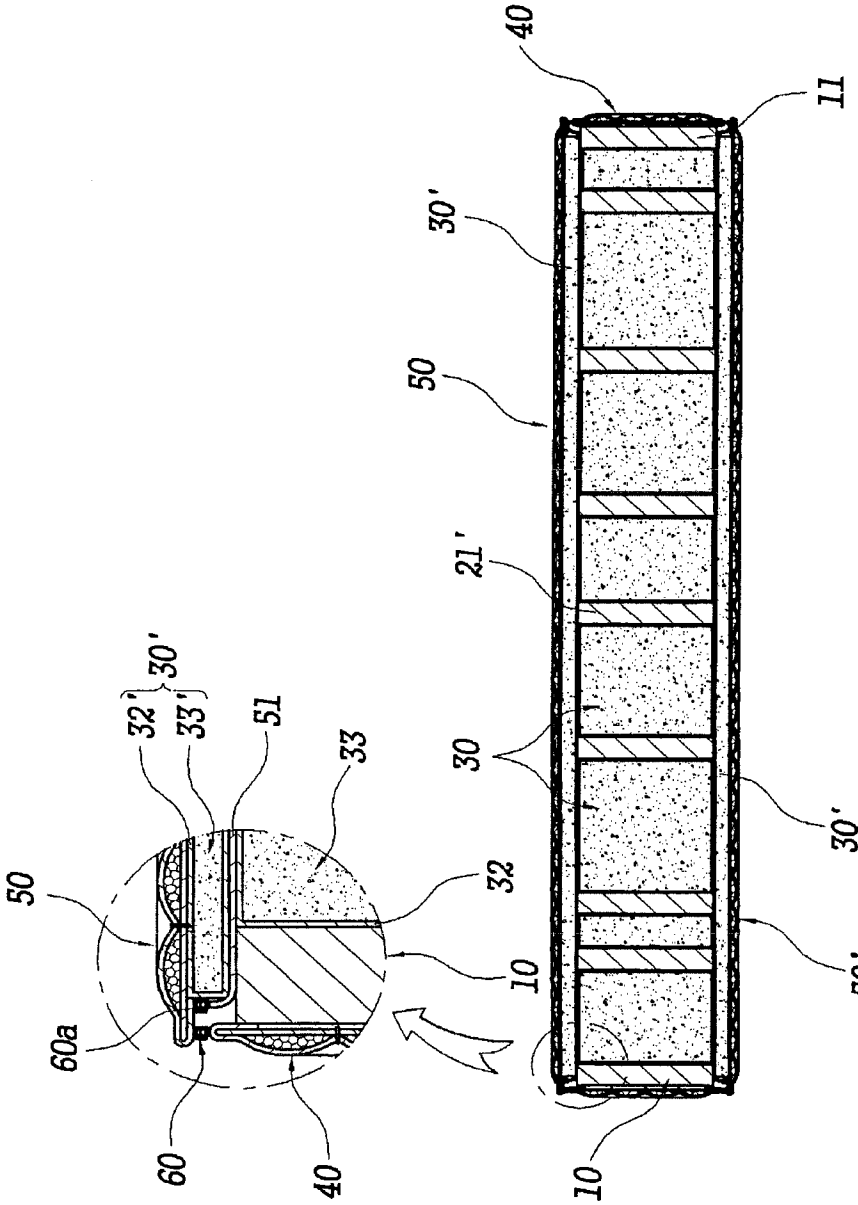



图 17



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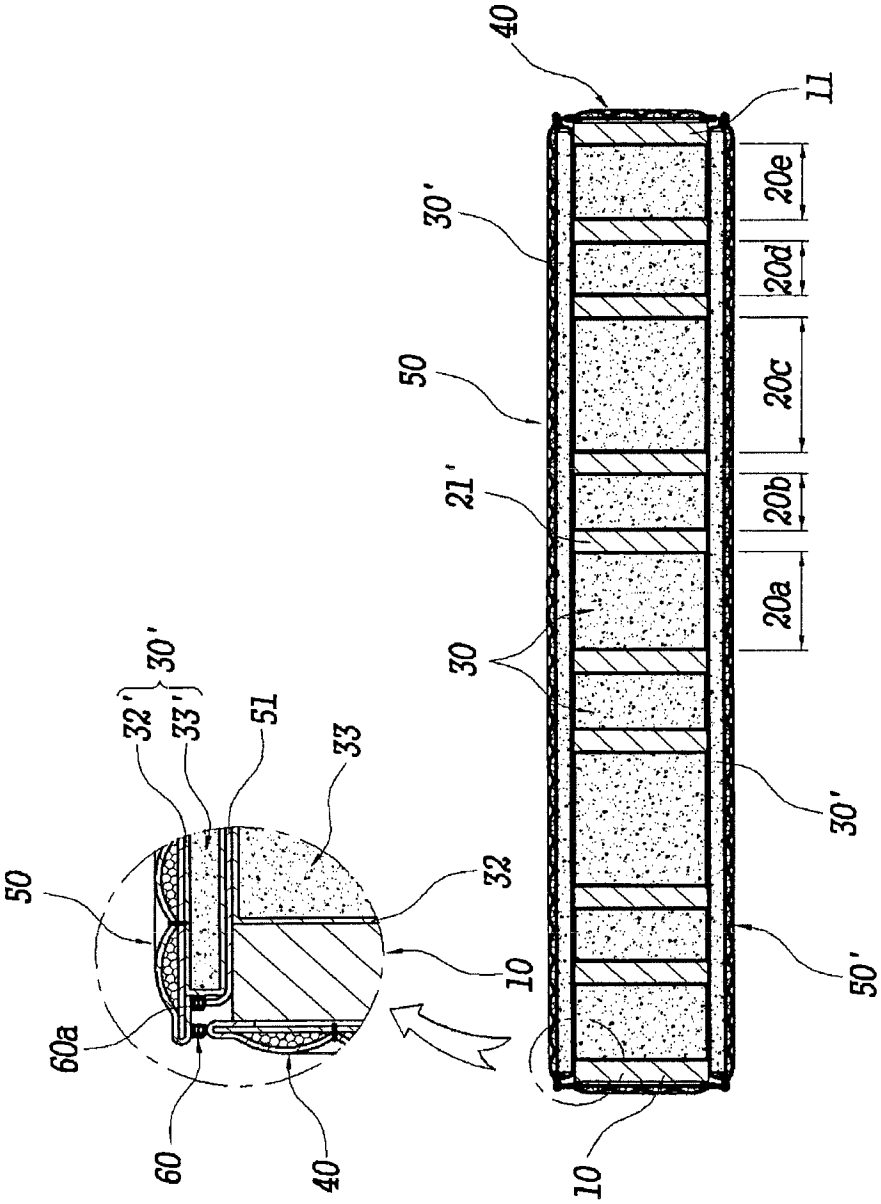



图 18



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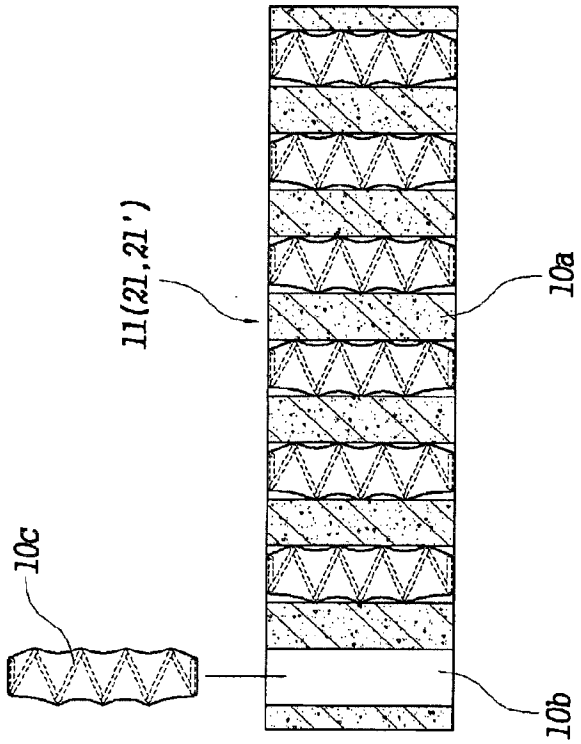



图 19

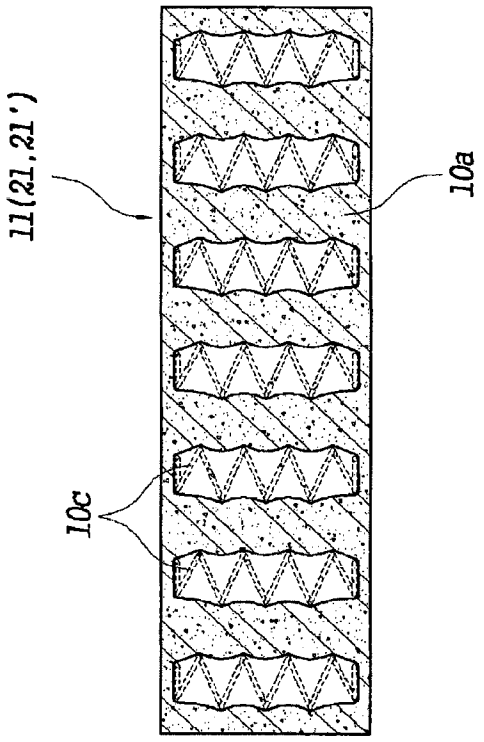



图 20



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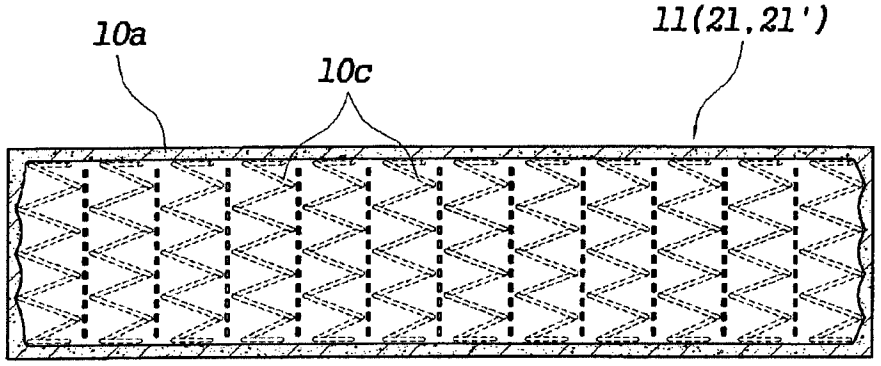



图 21

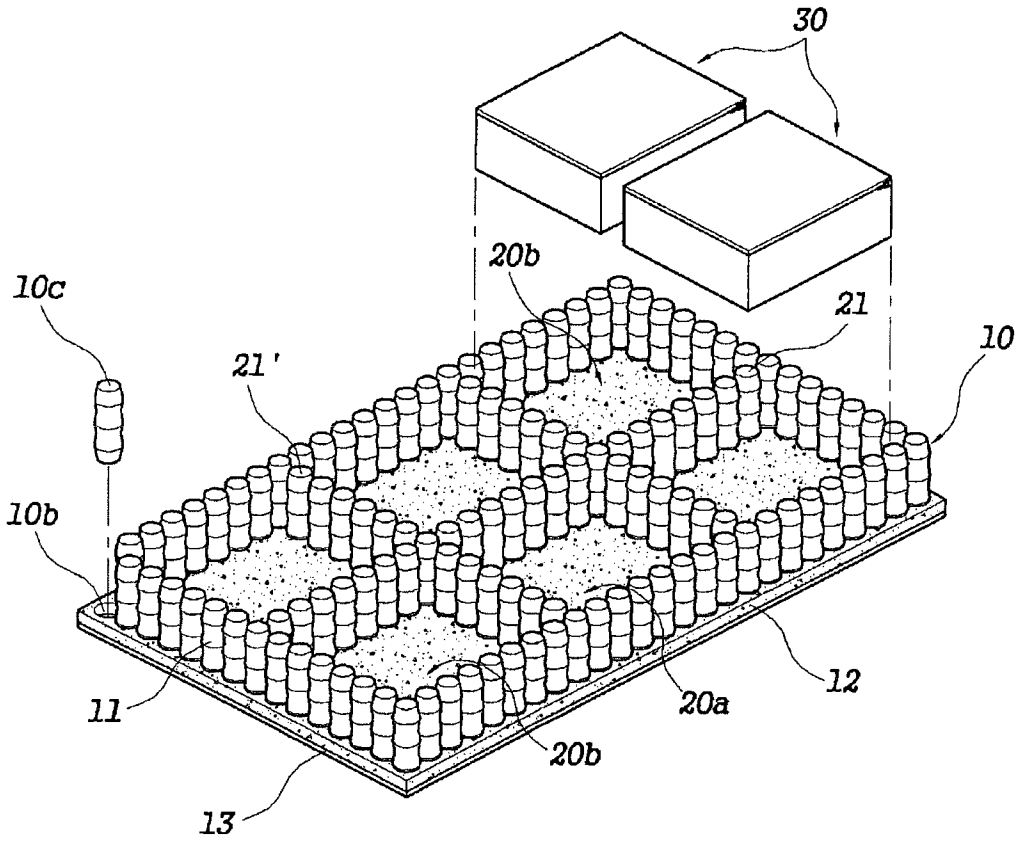



图 22



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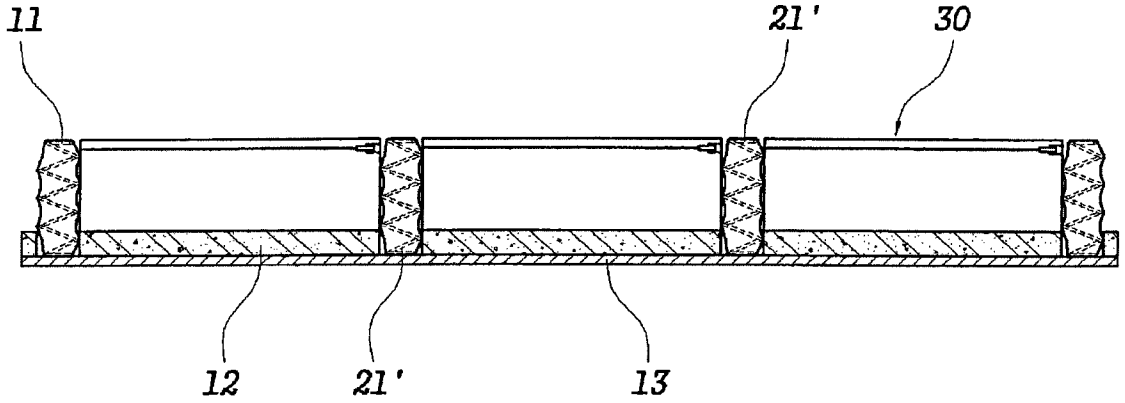



图 23



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Espacenet

# Bibliographic data: CN105747678 (A) — 2016-07-13

## Hard-edge independent bagged spring mattress

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**Applicant(s):** JIAO QIE ± (焦伽)

**Classification:** **- international:** ***A47C27/05; A47C27/07***
**- cooperative:**

**Application number:** CN201410769751 20141215 Global Dossier

**Priority number(s):** CN201410769751 20141215

## Abstract of CN105747678 (A)

The invention provides a hard-edge independent bagged spring mattress comprising a fireproof cover, and a bagged mattress core, sponges and white cotton felts which are all placed in the fireproof cover, wherein the sponges are flatly laid and bonded respectively on the upper outer surface and the lower outer surface of the bagged mattress core, to form a double-clipped sponge layer. At the same time, the white cotton felts are flatly laid and bonded respectively on the upper outer surface and the lower outer surface of the double-clipped sponge layer; the top surface and the bottom surface of the bagged mattress core are fixed by flat hard-edge frames. The bagged mattress core is fixed by the flat hard-edge frames, so that the overall strength can be increased, even if a condition of larger edge local pressure load occurs, the bagged mattress core is not easy to deform or even collapse, and the overall quality is greatly improved.

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(51)Int.Cl.
*A47C 27/05*(2006.01)
*A47C 27/07*(2006.01)

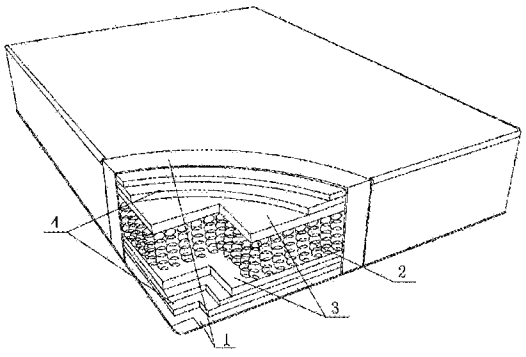
权利要求书1页 说明书2页 附图2页

(54)发明名称

一种硬边独立袋装弹簧床垫

(57)摘要

本发明提供一种硬边独立袋装弹簧床垫，包括有防火套以及分别置于该防火套内的袋装垫芯、海绵、白绵毡，其中，所述海绵分别平铺粘在袋装垫芯的上、下外表面上，形成双夹海绵层，同时，在该双夹海绵层的上、下外表面上平铺粘有白绵毡，所述袋装垫芯的顶面和底面都是以扁形硬边边框固定。本发明通过扁形硬边边框固定袋装垫芯，使得其整体强度得以增加，即使发生其边缘局部压力载荷较大的情况，袋装垫芯也不会容易产生变形，甚至塌陷，整体质量得到了大大提高。




CN 105747678 A

1. 一种硬边独立袋装弹簧床垫，它包括有防火套(1)以及分别置于该防火套(1)内的袋装垫芯(2)、海绵(3)、白绵毡(4)，其中，所述海绵(3)分别平铺粘在袋装垫芯(2)的上、下外表面上，形成双夹海绵层，同时，在该双夹海绵层的上、下外表面上平铺粘有白绵毡(4)，其特征在于：所述袋装垫芯(2)的顶面和底面都是以扁形硬边边框(5)固定。

2. 根据权利要求 1 所述的一种硬边独立袋装弹簧床垫，其特征在于：所述扁形硬边边框(5)的厚度为 7 ～ 8mm。



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# 一种硬边独立袋装弹簧床垫

## 技术领域

[0001] 本发明涉及家具用品的技术领域，尤其是指一种硬边独立袋装弹簧床垫。

## 背景技术

[0002] 随着社会的不断进步，人们对生活品质的要求也越来越高。而在人的一生当中，睡眠是每人每天都需要的，大多数人一生中的睡眠时间超过生命的1/3，而舒适的弹簧床垫可以提高人们的睡眠质量。因此，高品质的弹簧床垫就越来越受到人们的追捧。目前，高品质的弹簧床垫一般为独立袋装弹簧床垫，但是，传统的独立袋装弹簧床垫一般都是采用软质边框进行固定其袋装垫芯，其目的在于提高其舒适感和产品平整度，虽然这样的结构设计能得到以上优点，但是此类独立袋装弹簧床垫存在一个弊端，就是容易变形，而且特别是当其边缘局部压力载荷较大时，其变形情况就更为明显，存在质量问题。

## 发明内容

[0003] 本发明的目的在于克服现有技术的不足，提供一种设计合理可靠、不易变形、质量高、使用寿命长的硬边独立袋装弹簧床垫。

[0004] 为实现上述目的，本发明所提供的技术方案为：一种硬边独立袋装弹簧床垫，它包括有防火套以及分别置于该防火套内的袋装垫芯、海绵、白绵毡，其中，所述海绵分别平铺粘在袋装垫芯的上、下外表面上，形成双夹海绵层，同时，在该双夹海绵层的上、下外表面上平铺粘有白绵毡，所述袋装垫芯的顶面和底面都是以扁形硬边边框固定。

[0005] 所述扁形硬边边框的厚度为7～8mm。

[0006] 本发明在采用了上述方案后，其最大优点在于本发明通过扁形硬边边框固定袋装垫芯，使得其整体强度得以增加，即使发生其边缘局部压力载荷较大的情况，袋装垫芯也不会容易产生变形，甚至塌陷，整体质量得到了大大提高。

## 附图说明

[0007] 图1为本发明的俯视图。

图2为本发明的袋装垫芯的结构示意图。

图3为本发明的包装过程示意图。

## 具体实施方式

[0008] 下面结合具体实施例对本发明作进一步说明。

[0009] 参见附图1-3所示，本实施例所述的硬边独立袋装弹簧床垫，它包括有防火套1以及分别置于该防火套1内的袋装垫芯2、海绵3、白绵毡4，其中，本实施例所述的海绵3分别平铺粘在袋装垫芯2的上、下外表面上，形成双夹海绵层，同时，在该双夹海绵层的上、下外表面上平铺粘有白绵毡4；此外，本实施例所述袋装垫芯2的顶面和底面都是以厚度为7.5mm的扁形硬边边框5进行固定，这样的结构设计使得袋装垫芯2的整体强度得以加强，



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即使发生其边缘局部压力载荷较大的情况，其也不会容易产生变形，甚至塌陷，整体质量得到了大大提高。以下为本实施例上述硬边独立袋装弹簧床垫的包装过程：首先将硬边独立袋装弹簧床垫放入包装袋 6 内，然后辅助器械向弹簧垂直中心方向平压，排出硬边独立袋装弹簧床垫内的空气使其成为扁平状，之后卷折该扁平的硬边独立袋装弹簧床垫使其成为卷筒，最后再将卷好的硬边独立袋装弹簧床垫放入筒状的包装袋 7 内，便完成硬边独立袋装弹簧床垫的包装。如此包装方式可大大缩小硬边独立袋装弹簧床垫的包装体积，进而方便运输，同时，结合硬边独立袋装弹簧床垫的独特设计，使得本发明成为一款强度高、不易变形、使用寿命长、运输方便、美观实用的理想床垫，值得推广。

[0010] 以上所述之实施例子只为本发明之较佳实施例，并非以此限制本发明的实施范围，故凡依本发明之形状、原理所作的变化，均应涵盖在本发明的保护范围内。



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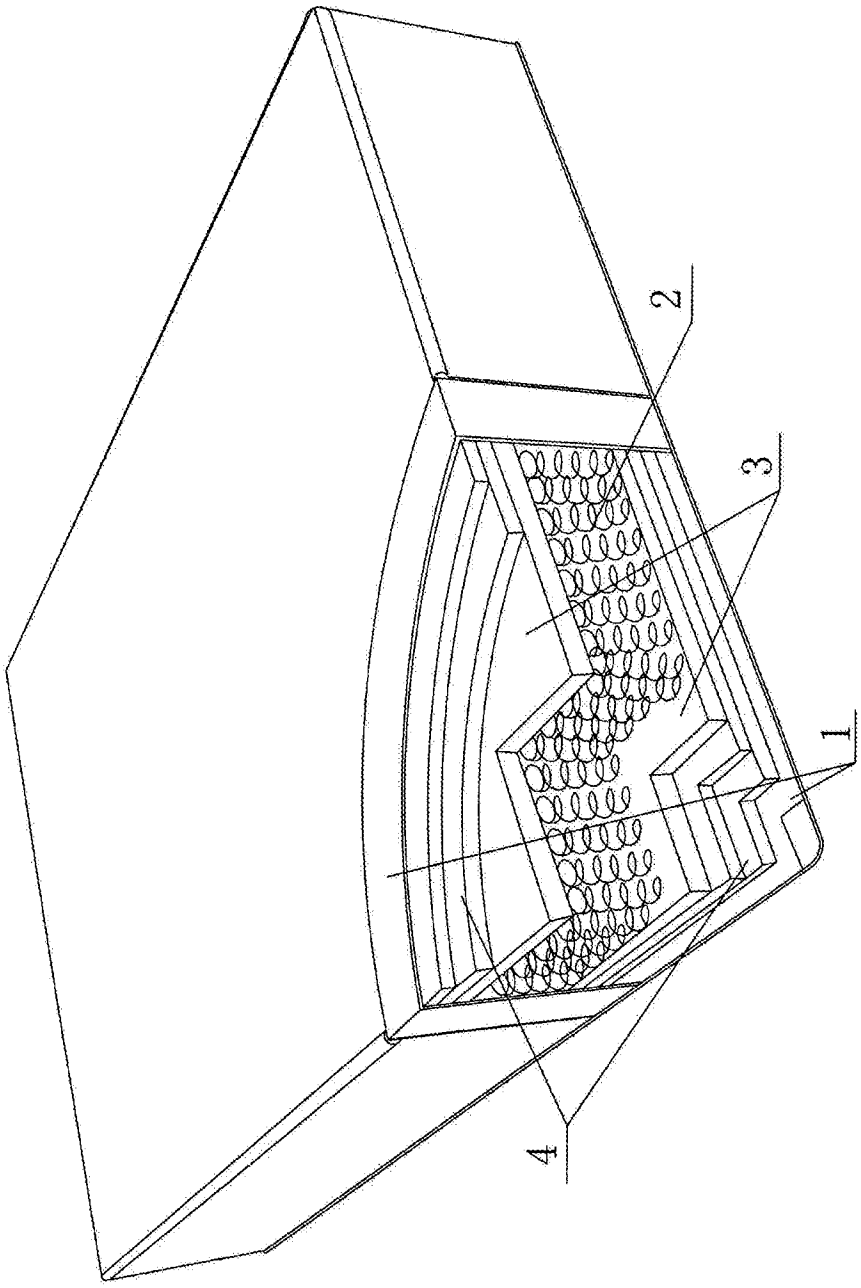



图 1



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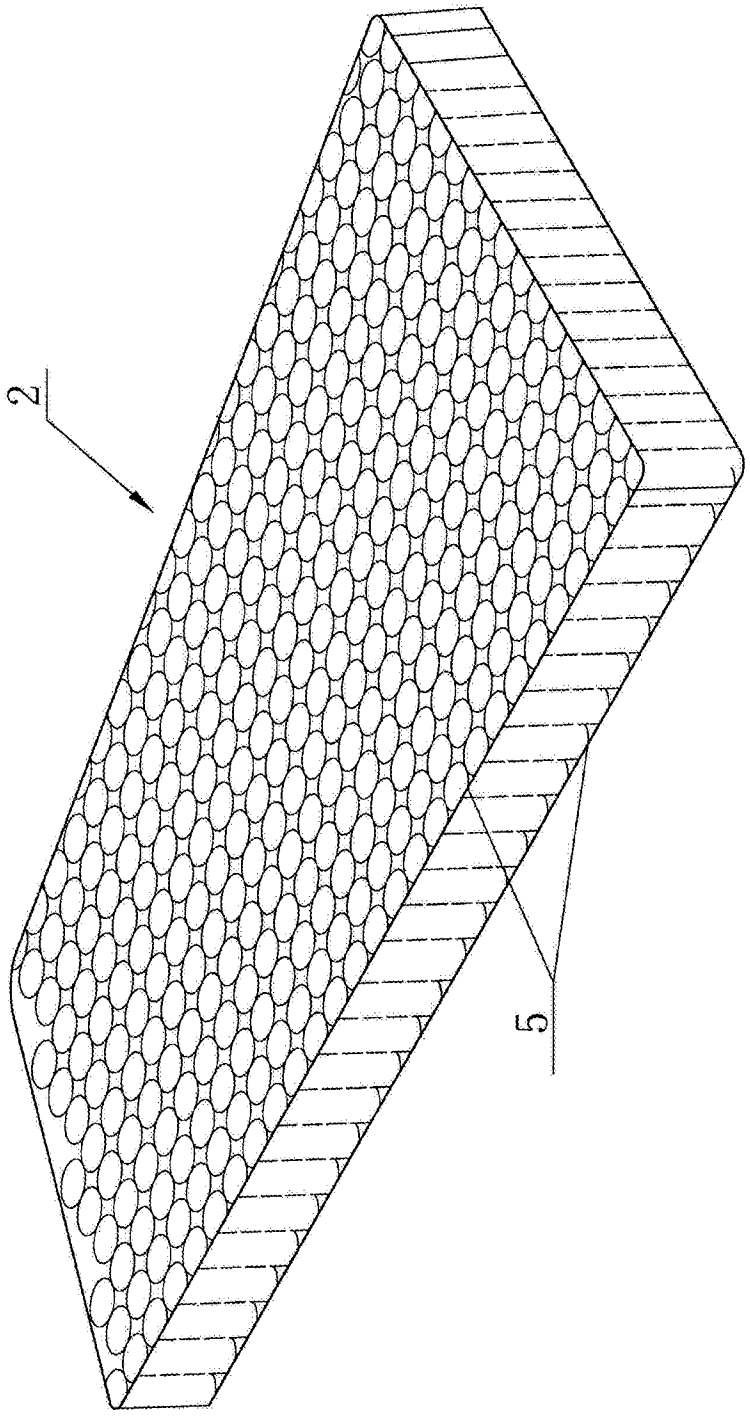



图 2

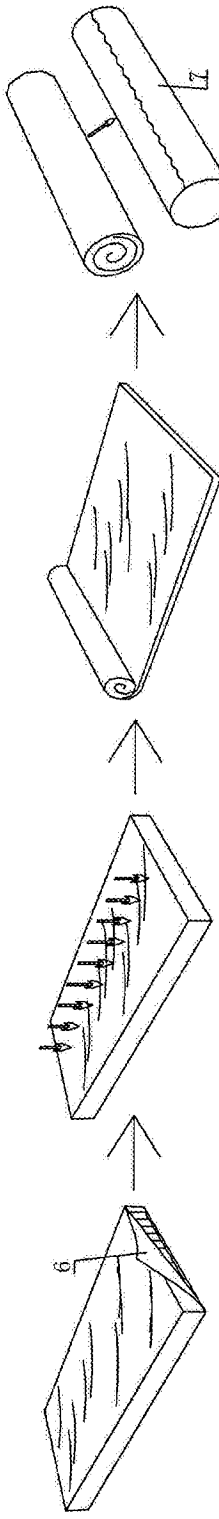



图 3



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Espacenet

# Bibliographic data: CN204734212 (U) — 2015-11-04

## A inner bag and mattress for mattress

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**Applicant(s):** CHONGQING WELAND MATTRESS FURNITURE CO LTD ± (CHONGQING WELAND MATTRESS FURNITURE CO., LTD)

**Classification:** **- international:** ***A47C27/05; A47C27/15; A47C27/22***
**- cooperative:**

**Application number:** CN201520309515U 20150514

**Priority number (s):** CN201520309515U 20150514

## Abstract of CN204734212 (U)

The utility model provides an inner bag and mattress for mattress, an inner bag includes end inner bag for the mattress, end inner bag includes the edge the thickness direction of end inner bag is by the cotton layer of the lower supreme first sponge layer that stacks gradually, spring layer, second sponge layer and pine. The utility model provides an inner bag that is used for the mattress includes that wherein, shockproof, anti -interference, cold -proof effect is played on first sponge layer and second sponge layer by the cotton layer of the lower supreme first sponge layer that stacks gradually, spring layer, second sponge layer and pine, the spring layer can increase the bearing performance of inner bag, prevents the mattress deformation of sining, the cotton layer of pine can increase the gas permeability of inner bag to the noise control. Consequently, the bearing performance that contains the mattress of this inner bag is strong, and the deformation is difficult for sining to the comfort level is high.

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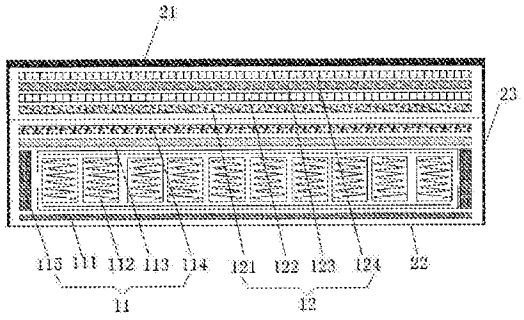
权利要求书1页 说明书5页 附图1页

(54)实用新型名称

用于床垫的内胆及床垫

(57)摘要

本实用新型提供了一种用于床垫的内胆及床垫，所述用于床垫的内胆包括底内胆，所述底内胆包括沿所述底内胆的厚度方向由下至上依次层叠的第一海绵层、弹簧层、第二海绵层和松棉层。本实用新型提供的用于床垫的内胆包括由下至上依次层叠的第一海绵层、弹簧层、第二海绵层和松棉层，其中，第一海绵层和第二海绵层起到防震、抗干扰、保暖的作用；弹簧层能够增加内胆的承托性能，防止床垫塌陷变形；松棉层能够增加内胆的透气性，并且防止噪音。因此，包含该内胆的床垫的承托性能强，不易塌陷变形，并且舒适度高。




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