US011903860B2

(12) **United States Patent**
Harrigan

(10) **Patent No.: US 11,903,860 B2**
(45) **Date of Patent: *Feb. 20, 2024**

(54) **BRACE WITH REMOVABLE AROMATHERAPY POUCH**

(71) Applicant: **Jahumi Harrigan**, New York, NY (US)

(72) Inventor: **Jahumi Harrigan**, New York, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 490 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/782,291**

(22) Filed: **Feb. 5, 2020**

(65) **Prior Publication Data**

US 2020/0170819 A1 Jun. 4, 2020

Related U.S. Application Data

(63) Continuation of application No. 15/443,408, filed on Feb. 27, 2017, now Pat. No. 10,561,513.

(51) **Int. Cl.**

A61F 5/01	(2006.01)
A61F 7/02	(2006.01)
A61F 5/02	(2006.01)

(52) **U.S. Cl.**

CPC ***A61F 5/0111*** (2013.01); ***A61F 5/0106*** (2013.01); ***A61F 5/0118*** (2013.01); ***A61F 5/02*** (2013.01); ***A61F 7/02*** (2013.01); *A61F 2007/0207* (2013.01); *A61F 2007/0225* (2013.01)

(58) **Field of Classification Search**

CPC A61F 7/02; A61F 2007/0207; A61F 2007/0223; A61F 2007/0279; A61F 2007/0266; A61F 2007/0088; A61F 5/0111; A61F 5/0106; A61H 7/001

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,591,122	A *	1/1997	Yewer, Jr.	A61F 5/028 128/100.1
5,716,388	A *	2/1998	Petelle	A61F 7/02 607/108
6,149,617	A *	11/2000	McNally	A61F 13/108 602/2
6,656,210	B1 *	12/2003	Plewes	A61F 7/02 607/114
10,561,513	B1 *	2/2020	Harrigan	A61F 5/0106
2008/0064996	A1 *	3/2008	Bretl	A61F 7/02 602/2
2016/0374851	A1 *	12/2016	Smith	A61F 7/02 607/114

* cited by examiner

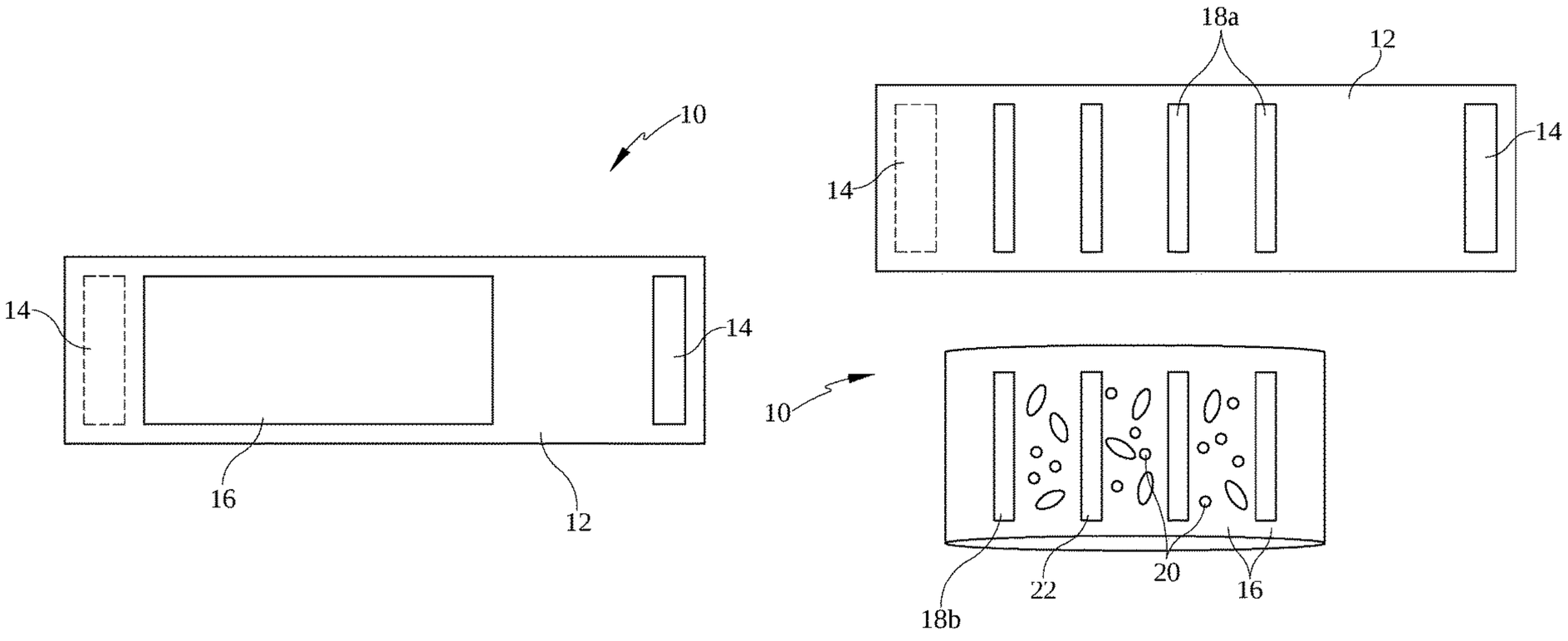
Primary Examiner — Ophelia A Hawthorne

(74) *Attorney, Agent, or Firm* — Michael J. Feigin, Esq.; Feigin and Fridman LLC

(57) **ABSTRACT**

A brace for treating a portion of a human body, the brace including a brace body including at least one fastener adapted for fastening the brace about the portion of the human body, and an aromatherapy heat-treatment pack removably attachable to the brace body, the aromatherapy heat-treatment pack containing at least one temperature maintaining component and at least one aromatherapeutic component, wherein the aromatherapy heat-treatment pack is adapted to maintain a temperature thereof for a predetermined treatment duration.

5 Claims, 8 Drawing Sheets



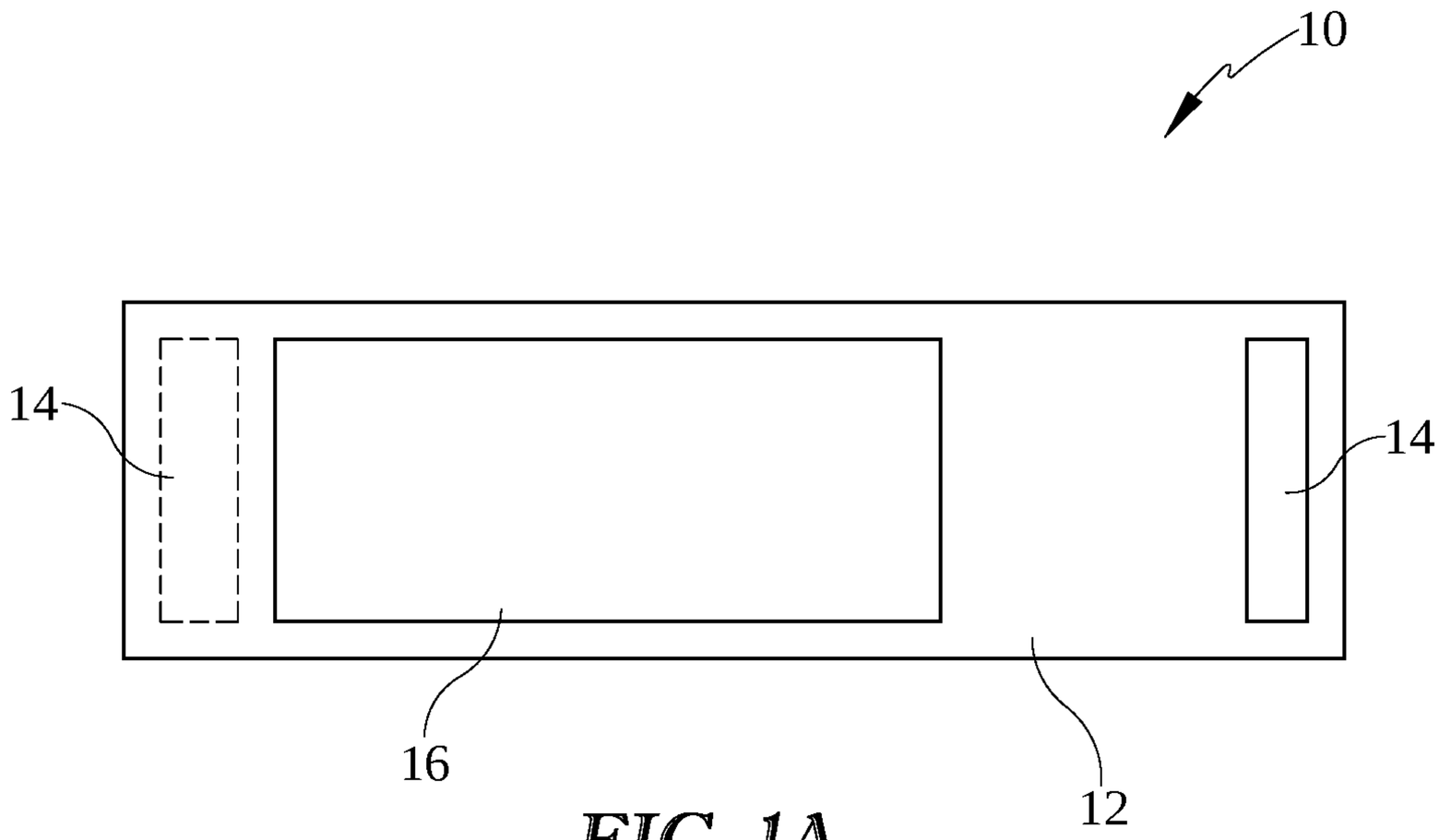
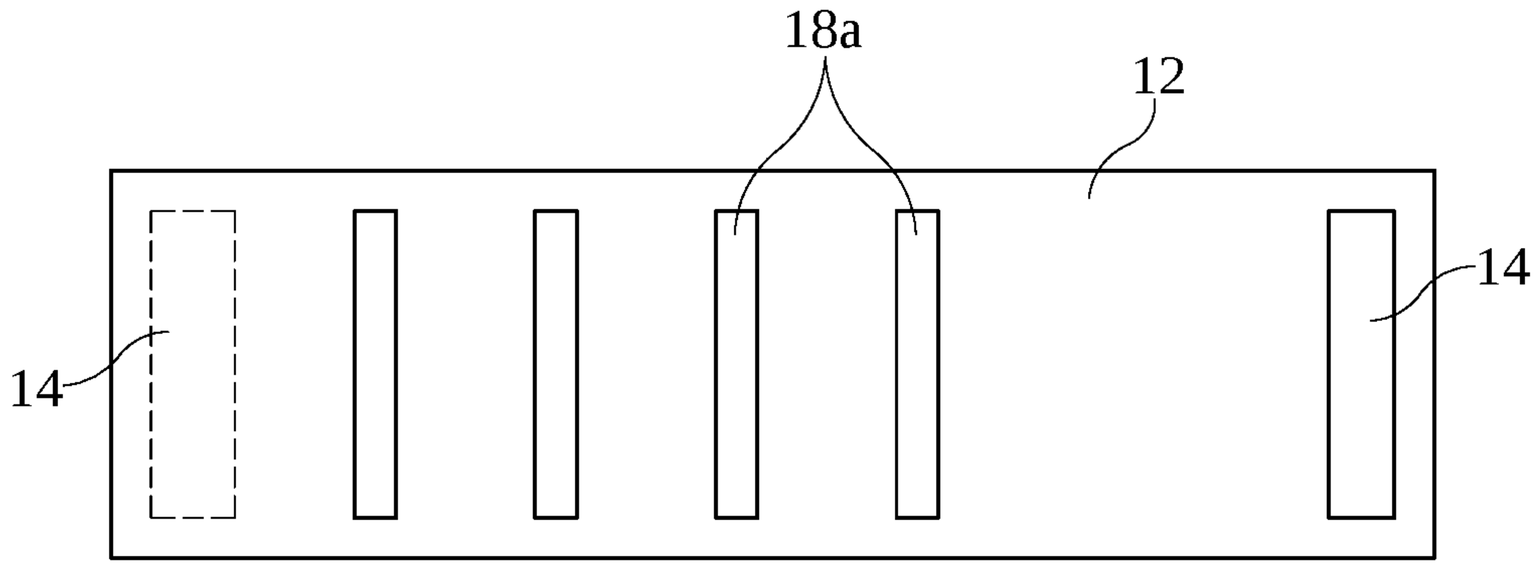


FIG. 1A



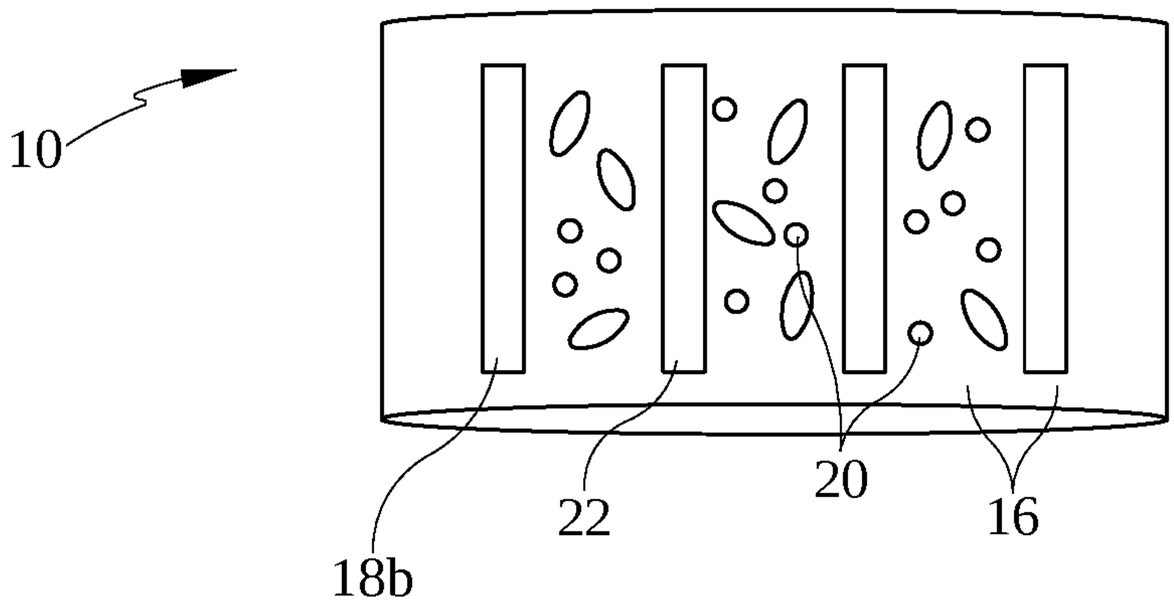


FIG. 1B

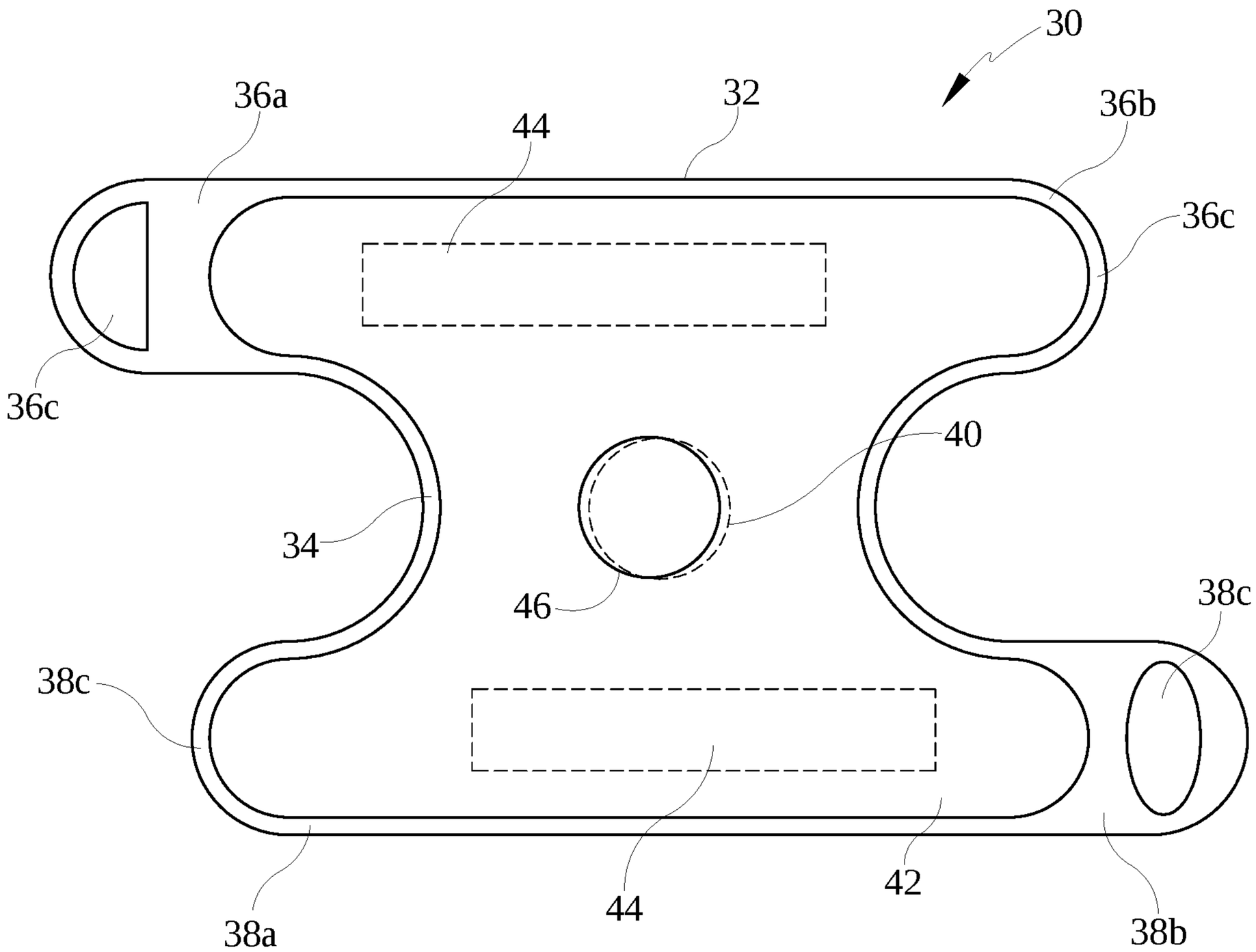


FIG. 2

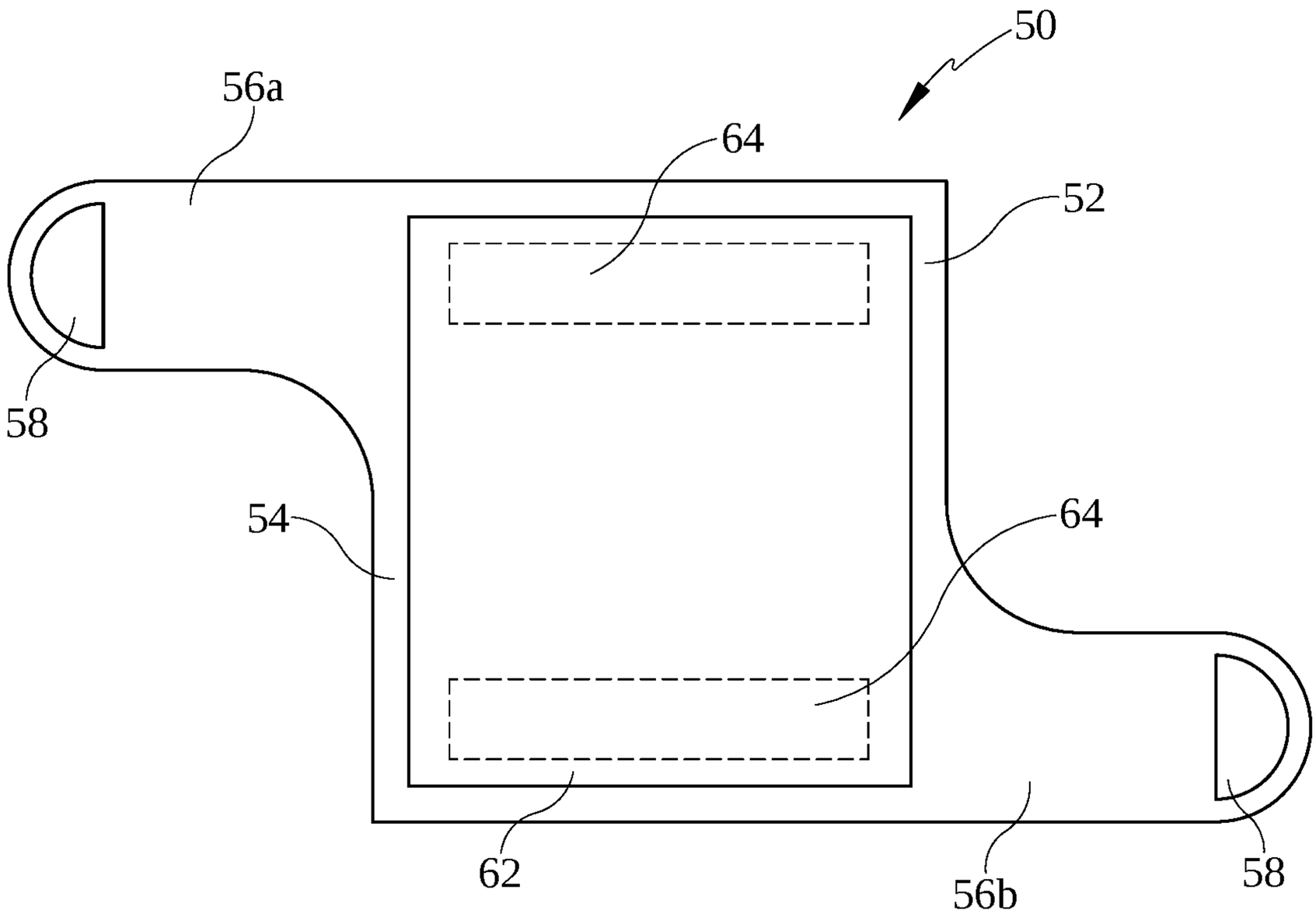


FIG. 3

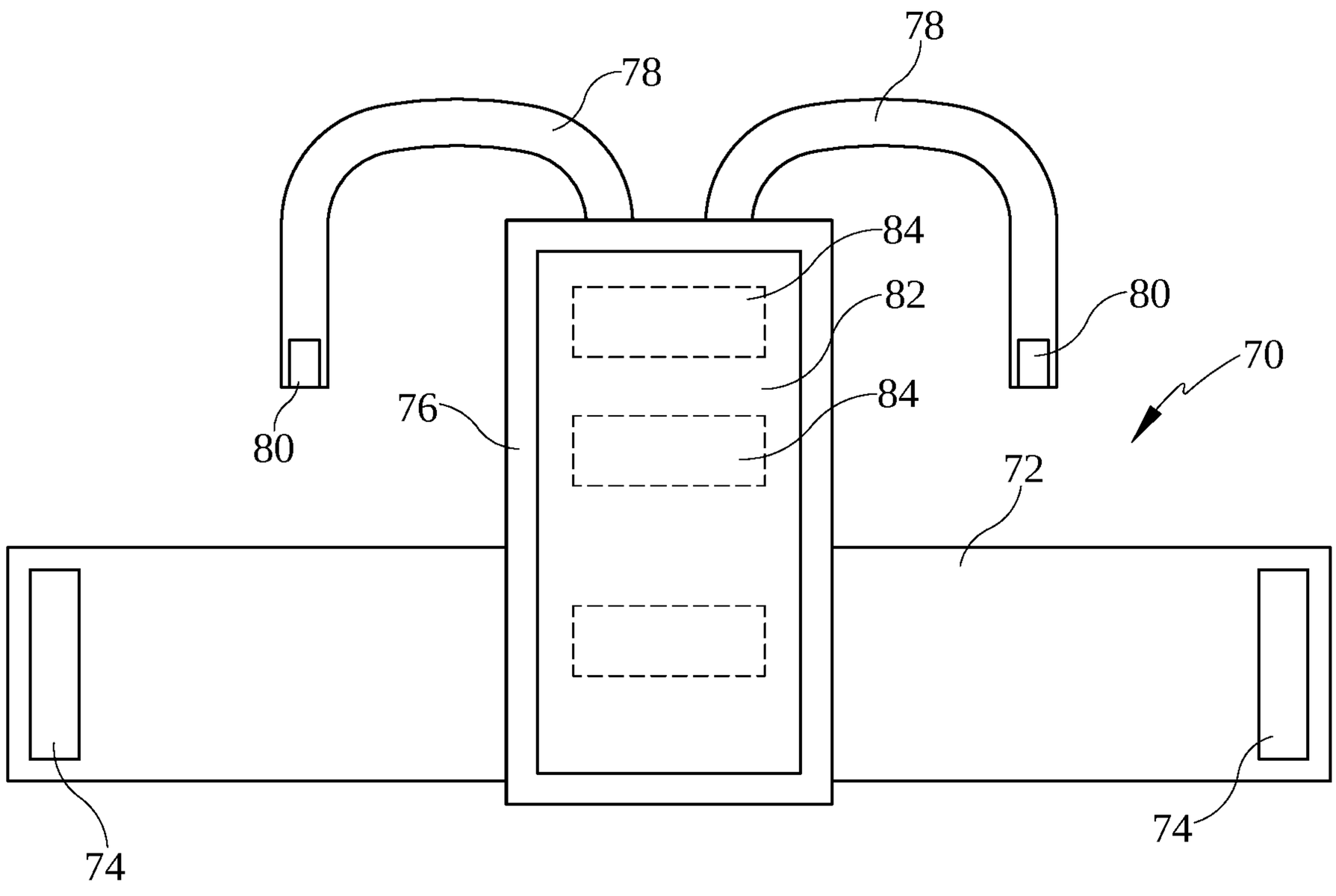


FIG. 4

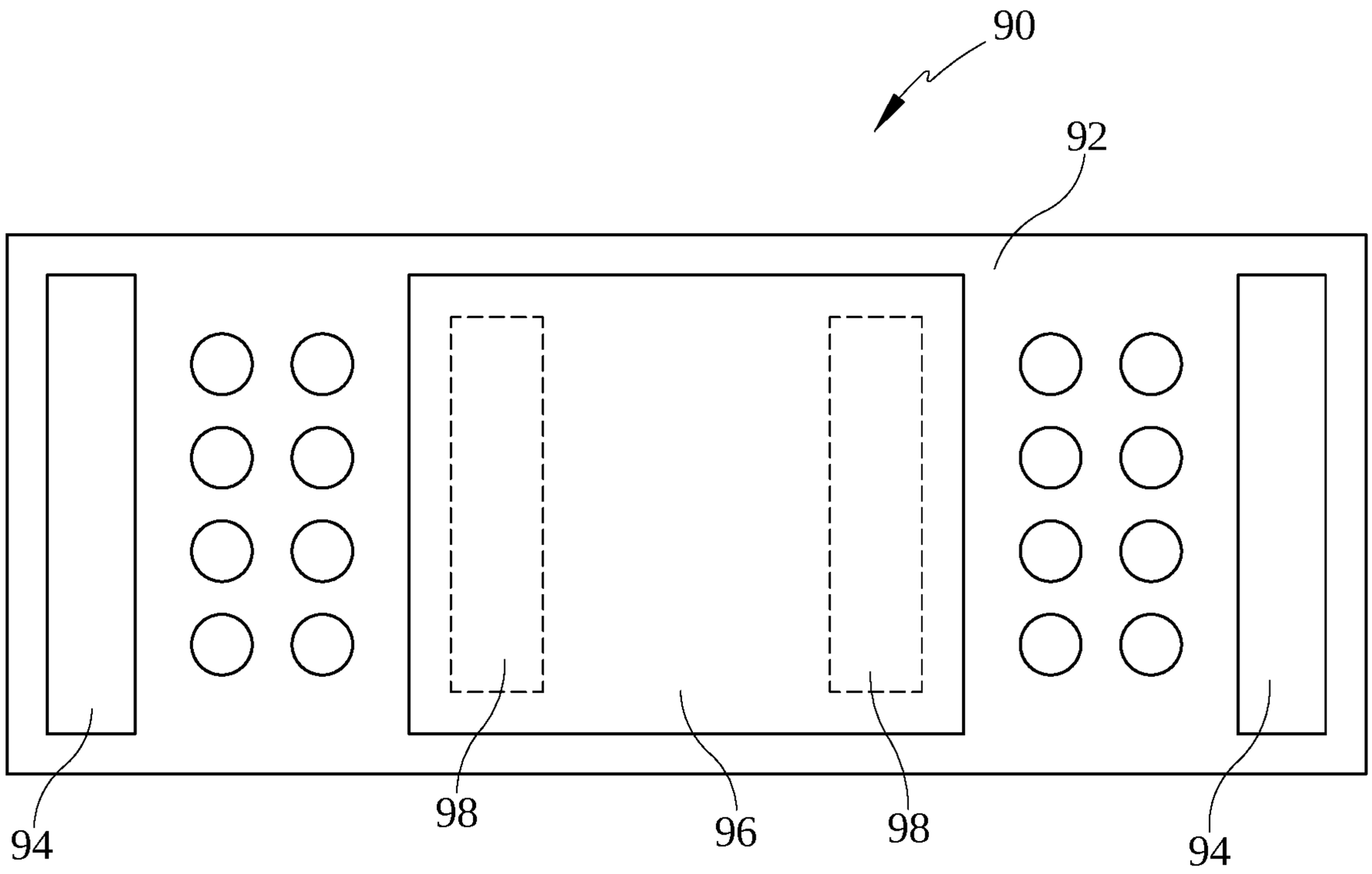

90
92
94
98
96
98
94

FIG. 5

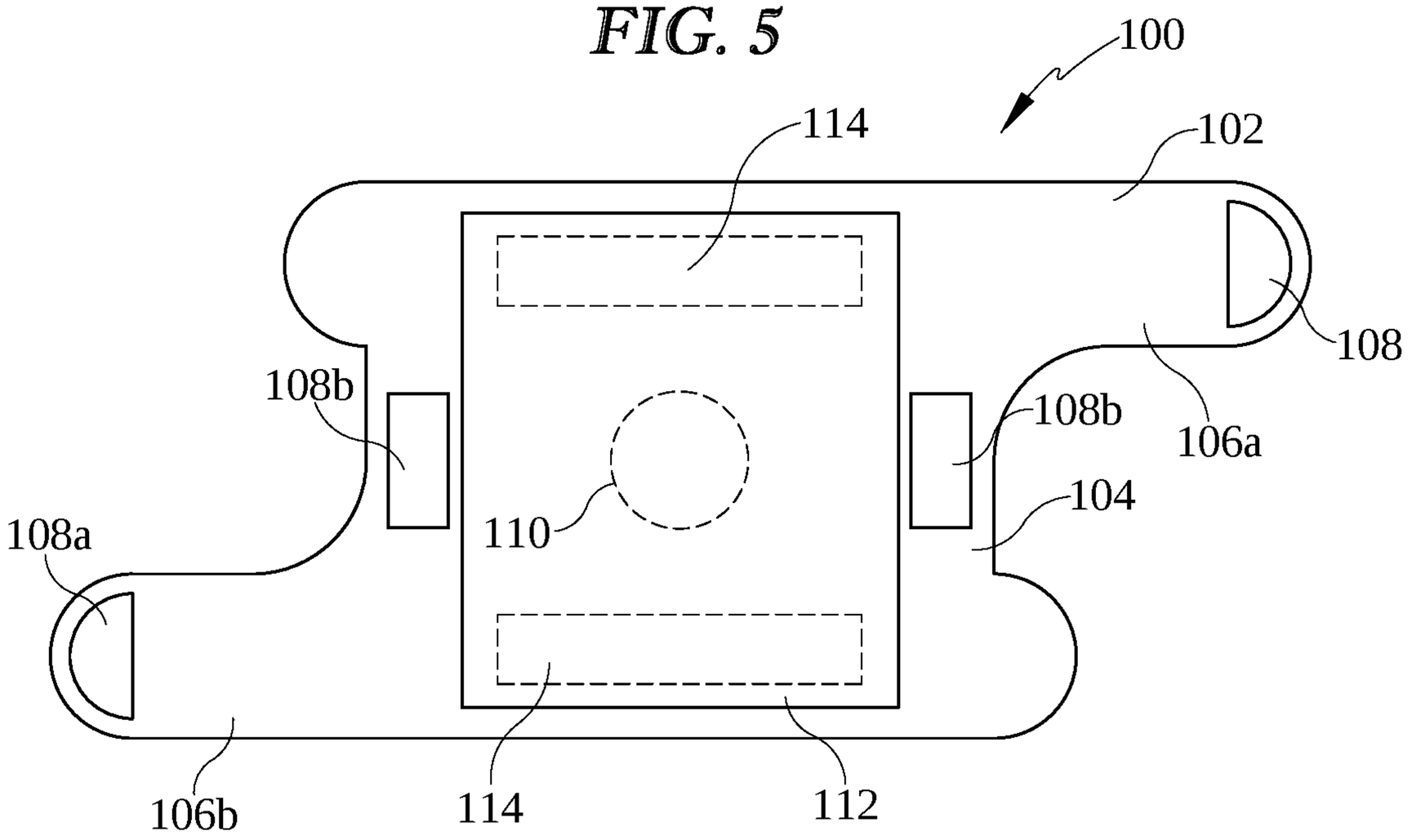

100
114
102
108
108b
108b
106a
104
110
108a
106b
114
112

FIG. 6

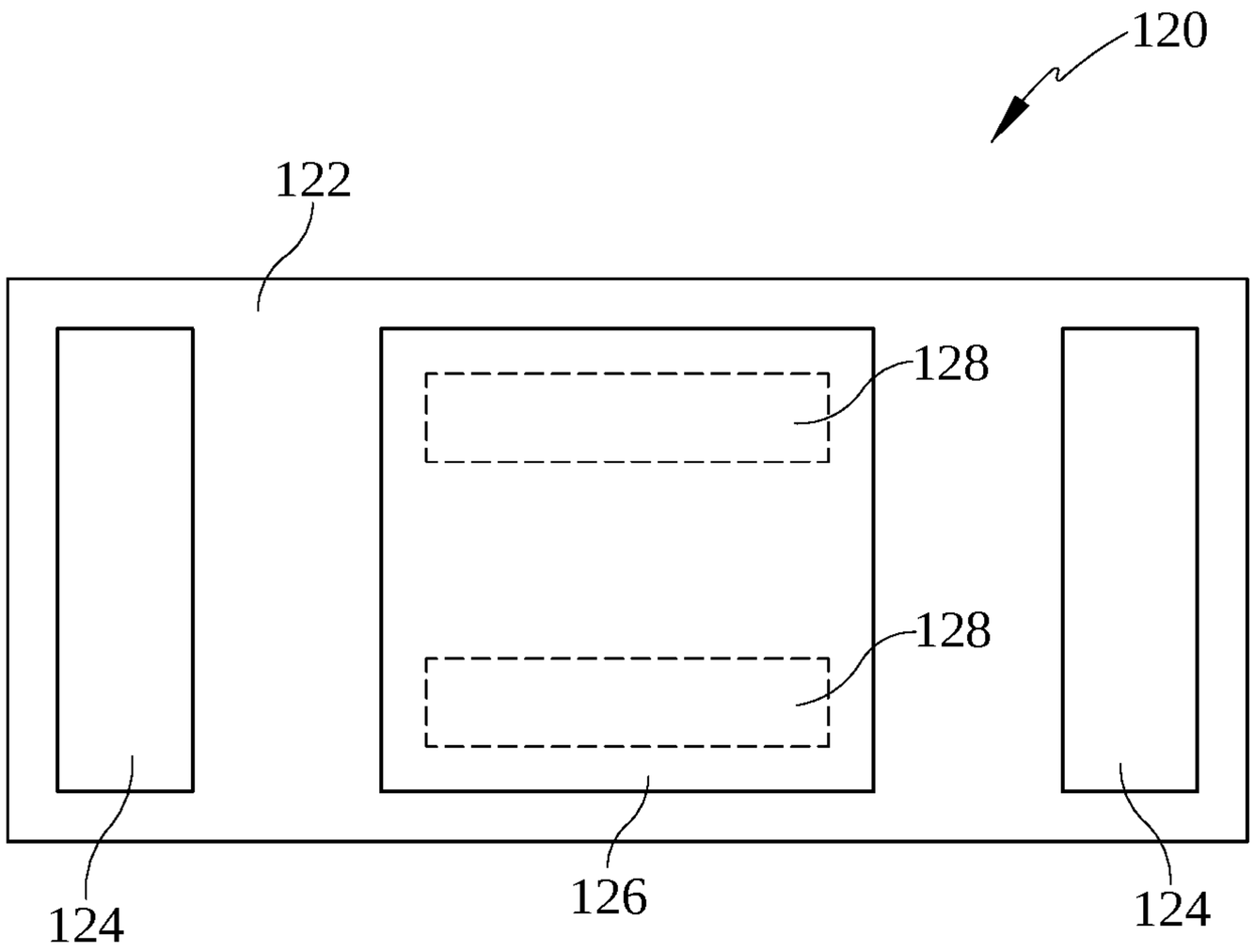

120
122
128
128
124
126
124

FIG. 7

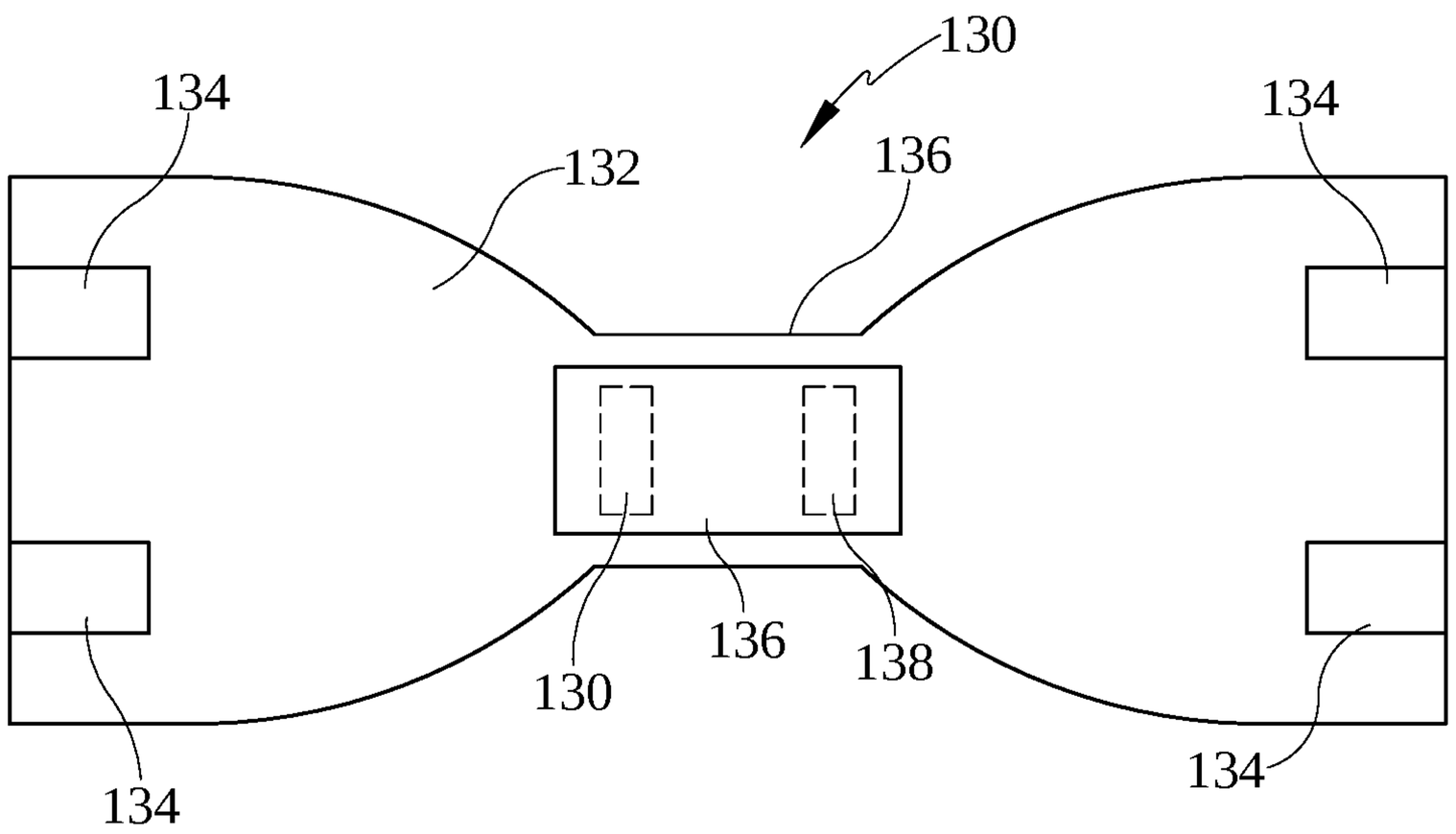

130
134
132
136
134
130
136
138
134
134

FIG. 8

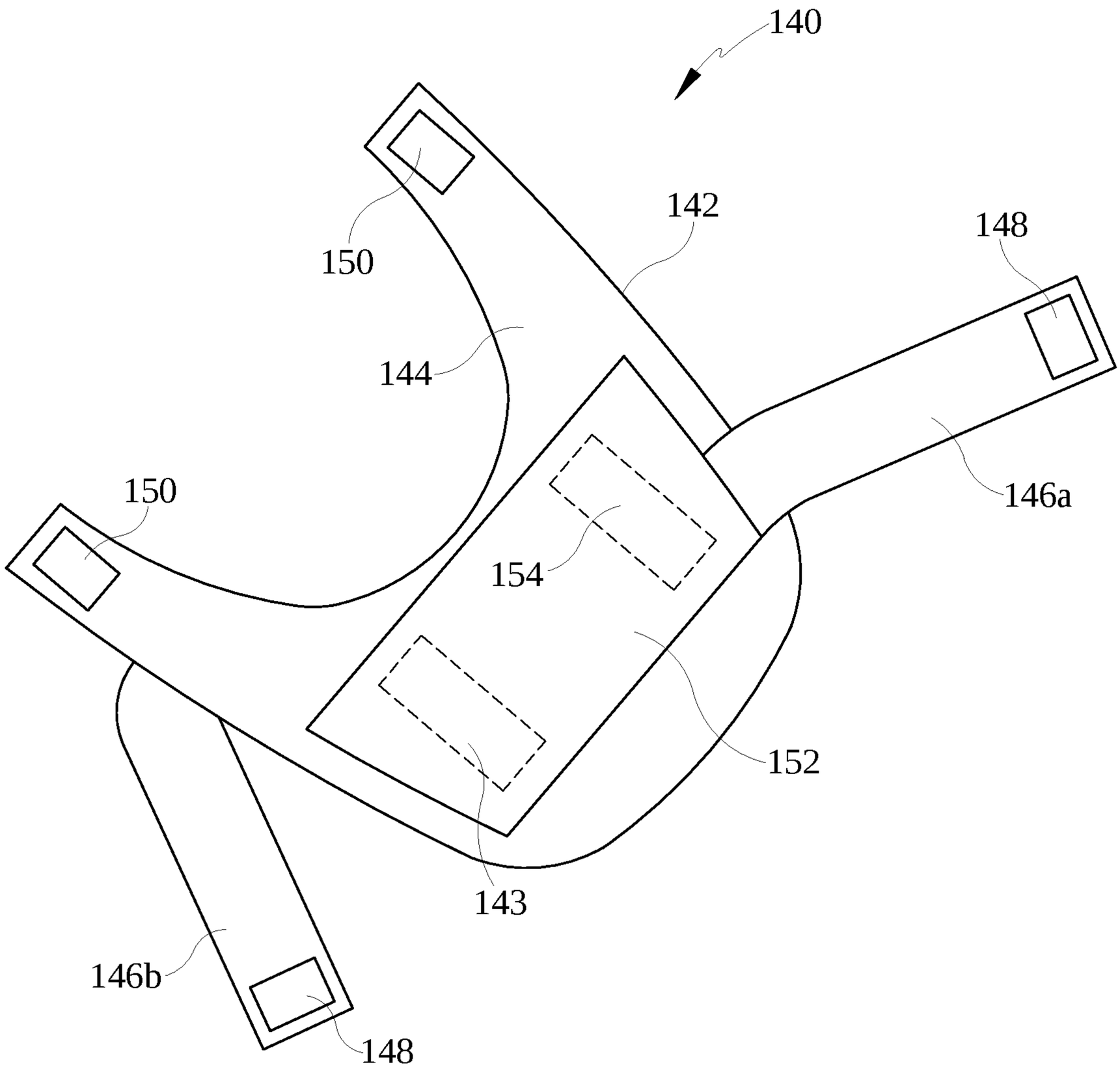


FIG. 9

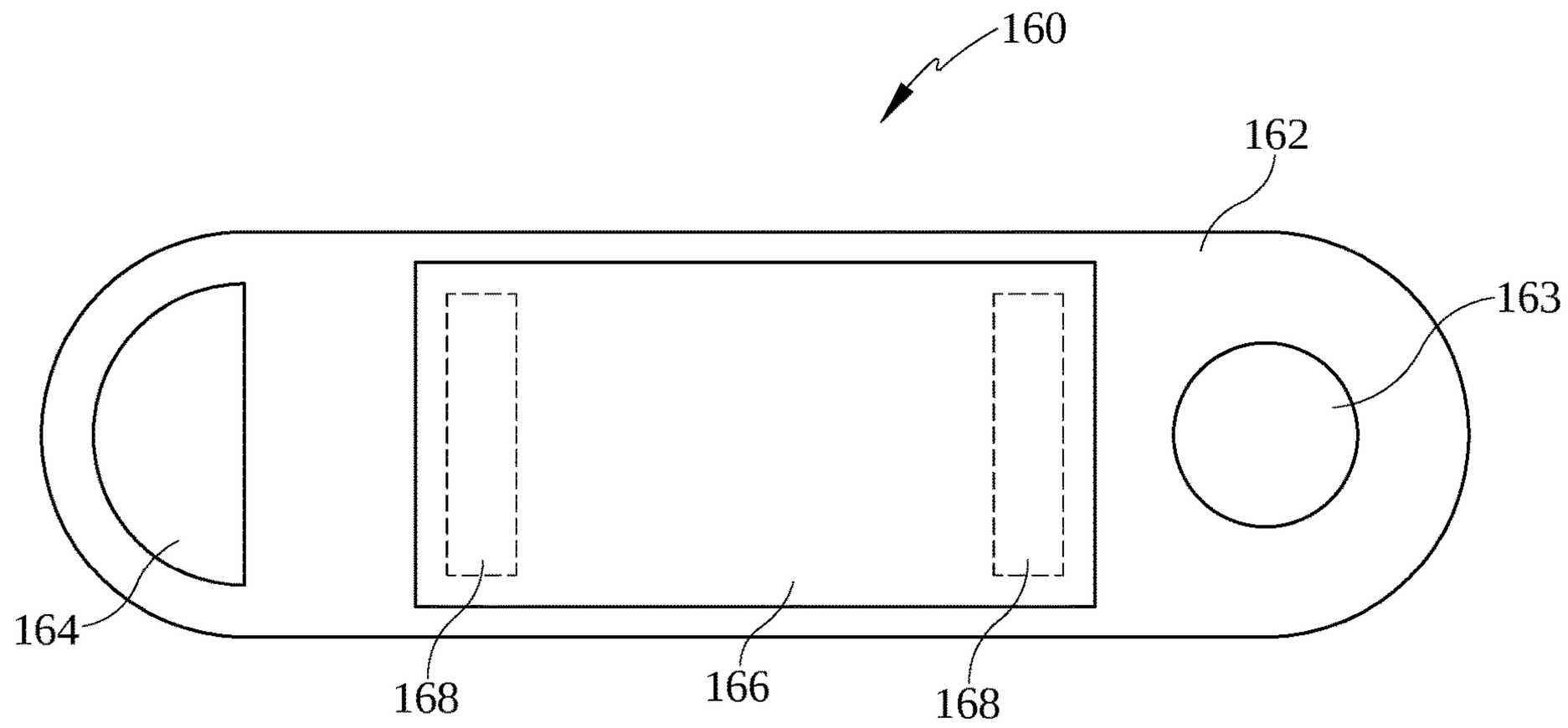


FIG. 10

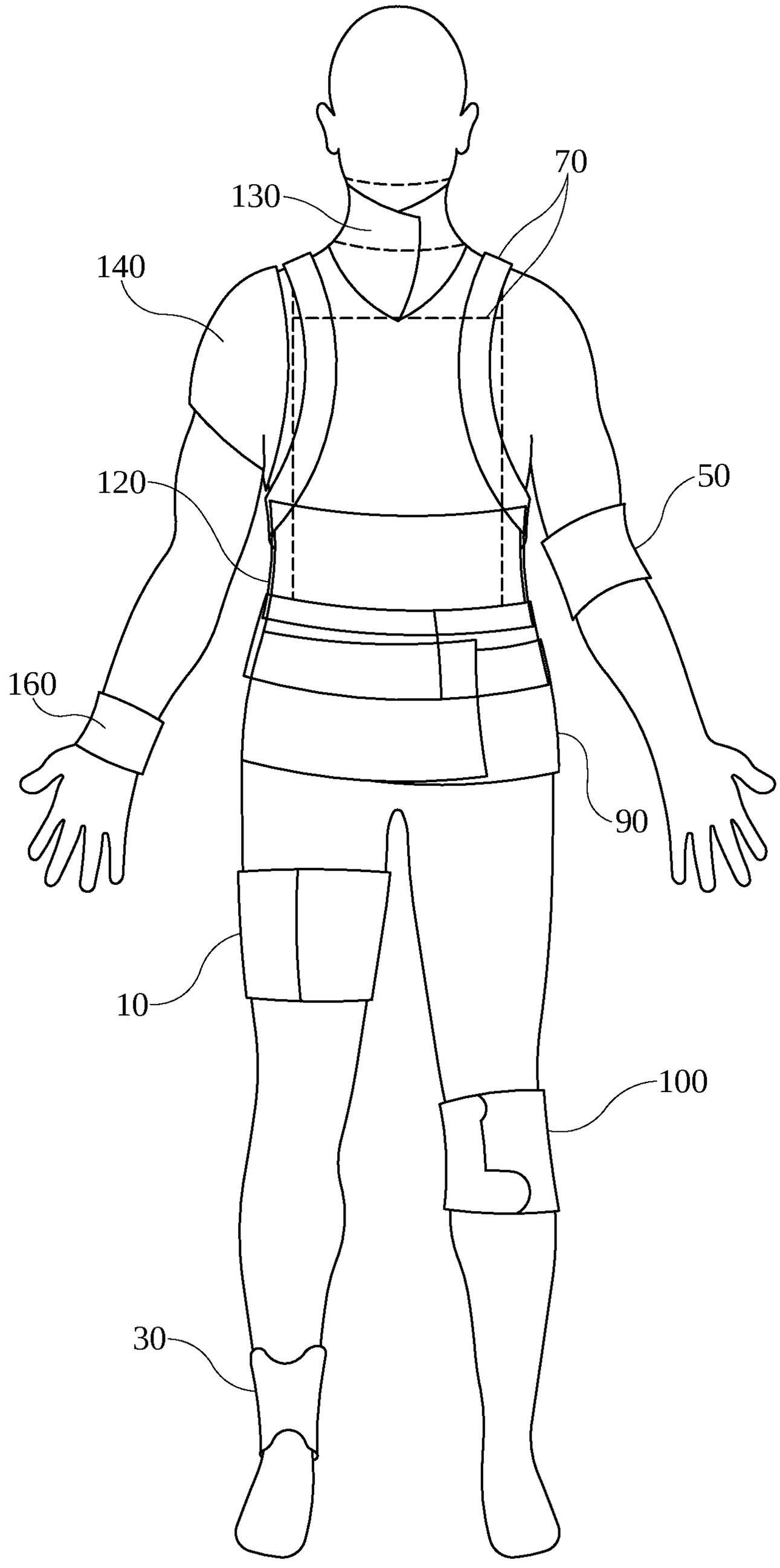


FIG. 11

BRACE WITH REMOVABLE AROMATHERAPY POUCH

FIELD OF THE DISCLOSED TECHNOLOGY

The disclosed technology relates generally to orthopedic braces, and more specifically to orthopedic braces with a removable pouch including aroma-therapeutic substances.

BACKGROUND OF THE DISCLOSED TECHNOLOGY

In many instances, such as following an injury or surgery, or to prevent injury, an orthopedic brace is used on a suitable body portion. Orthopedic braces are known in the art for many body parts, such as knees, back, neck, and elbow, and for many types of conditions.

U.S. Pat. No. 7,201,728 to Sterling describes an anatomically designed orthopedic knee brace used for treatment and rehabilitation following surgery to the knee, protection to a surgically repaired knee, and protection for an uninjured knee.

U.S. Pat. No. 6,772,439 to McMullen describes a retractable sports padding protecting the user's lower back and spine, hips, and buttocks region.

U.S. Pat. No. 4,190,054 to Brennan describes a removable bandage attachable to a body part for entirely covering the body part, the bandage being elastic so as to hold the flesh of the body part firmly in place following surgery, and may include an envelope having a heatable and/or coolable fluid therein so that the envelope may function as a hot or cold pack.

Due to the impact of temperature on the muscles, sore muscles and various pains are often treated with hot or cold packs, applied to the sore or painful area for a suitable duration. Often, such hot or cold packs include a temperature retaining substance, so as to ensure that the pack maintains a suitable temperature for the treatment duration, which is typically 20-30 minutes.

For example, Cherry Blossom Enterprises sell a Cherry-Pit-Pack microwave heating pad which is a heatable and coolable pad having cherry pits therein, which cherry pits maintain the elevated or reduced temperature (see, at the time of this wring and available in the file history for this matter at the U.S. Patent Office https://www.cherrypitpac-.com/).

Aromatherapy uses plant materials and aromatic plant oils, including essential oils, and other aroma compounds, for improving one's mood, cognitive, psychological, or physical wellbeing. For example, *eucalyptus* leaves and *eucalyptus* essential oil are known for many health benefits, such as being anti-inflammatory, antispasmodic, decongestant, deodorant, antiseptic, and antibacterial.

However, the existing orthopedic braces do not combine the benefits of a brace with those of a heat/cool pack and/or of aromatherapy.

SUMMARY OF THE DISCLOSED TECHNOLOGY

The disclosed technology relates generally to orthopedic braces, and more specifically to orthopedic braces with a removable pouch including aroma-therapeutic substances.

In accordance with some aspects of an embodiment of the teachings herein, there is provided a brace for treating a portion of a human body, the brace including:

a brace body including at least one fastener adapted for fastening the brace about the portion of the human body; and

an aromatherapy heat or cool treatment pack removably attached to the brace body, the aromatherapy heat or cool treatment pack including at least one temperature maintaining component and at least one aromatherapeutic component,

wherein the aromatherapy heat or cool treatment pack is adapted to maintain a temperature different than an ambient temperature for a predetermined treatment duration.

In some embodiments, the at least one temperature maintaining component includes cherry pits.

In some embodiments, the at least one aromatherapeutic component includes at least one of *eucalyptus* leaves and *eucalyptus* oil.

In some embodiments, during the treatment duration, a difference between a temperature of the aromatherapy heat or cool treatment pack and a temperature of the brace body is at least 10 degrees Celsius.

In some embodiments, during the treatment duration, a difference between a temperature of the aromatherapy heat or cool treatment pack and an ambient temperature surrounding the brace body is at least 10 degrees Celsius.

In some embodiments, the brace further includes heat pack fasteners mounted onto the brace body and adapted for removable attachment of the aromatherapy heat-treatment pack to the brace body.

In some embodiments, the brace is adapted for treatment of an ankle, and wherein the brace body includes:

a main body portion;

a pair of leg surrounding extensions extending outwardly from either side of the main body portion at a first half thereof, the leg surrounding extensions including a first set of fasteners at ends thereof;

a pair of foot surrounding extensions extending outwardly from either side of the main body portion at a second half thereof, the foot surrounding extensions including a second set of fasteners at ends thereof; and

a heel receiving opening disposed in the main body portion,

wherein, when the brace is worn by a user, a heel of the user is received in the heel receiving opening, the first set of fasteners are fastened such that the leg surrounding extensions surround the user's leg above the heel, and the second the of fasteners are fastened such that the foot surrounding extensions surround the user's foot.

In some embodiments, the aromatherapy heat-treatment pack has an outline corresponding to that of the brace body, and includes a second heel receiving opening adapted to be aligned with the heel receiving opening.

In some embodiments, the brace is adapted for treatment of an elbow, and wherein the brace body includes:

a main body portion;

a first extension extending outwardly from one side of the main body portion at a first half thereof, the first extension including a first fastener at an end thereof; and

a second extension extending outwardly from another side of the main body portion at a second half thereof, the second extension including a second fastener at an end thereof,

wherein, when the brace is worn by a user, an elbow of the user is disposed in the main body portion, the first fastener is fastened to the main body portion such that the first extension surrounds the user's arm above the elbow, and the second fastener is fastened to the main body portion such that the second extension surrounds the user's arm below the elbow.

In some embodiments, the brace is adapted for treatment of a knee, and wherein the brace body includes:

a main body portion including a first pair of fasteners on opposite sides of the main body portion at a middle section thereof;

a first extension extending outwardly from one of the opposite sides of the main body portion at an upper section thereof, the first extension including a second fastener at an end thereof;

a second extension extending outwardly from another of the opposite sides of the main body portion at a lower section thereof, the second extension including a third fastener at an end thereof; and

a kneecap receiving opening at a center of the main body portion,

wherein, when the brace is worn by a user, a kneecap of the user is disposed in the kneecap receiving opening, the opposite sides of the main body portion are fastened to each other using the first pair of fasteners, the second fastener is fastened to the main body portion such that the first extension surrounds the user's leg above the knee, and the third fastener is fastened to the main body portion such that the second extension surrounds the user's arm below the knee.

In some embodiments, the brace is adapted for spinal treatment, and wherein the brace body includes:

an elongate torso strap including torso strap fasteners at either end thereof; and

a spinal strap, one end thereof extending away from the torso strap and the other end thereof including a pair of shoulder straps terminating in shoulder strap fasteners,

wherein, when the brace is worn by a user, the torso strap is fastened onto the user's torso using the torso strap fasteners, and the spinal strap extends along a spine of the user such that the shoulder straps extend over shoulders of the user and are fastened to the torso strap, at a side thereof opposite the spinal strap, by the shoulder strap fasteners.

In some embodiments, the spinal strap is removably attached to the torso strap.

In accordance with some aspects of another embodiment of the teachings herein, there is provided a method of providing treatment and support to a body portion of a user using the brace described above, the method including the following steps, in order:

changing a temperature of the aromatherapy heat-treatment pack by at least 10 degrees Celsius;

attaching the aromatherapy heat-treatment pack to the brace body; and

placing the brace body on the body portion of the user such that the aromatherapy heat-treatment pack faces or engages skin of the body portion of the user.

In some embodiments, the method further includes maintaining the brace on the body portion of the user for the predetermined treatment duration.

Any device or step to a method described in this disclosure can comprise or consist of that which it is a part of, or the parts which make up the device or step. The term "and/or" is inclusive of the items which it joins linguistically and each item by itself.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. **1**A and **1**B are schematic illustrations of an embodiment of an all-purpose aromatherapy-heat-pack brace in accordance with the teachings herein, in aromatherapy-heat-pack attached and detached modes, respectively.

FIG. **2** is a schematic illustration of an embodiment of an ankle aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **3** is a schematic illustration of an embodiment of an elbow aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **4** is a schematic illustration of an embodiment of a full-back aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **5** is a schematic illustration of an embodiment of a hip aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **6** is a schematic illustration of an embodiment of a knee aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **7** is a schematic illustration of an embodiment of a lower-back aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **8** is a schematic illustration of an embodiment of a neck aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **9** is a schematic illustration of an embodiment of a shoulder aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **10** is a schematic illustration of an embodiment of a wrist aromatherapy-heat-pack band in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

FIG. **11** is a schematic illustration of places where the braces of FIGS. **1**A to **10** are placed on the body, in embodiments of the disclosed technology.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE DISCLOSED TECHNOLOGY

The disclosed technology relates generally to orthopedic braces, and more specifically to orthopedic braces with a removable pouch including aroma-therapeutic substances.

Reference is now made to FIGS. **1**A and **1**B, which are schematic illustrations of an embodiment of an all-purpose aromatherapy-heat-pack brace in accordance with the teachings herein, in aromatherapy-heat-pack attached and detached modes, respectively.

As seen, an all-purpose aromatherapy-heat-pack brace **10** is a generally elongate brace body **12** formed of an elastic material such as neoprene or a rigid plastic in other embodiments. At either end thereof, brace body **12** includes fasteners **14** for fastening the brace onto the body. In some embodiments, the fasteners may be corresponding Velcro® portions, corresponding halves of snaps, buttons and corresponding button loops, hooks and corresponding eyes, or any other suitable type of fasteners.

An aromatherapy heat/cold pack **16** is mounted onto an interior surface of brace body **12**, for example by means of fasteners **18***a* attached to brace body **12** and corresponding fasteners **18***b* attached to pack **16**, both of which are clearly seen in FIG. **1**B. Typically, as seen in FIG. **1**B, fasteners **18***a* and **18***b* include corresponding Velcro® strips. However, any other suitable kind of fasteners, such as snaps, hook and

eye fasteners, buttons and button-holes, and the like, are considered within the scope of the disclosed technology.

As seen in the schematic illustration of heat pack **16** in FIG. **1**B, heat pack **16** includes cherry pits **20** adapted to maintain a temperature of the heat-pack for a suitable duration, such as 30 minutes, as well as *eucalyptus* leaves **22** and/or *eucalyptus* oil adapted to provide aromatherapy treatment to the muscles on which the brace is applied, as known in the art of aromatherapy. The cherry pits or *eucalyptus* leaves can first be placed in an enclosed bag or sack, such as one made out of cotton.

In use, the aromatherapy heat/cold pack **16** is removed from brace body **12** and is subjected to heating or cooling, as required, until the temperature of the heat pack **16** changes by at least 10 degrees Celsius from room temperature or from its initial temperature. The heated/cooled pack **16** is then attached to brace body **12** using fasteners **18***a* and **18***b*, as shown in FIG. **1**A, and is fastened to an appropriate portion of the user's body, with pack **16** facing the skin surface of the user's body, using fasteners **14**. For example, FIG. **11** shows the all-purpose aromatherapy-heat-pack brace **10** of FIGS. **1**A and **1**B applied to the shin of a user, so as to apply heat therapy and aromatherapy to the Gastrocnemius muscle of the user. The brace **10** including heat pack **16** is maintained on the user's body for a predetermined treatment duration, which is typically at least 5 minutes, at least 10 minutes, at least 20 minutes, or at least 30 minutes.

Reference is now made to FIG. **2**, which is a schematic illustration of an embodiment of an ankle aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, ankle brace **30** includes an ankle brace body **32**, including main portion **34** from which extend two foot surrounding extensions **36***a* and **36***b*, and two leg surrounding extensions **38***a* and **38***b*. Foot surrounding extensions **36***a* and **36***b* are adapted to be connected to one another using fasteners **36***c*, and leg surrounding extensions **38***a* and **38***b* are adapted to be connected to one another using fasteners **38***c*. In the center of main portion **34** there is a heel receiving opening **40**, adapted to receive the user's heel, when the ankle brace **30** is in use by a user, as seen in FIG. **11**. The ankle brace is suitably sized to receive the user's ankle and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **42** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of ankle brace body **32** by fasteners **44**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **2**, heat pack **42** may have a contour substantially similar to that of main brace body **32**, and a includes a heel receiving opening **44** corresponding in location to heel receiving opening **40** of brace body **32**. However, in some embodiments, heat pack **42** may cover only a portion of brace body **30**, such as covering only main portion **34**, or only one half of the brace body such as extensions **36***a* and **36***b* and the part of main portion **34** connecting those two extension.

Use of ankle brace **30** is substantially similar to that of all-purpose brace **10**. Heat pack **42** is removed from the main brace body **32** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to main brace body **32** using the fasteners **44**. The heel of the user's foot is then placed in the heel receiving openings **40** and **44** such that heat pack **42** faces or engages the user's skin, following which foot surrounding extensions **36***a* and **36***b* are fastened around the user's foot using fasteners **36***c*, and leg surrounding extensions **38***a* and **38***b* are fastened around the user's leg using fasteners **38***c*. The brace **30** is maintained on the user's ankle for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **3**, which is a schematic illustration of an embodiment of an elbow aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, elbow brace **50** includes an elbow brace body **52**, including main portion **54** from which extend two extensions **56***a* and **56***b*. Extensions **56***a* and **56***b* are adapted to be connected to main portion **54** on opposite sides thereof, using fasteners **58**. Elbow brace **50** is adapted to be worn on a user's elbow, as seen in FIG. **11**. The elbow brace is suitably sized to receive the user's elbow and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **62** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of ankle brace body **52** by fasteners **64**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **3**, heat pack **62** covers only main portion **54** of brace body **52**, though in some embodiments heat pack **62** may correspond in shape to the entirety of brace body **52**.

Use of elbow brace **50** is substantially similar to that of all-purpose brace **10**. Heat pack **62** is removed from the main brace body **52** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to main brace body **52** using the fasteners **64**. The user's elbow is then placed in the center of body portion **54** such that heat pack **62** faces or engages the user's skin, following which extensions **56***a* and **56***b* are fastened around the user's arm on either side of the elbow using fasteners **58**. The brace **50** is maintained on the user's elbow for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **4**, which is a schematic illustration of an embodiment of a full-back aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, full-back brace **70** includes an elongate torso strap **72** adapted to be worn about the torso of a user and to be fastened thereabout with fasteners **74**. Extending outwardly from torso strap **72** is a spinal strap **76**, terminating in two shoulder strap **78**, which may be elastic and are adapted to attach to torso strap **72** on an opposite side thereof using suitable fasteners **80**. As such, when a user wears brace **70**, as shown in FIG. **11**, torso strap **72** surrounds the user's torso such that spinal strap **76** extends along the user's spine, and shoulder straps **78** extend over the user's shoulders and connect back to the torso strap **72** at the front of the user's body, in a manner similar to suspenders. The brace is suitably sized to fit around the user's torso and back and to provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

In some embodiments, torso strap **72** and spinal strap **76** may be formed of two separate pieces, permanently connected to one another, for example by sewing the two straps together, or removably or adjustably connected to one another, such as by fasteners, or by threading torso strap **72** through a suitable slot in spinal strap **76**. In some such embodiments the torso strap **72** and spinal strap **76** may be formed of distinct materials, such as torso strap **72** being elastic to accommodate different torso girths, whereas spinal

strap **76** may be more rigid to provide some structural support to the spine. In other embodiments, torso strap **72** and spinal strap **76** may be integrally formed, for example from a single piece of fabric, and/or may be formed of the same material.

An aromatherapy heat/cold pack **82** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of spinal strap **76** by fasteners **84**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **4**, heat pack **82** covers at least the majority of the spinal strap **76**. However, in some embodiments, heat pack **82**, or one or more second heat packs (not shown) may also be disposed along an inner surface of torso strap **72**.

Use of full-back brace **70** is substantially similar to that of all-purpose brace **10**. Heat pack **82** is removed from the spinal strap **76** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to spinal strap **76** using the fasteners **84**. The user then fastens torso strap **72** about their torso using fasteners **74**, such that spinal strap **76** is aligned with the user's spine. The user then places spinal strap **76** along his/her spine such that heat pack **82** faces or engages the users skin and shoulder straps **78** extend over the user's shoulders, and attaches shoulder straps **78** to torso strap **72** at the front side of the user's body using fasteners **80**. The brace **70** is maintained on the user's torso and spine for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **5**, which is a schematic illustration of an embodiment of a hip aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, hip brace **90** includes an elongate hip brace body **92** terminating on either side thereof in fasteners **94**. As seen in FIG. **11**, when hip brace **90** is in use by the user, brace body **92** is disposed about the user's hips and fastened thereabout by fasteners **94**. The hip brace is suitably sized to receive the user's hips and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **96** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of hip brace body **92** by fasteners **98**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **5**, heat pack **96** is sized to cover only a portion of the length of hip brace body **92**, though it is appreciated that it may also be sized to cover the entire hip brace body.

Use of hip brace **90** is substantially similar to that of all-purpose brace **10**. Heat pack **96** is removed from the main brace body **92** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to main brace body **92** using the fasteners **98**. The brace body is then fastened around the user's hips with fasteners **94**, such that heat pack **96** faces or engages the user's skin. The brace **90** is maintained on the user's hips for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **6**, which is a schematic illustration of an embodiment of a knee aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, knee brace **100** includes a knee brace body **102**, including main portion **104** from which extend two extensions **106***a* and **106***b*. Extensions **106***a* and **106***b* are adapted to be connected to main portion **104** on opposite sides thereof, using fasteners **108***a*. Additional fasteners **108***b*, disposed generally at the center of main portion **104**, are adapted to connect opposite attach opposite sides of main portion **104** to each other. In some embodiments, main portion **104** includes a central opening **110**, adapted to receive the knee cap and to allow more flexible motion of the user's knee while wearing brace **100**. Knee brace **100** is adapted to be worn on a user's knee, as seen in FIG. **11**. The knee brace is suitably sized to receive the user's knee and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **112** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of knee brace body **102** by fasteners **114**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **6**, heat pack **112** covers only main portion **104** of brace body **102**, though in some embodiments heat pack **112** may correspond in shape to the entirety of brace body **102**.

Use of knee brace **100** is substantially similar to that of all-purpose brace **10**. Heat pack **112** is removed from the main brace body **102** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to main brace body **102** using the fasteners **114**. The user's knee is then placed in the center of body portion **104** such that heat pack **112** faces or engages the user's skin, following which extensions **106***a* and **106***b* are fastened around the user's leg on either side of the knee using fasteners **108***a*, and sides of body portion **104** are fastened at the back of the user's knee using fasteners **108***b*. The brace **100** is maintained on the user's knee for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **7**, which is a schematic illustration of an embodiment of a lower-back aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, lower-back brace **120** includes an elongate lower-back brace body **122** terminating on either side thereof in fasteners **124**. As seen in FIG. **11**, when lower-back brace **120** is in use by the user, brace body **122** is disposed about the user's lower back and is fastened thereabout by fasteners **124**. The lower-back brace is suitably sized to receive the user's lower back and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **126** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of lower-back brace body **122** by fasteners **128**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **7**, heat pack **126** is sized to cover only a portion of the length of lower-back brace body **122**, though it is appreciated that it may also be sized to cover the entire lower-back brace body.

Use of lower-back brace **120** is substantially similar to that of all-purpose brace **10**. Heat pack **126** is removed from the brace body **122** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to brace body **122** using the fasteners **128**. The brace body is then fastened around the user's lower back with fasteners **124**, such that heat pack **126** faces or engages the user's skin. The brace **120** is

maintained on the user's lower-back for a suitable treatment period, substantially as described hereinabove.

Reference is now made to FIG. **8**, which is a schematic illustration of an embodiment of a neck aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, neck brace **130** includes an elongate neck brace body **132** terminating on either side thereof in fasteners **134**, and having a narrowed portion **135** at the center thereof, such that when fasteners **134** are open, the brace body **132** has a shape similar to that of a bow. As seen in FIG. **11**, when neck brace **130** is in use by the user, brace body **132** is disposed about the user's neck and is fastened thereabout by fasteners **134**. The neck brace is suitably sized to be disposed about the user's neck and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **136** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of neck brace body **132** by fasteners **138**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **8**, in some embodiments heat pack **136** is sized to cover only or substantially only narrowed portion **135** of neck brace body **132**, though it is appreciated that it may also be sized to cover the entire neck brace body.

Use of neck brace **130** is substantially similar to that of all-purpose brace **10**. Heat pack **136** is removed from the brace body **132** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to brace body **132** using the fasteners **138**. The brace body is then fastened around the user's neck with fasteners **134**, such that heat pack **136** faces or engages the user's skin. The brace **130** is maintained on the user's neck for a suitable treatment period, substantially as described hereinabove.

FIG. **9** is a schematic illustration of an embodiment of a shoulder aromatherapy-heat-pack brace in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, shoulder brace **140** includes a shoulder brace body **142**, including a generally arcuate or U-shaped main portion **144**. Two strapping extensions **146***a* and **146***b* extend from main portion **144**, and terminate in fasteners **148**. Extensions **146***a* and **146***b* are adapted to be connected to each other using fasteners **148**. Additional fasteners **150**, disposed at the ends of the U-shaped arms of main portion **144**, are adapted to connect opposite sides of main portion **144** to each other. Shoulder brace **140** is adapted to be worn on a user's knee, as seen in FIG. **11**. The shoulder brace is suitably sized to receive the user's shoulder and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **152** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of shoulder brace body **142** by fasteners **154**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **9**, heat pack **152** covers only the center of the U-shape of main portion **144** of brace body **142**, though in some embodiments heat pack **152** may correspond in shape to the entirety of the main portion **144**.

Use of shoulder brace **140** is substantially similar to that of all-purpose brace **10**. Heat pack **152** is removed from the main brace body **142** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to main brace body **142** using the fasteners **154**. The brace is then placed on the user's shoulder such that the central portion of U-shaped main portion **144**, holding heat pack **152**, is placed above the user's shoulder, the arms of U-shaped main portion **144** are connected to each other by fasteners **150** at the user's underarm, and extensions **146***a* and **146***b* are connected to each other using fasteners **148** around the user's arm. The main portion **144** is placed such that heat pack **152** faces or engages the user's skin. The brace **140** is maintained on the user's shoulder for a suitable treatment period, substantially as described hereinabove.

FIG. **10** is a schematic illustration of an embodiment of a wrist aromatherapy-heat-pack band in accordance with the teachings herein, in an aromatherapy-heat-pack attached mode.

As seen, wrist band **160** includes an elongate wrist band body **162** including a thumb opening **163** at one end thereof and terminating, at an opposite end thereof, in a fastener **164**. As seen in FIG. **11**, when wrist band **160** is in use by the user, the user's thumb extends through opening **163** and the wrist band body **162** is disposed about the user's wrist and is fastened thereabout by fastener **164**. The wrist band is suitably sized to be disposed about the user's wrist and provide support thereto, and the fasteners may be constructed so as to enable adjustable sizing.

An aromatherapy heat/cold pack **166** including cherry pits as well as *eucalyptus* leaves and/or *eucalyptus* oil, similar to heat pack **16** of FIGS. **1**A and **1**B, is removably attached to the inner surface of wrist band body **162**, substantially alongside opening **163**, by fasteners **168**, substantially as described hereinabove with reference to FIGS. **1**A and **1**B. As seen in FIG. **10**, in some embodiments heat pack **166** is sized to cover substantially all of wrist band body **162** other than thumb opening **163**.

Use of wrist band **160** is substantially similar to that of all-purpose brace **10**. Heat pack **166** is removed from the wrist band body **162** for heating or cooling thereof as described hereinabove with reference to FIGS. **1**A and **1**B, and is subsequently reconnected to wrist band body **162** using the fasteners **168**. The user then puts his/her thumb through opening **163**, and fastens the wrist band body **162** around the user's wrist with fasteners **164**, such that heat pack **166** faces or engages the user's skin. The wrist band **160** is maintained on the user's neck for a suitable treatment period, substantially as described hereinabove.

While the disclosed technology has been taught with specific reference to the above embodiments, a person having ordinary skill in the art will recognize that changes can be made in form and detail without departing from the spirit and the scope of the disclosed technology. The described embodiments are to be considered in all respects only as illustrative and not restrictive. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope. Combinations of any of the methods, systems, and devices described herein-above are also contemplated and within the scope of the disclosed technology.

I claim:

1. A brace for treating a portion of a human body, the brace comprising:

a brace body having a first side facing the skin surface of a user's body when in use, the brace body including a heat pack fastener disposed on the first side and a brace fastener disposed on an end of the brace body, the brace fastener configured to fasten to an end of the brace

body, thereby enabling securement of the brace about a portion of a human body; and

an aromatherapy heat or cool treatment pack having a first face and a second face opposite the first face, and including a plurality of aromatherapeutic components, a plurality of temperature maintaining components, and a corresponding heat pack fastener disposed on the first face and corresponding to the heat pack fastener disposed on the first side of the brace body such that the aromatherapy heat or cool treatment pack is removably attachable to the first side of the brace body; wherein when the aromatherapy heat or cool treatment pack is attached to the heat pack fastener, the entire first face of the aromatherapy heat or cool treatment pack is within a surface area of the first side of the brace body; wherein the plurality of temperature maintaining components comprise cherry pits; and wherein the plurality of aromatherapeutic components comprise at least one of eucalyptus leaves and eucalyptus oil; wherein the heat pack fastener of the brace body and the corresponding heat pack fasteners of the aromatherapy heat or cool treatment pack include a plurality of fastening strips disposed widthwise across a surface thereof, wherein the plurality of fastening strips of brace body and the aromatherapy heat or cool treatment pack are aligned enabling securement to each other; wherein the longitudinal axis of each of the plurality of fastening strips is perpendicular to the longitudinal axis of the brace body.

2. A method of providing treatment and support to a body portion of a user using the brace of claim **1**, the method comprising the following steps, in order:

changing a temperature of the aromatherapy heat or cool treatment pack by at least 10 degrees Celsius;

attaching the aromatherapy heat or cool treatment pack to the first side of the brace body; and

placing the brace body on a body portion of the user such that the aromatherapy heat or cool treatment pack engages the body portion of the user directly, such that it contacts the skin of the body portion.

3. The method of claim **2**, further comprising maintaining the brace on the body portion of the user for a predetermined treatment duration.

4. The brace of claim **1**, wherein the temperature maintaining component maintains a temperature of the aromatherapy heat or cool pack for approximately 30 minutes.

5. The brace of claim **1**, wherein, when the aromatherapy heat or cool treatment pack is detached from the heat pack fastener, the heat pack fastener is adapted to engage the portion of the human body directly.

* * * * *