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[US/US]; 45 Pardons Wood Lane, East Greenwich, Rhode Island 02818-1446 (US).

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(74) Agent: RICHARDSON, Julie, H.; MYERS BIGEL SIBLEY & SAJOVEC, P.A., P.O. Box 37428, Raleigh, North Carolina 27627 (US).

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(71) Applicant (for all designated States except US): EAST CAROLINA UNIVERSITY [US/US]; 2200 Charles Boulevard, Greenville Centre, Room 2400, Greenville, North Carolina 27858 (US).

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(72) Inventor; and

(75) Inventor/Applicant (for US only): HACK, Jason B.

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(54) Title: EMERGENCY SNAKE BITE TREATMENT DEVICES, MEDICAL KITS AND RELATED METHODS

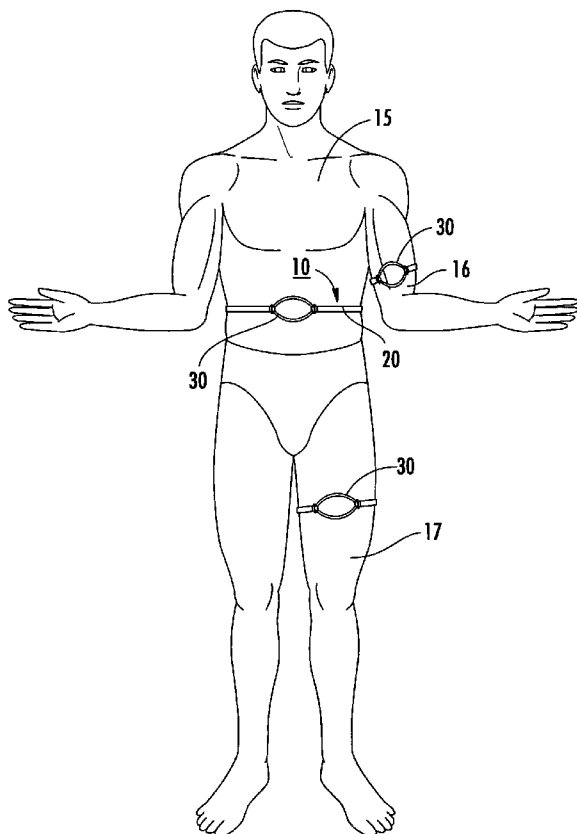


FIG. 1

(57) Abstract: The disclosure describes emergency or first aid snake bite treatment devices that include a belt or other securing member attached to a compression (bite isolation) member, the compression member having an outwardly projecting wall that is configured to surround the snake bite and compress the skin about the snake bite a distance inward to thereby isolate the venom from the bite to impede the venom from entering a victim's lymphatic system.



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## EMERGENCY SNAKE BITE TREATMENT DEVICES, MEDICAL KITS AND RELATED METHODS

### Related Application

This application claims the benefit of priority to U.S. Provisional Application  
Serial No. 61/018,553, filed January 2, 2008, the contents of which are hereby  
5 incorporated by reference as if recited in full herein.

### Field of the Invention

This invention relates to first aid venomous snake bite treatment devices.

### Background of the Invention

The conventional standard of care for snake bites to distal limbs includes limb  
immobilization, application of pressure bandages, and immediate medical care (where  
available). There is no known publication for research on treatments of snake bites to  
the torso, although suction-type devices are available. Unfortunately, the suction-type  
15 devices may not be able to retain sufficient suction around the wound while the victim  
is transported to a medical facility.

### Summary of Embodiments of the Invention

Embodiments of the invention are directed to easy-to-use, light-weight,  
portable devices that can impede lymphatic flow of the venom from the site of the bite  
20 to the systemic circulation to delay onset of toxicity while a patent is delivered to  
definitive care (*e.g.*, administration of an anti-venom).

Embodiments of the invention provide a belt attached to a compression (bite  
isolation) member, the compression member having an outwardly projecting wall that  
is configured to surround the snake bite and compress the skin about the snake bite a

distance inward to thereby isolate the venom from the bite to impede the venom from entering a victim's lymphatic system.

The compression member can have an open center that, in position, resides over the snake bite, with the wall configured to extend substantially orthogonally a distance into a victim's body to force the skin to compress thereunder a suitable distance.

Some embodiments are directed to snake bite treatment devices that include a belt or other securing member attached to a compression (bite isolation) member, the compression member having an outwardly projecting wall that is configured to surround the snake bite and compress the skin about the snake bite a distance inward to thereby isolate the venom from the bite to impede the venom from entering a victim's lymphatic system.

Still other embodiments are directed to first aid snake-bite treatment devices that include: (a) a localized compression member having a cavity surrounded by a wall, wherein, in position, the compression member resides on a skin surface of a victim such that the cavity resides over tissue proximate a snake bite and the wall surrounds and compresses localized tissue inward a distance away from and surrounding the snake bite; and (b) a belt having opposing end portions, wherein each end portion is configured to fixedly or releasably attach to laterally opposing end portions of the compression member.

Some embodiments are directed to (portable) snake bite treatment kits that include: (a) at least one belt or other securing member sized and configured to reside about a torso of a person; and (b) a compression member configured to attach to the at least one belt.

Still other embodiments are directed to methods of performing first aid treatment of a venomous snake bite. The methods include: (a) placing a localized compression member over a snake bite region on a surface of skin of a victim; (b) placing a belt around the victim; (c) tightening the belt and securing the compression member to the victim; and (d) compressing the skin of the victim surrounding the snake bite so that the compressed skin is forced inward a distance relative to the skin proximate the snake bite, thereby impeding snake bite venom from migration into a victim's circulatory system.

Other embodiments are directed to methods of performing first aid treatment of a venomous snake bite that include: (a) placing a localized compression member over a snake bite region on a surface of skin of a victim; (b) securing the compression member to the victim; and (c) compressing the skin of the victim surrounding the snake bite so that the compressed skin is forced inward a distance relative to the skin proximate the snake bite thereby impeding snake bite venom from migration into a victim's circulatory system.

Embodiments of the invention may be particularly suitable for torso or proximal extremity bites (but may also be used for treating bites in other areas as well).

Features described with respect to one embodiment can be used with respect to another embodiment.

The foregoing and other objects and aspects of the present invention are explained in detail in the specification set forth below.

#### Brief Description of the Drawings

**Figure 1** is a schematic illustration of a localized compression snake bite treatment device suitable for treating proximal extremity and torso snake bite locations according to embodiments of the present invention.

**Figure 2A** is a top schematic view of a localized compression member according to embodiments of the present invention.

**Figure 2B** is a front view of the device shown in **Figure 1**.

**Figure 2C** is a top view of a belt suitable for engaging the device shown in **Figures 2A** and **2B** according to embodiments of the present invention.

**Figure 3A** is a side schematic view of a compression member attached to a tensioning belt in a manner that exerts downward compression according to embodiments of the present invention.

**Figure 3B** is a side schematic view of another embodiment of the compression member and belt according to other embodiments of the present invention.

**Figures 4A** and **4B** are side schematic views of other configurations of the compression member and/or belt attachment features according to embodiments of the present invention.

**Figure 4C** is a top perspective view of an exemplary belt clasp for use with a belt or strap according to some embodiments of the present invention.

**Figure 5A** is a top exploded view of one embodiment of the compression member according to embodiments of the present invention.

5 **Figure 5B** is a top view of a different securing member configuration according to embodiments of the present invention.

**Figures 6A-6C** are schematic top views of other configurations of the compression member according to embodiments of the present invention.

10 **Figure 7** is a schematic illustration of an emergency/first aid snake bite treatment kit according to embodiments of the present invention.

**Figures 8-10** are digital photographs of a prototype of a snake bite treatment device attached to torsos of a pig.

15 **Figure 11** is a graph of the experimental results of time in minutes to cessation of breathing after administration of a fatal dose of snake venom illustrating the difference or additional time to death for those pigs having the device shown in **Figures 8-10** versus those with no treatment.

#### Description of Embodiments of the Invention

20 The present invention will now be described more fully hereinafter with reference to the accompanying figures, in which embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Like numbers refer to like elements throughout. In the figures, certain layers, components or features may be exaggerated for clarity, and broken lines illustrate optional features or operations unless specified otherwise. In addition, the sequence of operations (or

25 operations unless specified otherwise. In addition, the sequence of operations (or steps) is not limited to the order presented in the figures and/or claims unless specifically indicated otherwise. In the drawings, the thickness of lines, layers, features, components and/or regions may be exaggerated for clarity and broken lines illustrate optional features or operations, unless specified otherwise.

30 The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the

terms "comprises," "comprising," "includes," and/or "including" when used in this specification, specify the presence of stated features, regions, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, regions, steps, operations, elements, components, and/or groups thereof.

It will be understood that when a feature, such as a layer, region or substrate, is referred to as being "on" another feature or element, it can be directly on the other feature or element or intervening features and/or elements may also be present. In contrast, when an element is referred to as being "directly on" another feature or element, there are no intervening elements present. It will also be understood that, when a feature or element is referred to as being "connected", "attached" or "coupled" to another feature or element, it can be directly connected, attached or coupled to the other element or intervening elements may be present. In contrast, when a feature or element is referred to as being "directly connected", "directly attached" or "directly coupled" to another element, there are no intervening elements present. Although described or shown with respect to one embodiment, the features so described or shown can apply to other embodiments.

Unless otherwise defined, all terms (including technical and scientific terms) used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and should not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

The term "elastomer" and derivatives thereof means that the device comprises a polymer, a copolymer and derivatives and/or combinations thereof.

**Figure 1** illustrates that the snake-bite treatment device **10** can include a securing member **20**, such as a band or belt **20** and a compression member **30** that provides localized compression about a snake bite and can be configured for use on the torso **15** as well as a limb, *e.g.*, a proximal extremity such as proximal portion of an arm **16** or leg **17**. However, the device **10** may also be used to treat other bites and in other areas.

The belt **20** can comprise cloth, fabric, leather or other suitable, typically elastic, material and/or combinations thereof. The belt **20** can be configured to inhibit slippage even when exposed to sweat, rain or other moisture. The belt **20** can be configured to provide constant tension without loosening over a period of at least two  
5 hours, typically at least about 8 hours. The belt **20** can also or alternatively be periodically inspected by a user and tightened by a user as appropriate to maintain the desired compression. The belt **20** can be substantially planar or may be tubular (*e.g.*, a rope-like) configuration or other suitable configuration that has a length sufficient to encircle or extend about the torso and/or limb of a subject. The belt may be provided  
10 in S, M, L and XL sizes to fit different anatomical sizes of people or may be provided in a universal size. The belt **20** can be attached to clasp or buckle **25** that allows for almost any desired adjustable length. The compression member **30** can be configured to accept the different belt sizes (*e.g.*, the compression member **30** can be a universal compression member made for use with S, M, L and XL belt sizes.). In other  
15 embodiments, the compression member **30** and the belt **20** may be provided in different sizes.

**Figures 2A and 2B** illustrate one embodiment of the compression member **30**. As shown, the compression member **30** has a center through-aperture **31** (or open cavity) and a wall **32** with a perimeter **32p** that surrounds the aperture **31** defining a  
20 cavity **31c**. The cavity **31c** can be an open cavity, a closed cavity or a partially visually occluded cavity. The member **30** can be an elastomeric, ceramic, or metallic member (or combinations of same) that may be molded, stamped, machined or otherwise formed into the desired configuration. The member **30** can be a unitary monolithic member or may comprise a plurality of integrated components of the same  
25 or different materials. The member **30** can be configured to be light weight for ease of portability (*e.g.*, less than about 1 lb and typically about 6 ounces or less), with the actual weight being dependent upon the materials used to form the belt, clasp and compression member.

**Figure 2C** illustrates that the belt **20** can include opposing free ends **21, 22**, each with a compression member connector **23, 24**, respectively, that can releasably engage belt connectors **33, 34** of the compression member (**Figures 2A and 2B**). As shown in **Figure 2C**, the belt **20** can include a belt tensioner **25** (*e.g.*, clasp) that a  
30 user can easily and quickly use to slide or pull to adjust the length of the belt **20** and

maintain the desired tension. **Figure 4C** illustrates one example of a suitable tensioner **25**, shown as a clasp **25c**, that allows for adjustability to almost any desired length for use on a number of anatomical positions and different shaped individuals. In some embodiments, the belt **20** can be configured for one-hand adjustment by the victim without requiring the use of another person. However, the invention is not limited thereto as other belt attachment and length adjustment configurations can be employed.

The belt **20** is typically adjustable from a short length to fit around the (proximal) limb to a longer length to fit around the torso. In the embodiment shown in **Figure 2C**, the connectors **23, 24** have a closed perimeter geometric shape. The connectors **23, 24** may be in an open or closed shape and may have a "D" shape to inhibit rotation or turning during use as is shown in **Figure 8**. Other anti-rotation or anti-slip configurations may also be used. For example, an elastomeric increased friction gripping material can be applied to the connector **23, 24** and/or the belt **20** can be configured with a narrow holding channel or otherwise attached to the connectors **23, 24** to inhibit rotation of the connectors (not shown).

**Figure 3A** schematically illustrates that the compression member **30** can be configured so that tensioning of the belt **20** applies a compression force ( $F_c$ ) that is substantially orthogonal to the surface of the victim so that the member **30** can compress downwardly a sufficient distance to isolate the snake bite tissue and impede the flow of venom into the circulatory system. The belt **20** attaches to an upper portion of the compression member **30**. In the embodiment shown, the connectors **33, 34** have a profile when viewed from the side that extends upwardly and inwardly toward each other across the cavity **31c**. The outer bounds of the member **30** can have a long dimension of between about 1-6 inches, typically between about 2-5 inches, and a width and/or length in the short dimension of between about 1-4 inches, typically between about 1-3 inches. In some embodiments, the cavity **31c** can have similar dimensions. The wall **32** can have a height that is between about 0.25 inches to about 2 inches. The height of the wall **32** may be substantially constant about the entire perimeter or may vary.

**Figure 3B** illustrates alternate configurations of the belt connectors **23', 24'** and compression member connectors **33', 34'**. As shown, the belt connectors **23', 24'** may be fixedly or releasably attached to the compression member connectors **33', 34'**,

which can comprise an aperture in an upwardly extending tab **33t**, **34t**, with the aperture **33'a**, **34'a** typically residing a distance inside the outer bounds of the wall **32** of the compression member **30**. In some embodiments, one end of the belt **20** may be fixedly attached and the other end of the belt releasably attached to the member **30**.

5           **Figure 4A** illustrates yet another alternative belt connector **23'**, **24'**, this connector configuration being affixed (non-releasable) to the compression member **30** and provided in this configuration in a kit for use in that configuration.

**Figure 4B** illustrates that each end of the compression member may have different attachment configurations, and that one end of the compression member **30**  
10 can be releasably attached to the belt **20** while the other can be fixedly attached (*e.g.*, integrally attached). However, it may be desirable to configure the attachment and belt connection interface so that a substantially common compression force is exerted by the wall about the entire perimeter of the cavity **31c** surrounding the snake bite.

**Figure 5A** illustrates that the top of the compression member can comprise a  
15 covering **50**, such as a visually transmissive film or mesh that can provide some protection from the environment while allowing a user to be able view the snake bite location therethrough. The covering **50** can be pre-attached or attached by a user and included as a separate component in a kit. In other embodiments, the member **30** can include a solid upper surface over the cavity **31c** forming the compression chamber  
20 around the wound/bite mark (not shown).

**Figure 5B** illustrates an alternative configuration of a securing member **20'**. In this embodiment, a strap **20'** can extend across the compression member **30** to hold the member in position with sufficient compression force. The strap **20'** can include a relatively strong adhesive with sufficient length to extend beyond the perimeter of the  
25 member **30** and securely locks to the skin of a user, typically extending at least four inches from each side of the member **30**, and can extend substantially around the entire limb or torso. Although not shown, the strap **20'** could be two straps that attach to opposing edges of the member rather than a single strap. The strap **20'** could be provided in a treatment kit **100** (**Figure 7**) in a roll that allows a user to determine the  
30 desired length (and a user can wrap the strap over the member **30** a plurality of times and/or around the limb or torso one or more times). In addition, the member **30** can include two strap or tape channels (open or closed) that can reside on a top surface of the member **30** for ease of access/use that can help hold the strap or tape

symmetrically across the member or symmetrically extending from a substantially opposing location of the member for better control of compression pressure/force (not shown).

5       **Figures 6A and 6B** illustrate that the compression member **30** can have a different geometric shape from that shown with respect to the substantially oval or elongated circle shape shown above. **Figure 6A** illustrates the perimeter **32p** has a substantially rectangular shape while **Figure 6B** illustrates a perimeter **32p** with a substantially circular shape. The wall perimeter **32p** and the cavity **31c** shape may be different as shown in **Figure 6C**.

10       **Figure 7** illustrates a first aid kit **100** with the device **10**. In some embodiments, the kit **100** can include a plurality of different length belts **20**, shown as large and small belts **20L, 20S**, with the compression member **30**. In most uses, there will be no requirement to prepare the bite area by shaving as the device **30** is configured to be able to provide sufficient localized compression without such a  
15 preparatory action. However, the kit **100** may be provided with alcohol and shaving components. In some embodiments, the kit **100** can also include a suction member that cooperates with the compression member **30** and belt **20** (not shown).

The present invention is explained in greater detail in the following non-limiting Example.

20

#### EXAMPLE

Pigs were injected in the torso with coral snake venom, a potent neurotoxin. Most typical snake bites produce or deliver between about 3-6 mg of venom. The pigs were injected into the torso with 10 mg of snake venom (a fatal dose amount). A  
25 prototype of the device as shown in **Figures 8-10**, was used on some of the pigs injected with the snake venom and not used on others (controls). The experiment was performed to assess if the device prolonged the time until the animal stopped breathing.

The results shown at **Figure 11** illustrated the additional (prolonged) time  
30 provided when the device was used relative to when the device was not used. The control average was 322 minutes while the average for those using the treatment device was 480 minutes (158 minutes longer).

The device 10 may be particularly suitable for wilderness adventurers, such as mountain climbers, hikers, canoeists, kayakers and the like, as well as military field operation personnel, EMS personnel and ambulances, facilities in outlying areas, such as foresters, national park systems and the like, as well as school facilities, urgent care  
5 facilities and the like.

The foregoing is illustrative of the present invention and is not to be construed as limiting thereof. Although a few exemplary embodiments of this invention have been described, those skilled in the art will readily appreciate that many modifications are possible in the exemplary embodiments without materially departing from the  
10 novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the claims. In the claims, means-plus-function clauses, if used, are intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Therefore, it is to be understood that the  
15 foregoing is illustrative of the present invention and is not to be construed as limited to the specific embodiments disclosed, and that modifications to the disclosed embodiments, as well as other embodiments, are intended to be included within the scope of the appended claims. The invention is defined by the following claims, with equivalents of the claims to be included therein.

## THAT WHICH IS CLAIMED IS:

1. A snake bite treatment device, comprising:

a compression member held in place by a securing member, the compression member having an outwardly projecting wall that is configured to surround the snake bite and compress the skin about the snake bite a distance inward to isolate the venom from the bite to thereby impede the venom from entering a victim's lymphatic system.

2. The device of Claim 1, wherein the compression member wall has a perimeter that surrounds an open center aperture that, in position, resides over the snake bite, and wherein the wall is configured to extend substantially orthogonally a distance a direction that is into a victim's body to force the skin thereunder to compress a suitable distance.

3. The device of Claim 1, wherein the securing member comprises a belt, and wherein the compression member comprises first and second spaced apart belt connection members that extend a distance above the wall, with each belt connection member residing on an opposing lateral end of the compression member.

4. The device of Claim 3, wherein the belt connection members have a profile when viewed from the side that angles upwardly and inwardly toward each other from an outer edge of the compression member, and wherein the belt connection members are configured to releasably engage the belt.

5. The device of Claim 3, wherein the belt has an adjustable length and comprises first and second opposing end portions with a respective connector thereon, and wherein the first and second end portion connectors each releasably engage one of the belt connection members of the compression member whereby the belt is adjustable to have a length that forces the compression member to reside snugly on the patient about the snake bite with the compression member held securely in position.

6. The device of Claim 1, wherein the securing member comprises a belt that has an adjustable length and two opposing free end portions with a connector on each of the two opposing end portions, and wherein, in position, a user attaches the connectors to opposing end portions of the compression member to hold the compression member in position snugly against the victim's body.

7. The device of Claim 1, wherein the compression member is devoid of suction means and is configured to allow the snake bite to be exposed to atmospheric conditions.

8. The device of Claim 1, wherein the compression member has sufficient rigidity to apply a compression force that forces the skin about the bite inward and sufficient flexibility to conform to a curved anatomical body portion of a snake bite victim.

9. The device of Claim 1, wherein the securing member and compression member are sized and configured for applying localized compression to snake bites on a victim's torso and proximal extremities.

10. A first aid snake-bite treatment device, comprising:  
a localized compression member having a cavity surrounded by a wall, wherein, in position, the compression member resides on a skin surface of a victim such that the cavity resides over tissue proximate a snake bite and the wall surrounds and compresses localized tissue inward a distance away from and surrounding the snake bite; and

a belt having opposing end portions, wherein each end portion is configured to fixedly or releasably attach to laterally opposing end portions of the compression member.

11. A snake bite treatment kit, comprising:  
at least one belt or other securing member sized and configured to reside about a torso of a person; and

a compression member configured to attach to the at least one belt.

12. A method of performing first aid treatment of a venomous snake bite, comprising:

placing a localized compression member over a snake bite region on a surface of skin of a victim;

placing a belt around the victim;

tightening the belt and securing the compression member to the victim; and

compressing the skin of the victim surrounding the snake bite so that the compressed skin is forced inward a distance relative to the skin proximate the snake bite thereby impeding snake bite venom from migration into a victim's circulatory system.

13. A method according to Claim 12, wherein the compressing step is automatically carried out responsive to the tightening step after the placing steps.

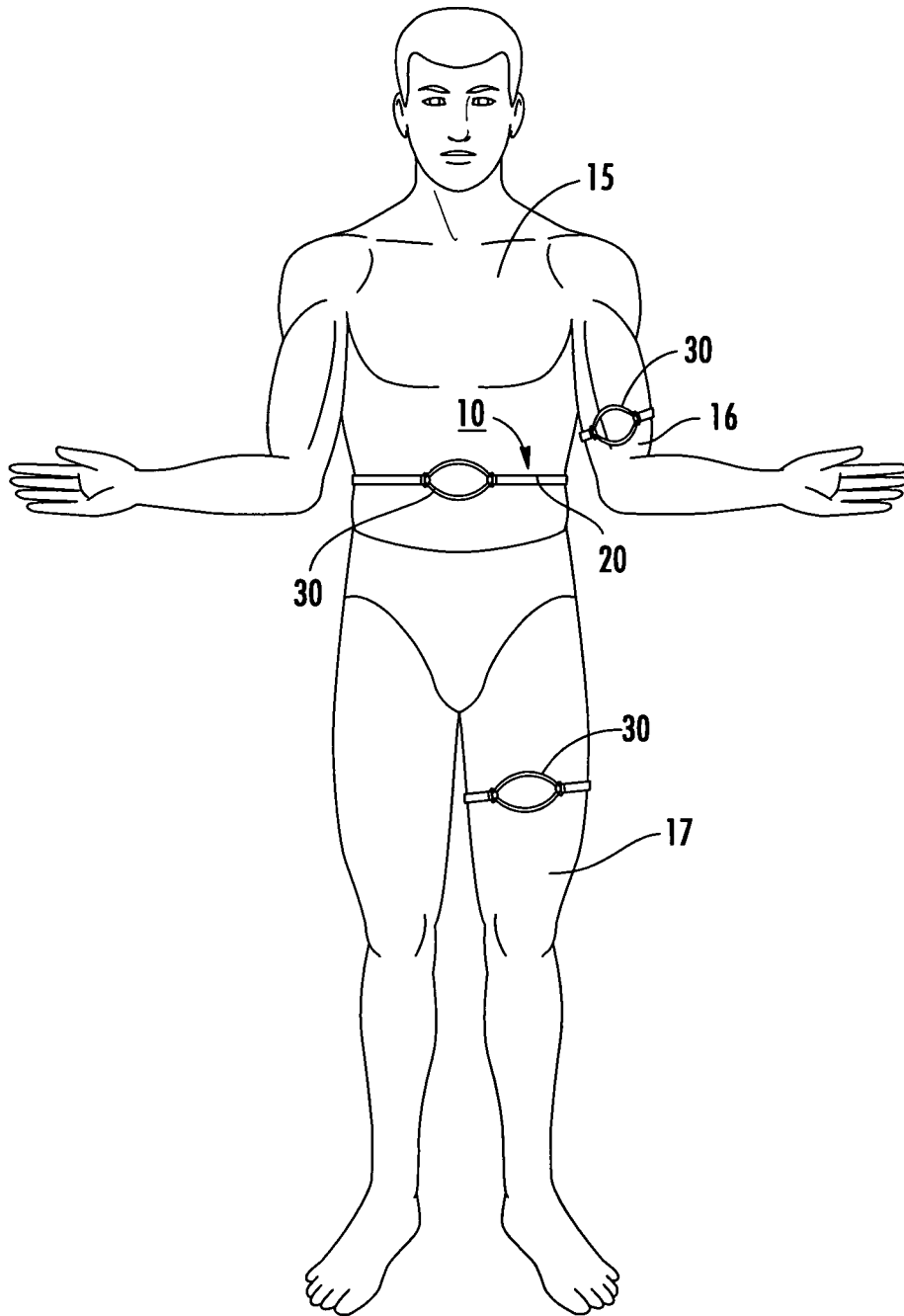
14. A method of performing first aid treatment of a venomous snake bite, comprising:

placing a localized compression member over a snake bite region on a surface of skin of a victim;

securing the compression member to the victim; and

compressing the skin of the victim surrounding the snake bite so that the compressed skin is forced inward a distance relative to the skin proximate the snake bite thereby impeding snake bite venom from migration into a victim's circulatory system.

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**FIG. 1**

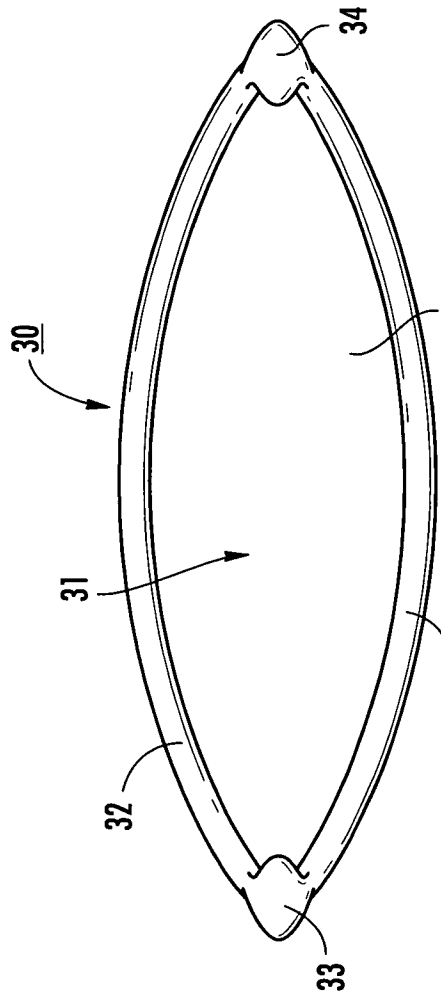


FIG. 2A

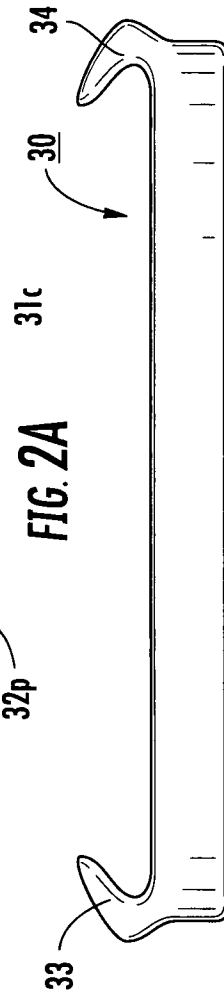


FIG. 2B

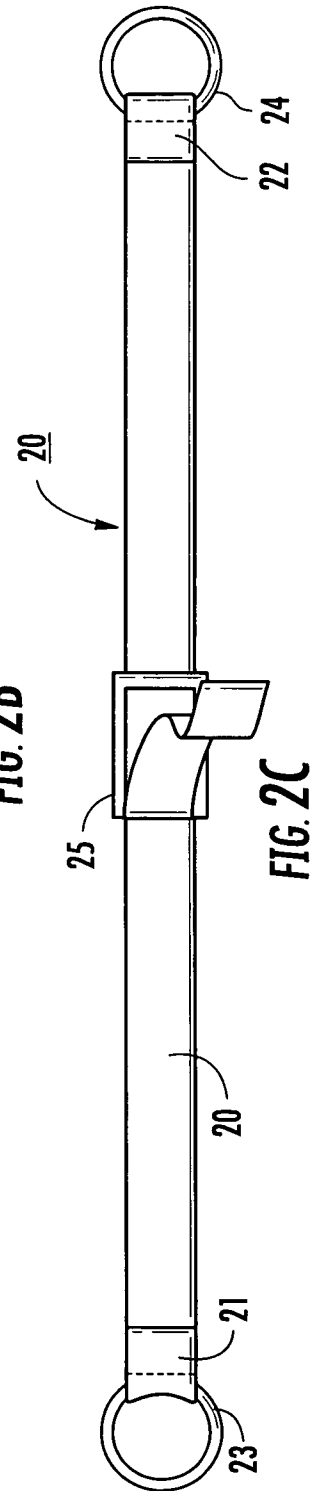
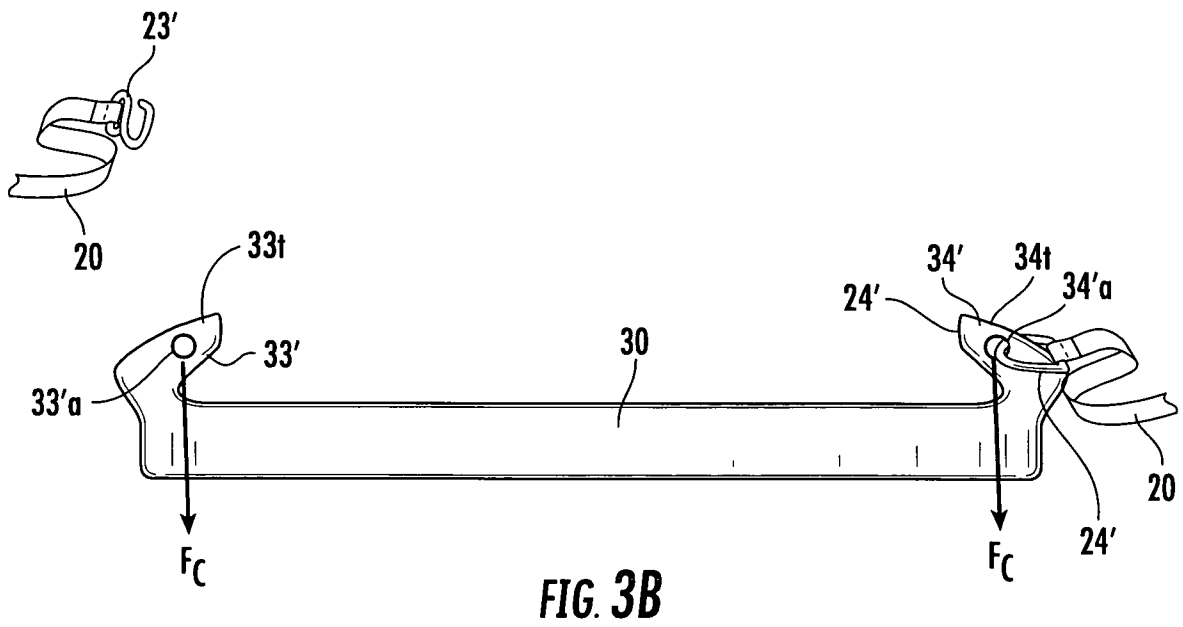
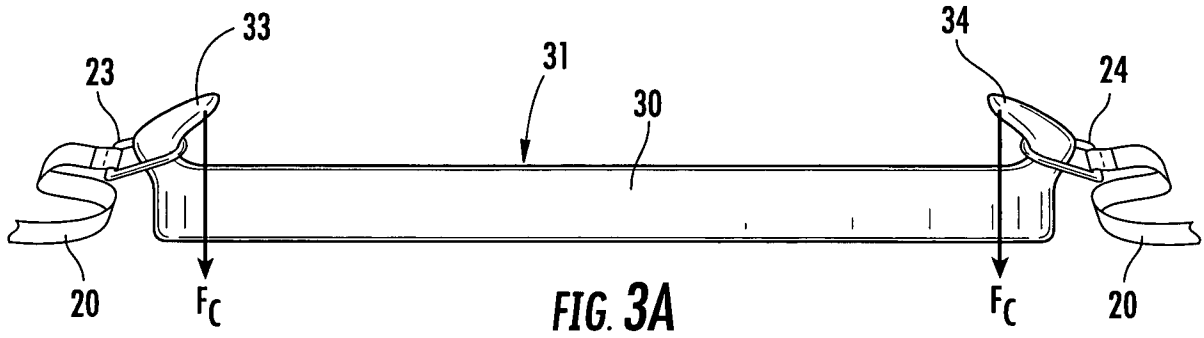
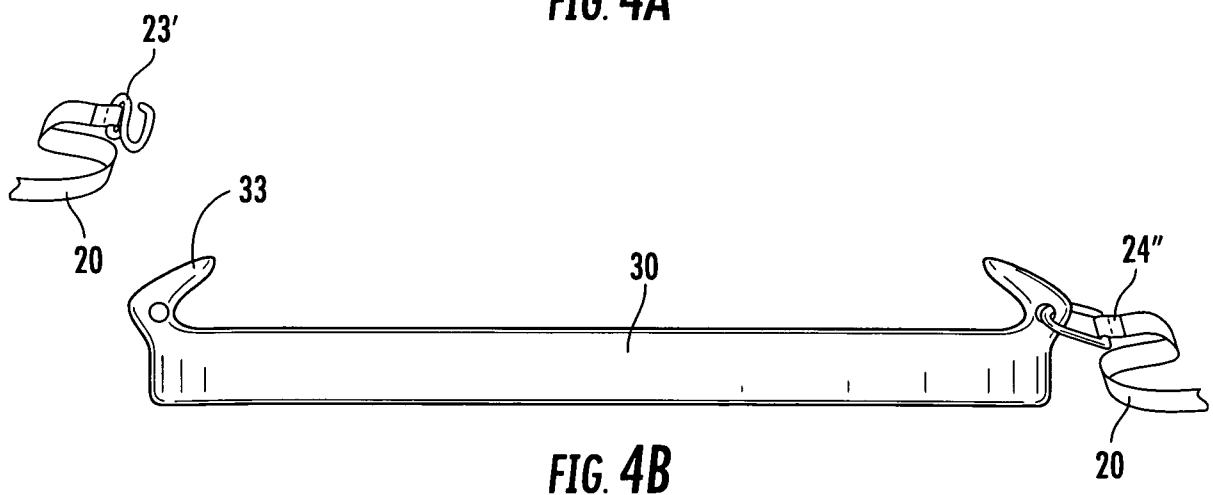
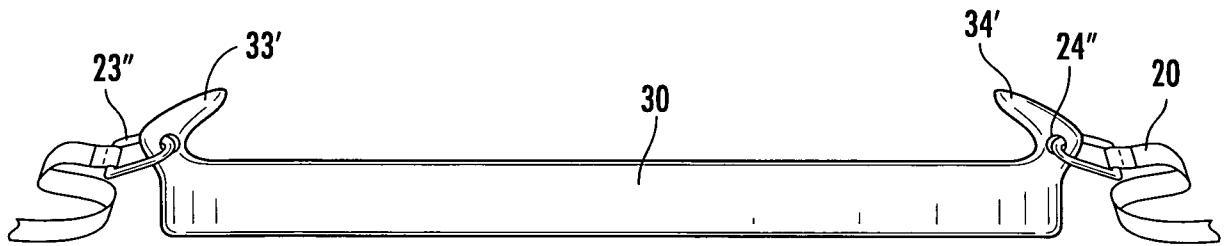
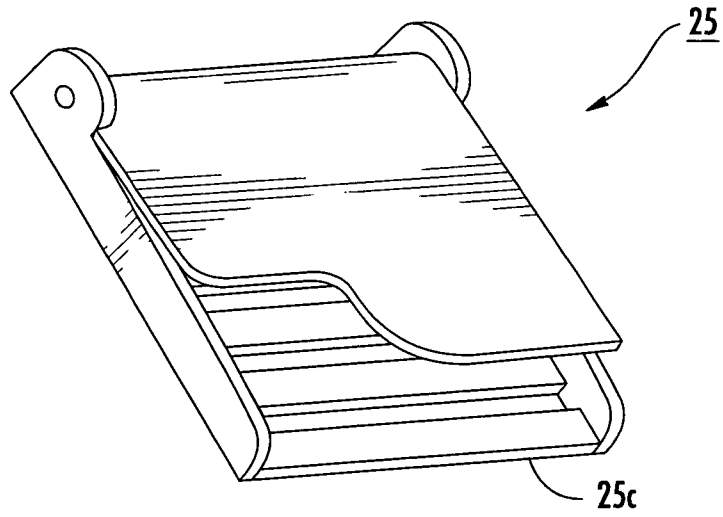


FIG. 2C





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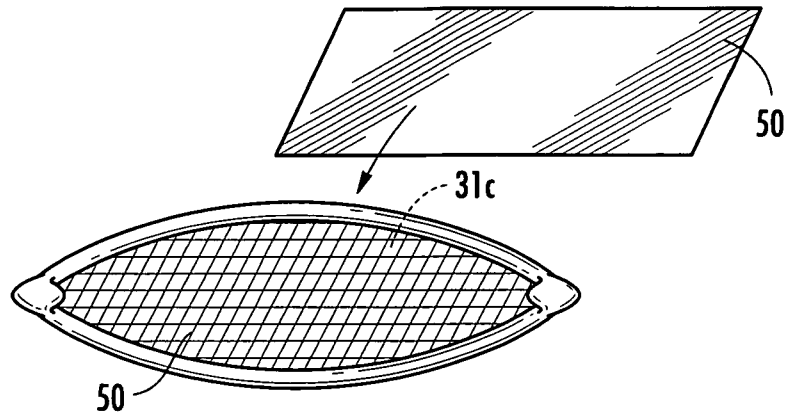


FIG. 5A

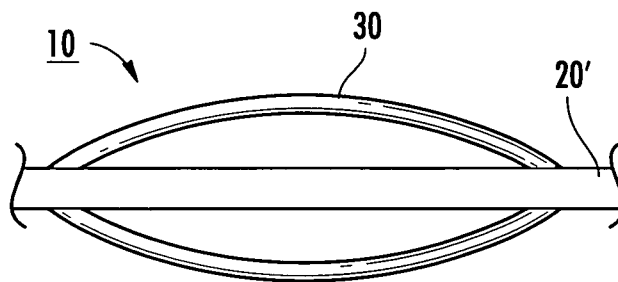


FIG. 5B

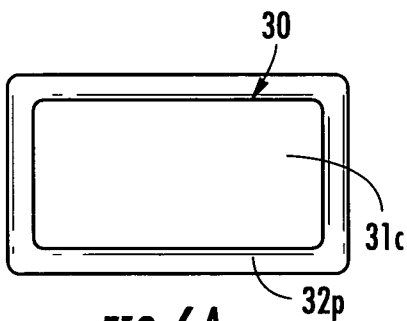


FIG. 6A

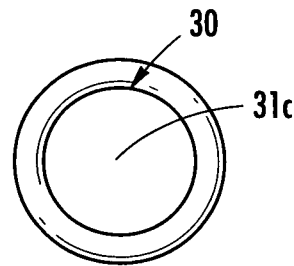


FIG. 6B

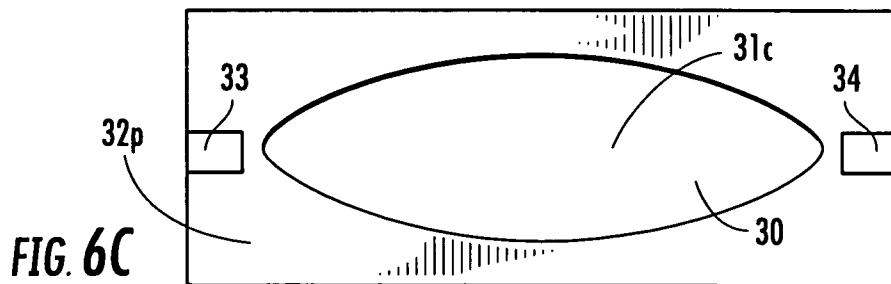


FIG. 6C

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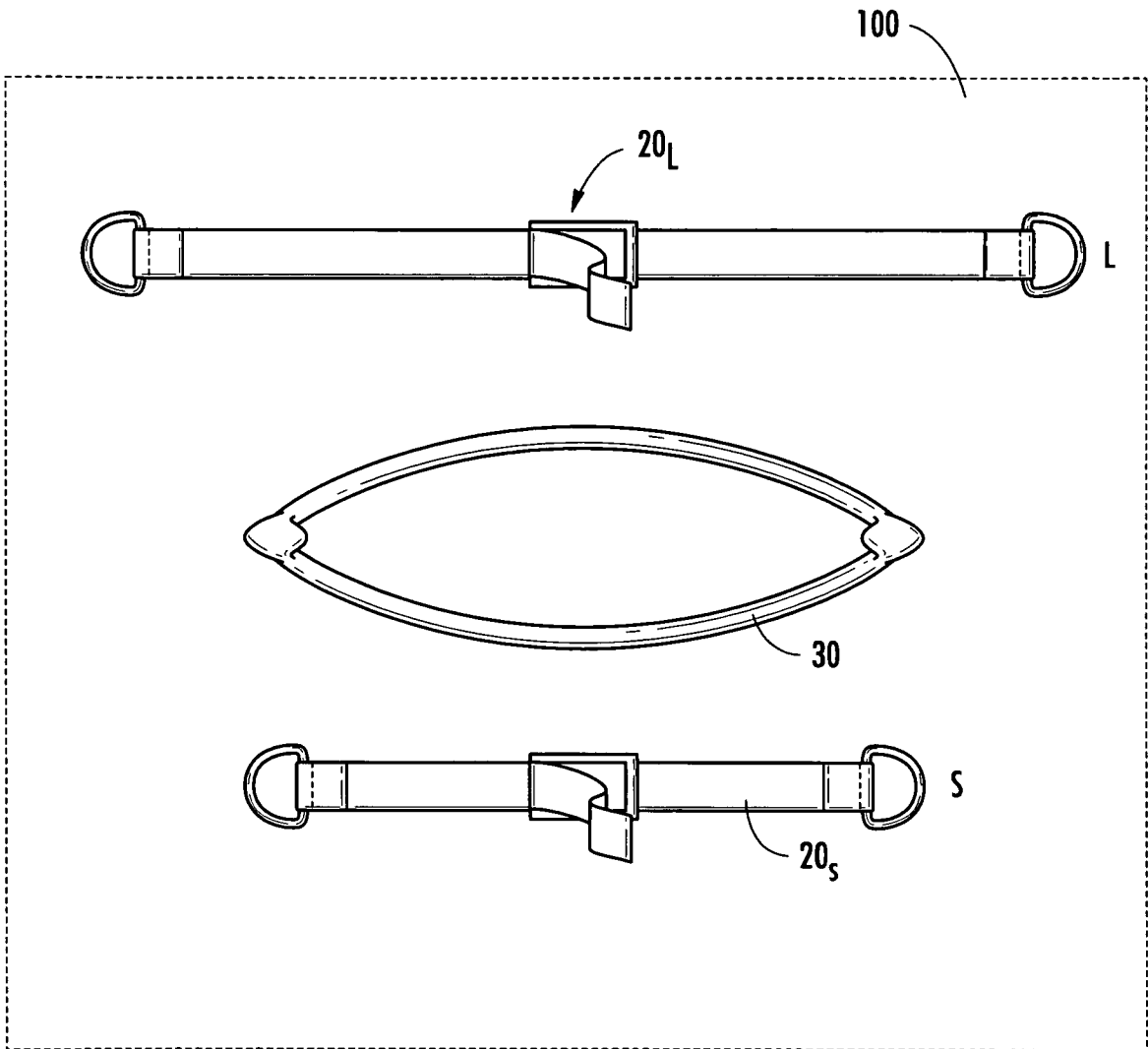


FIG. 7

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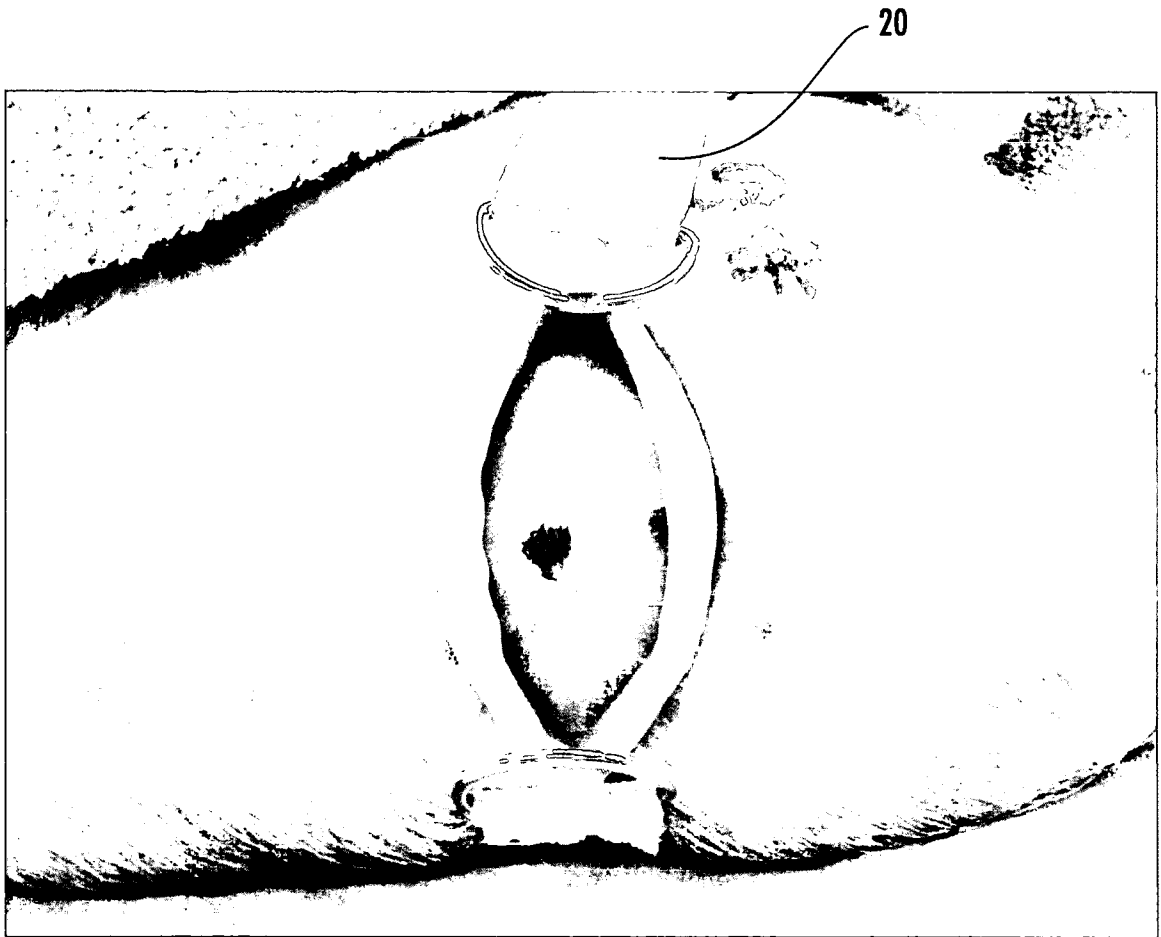
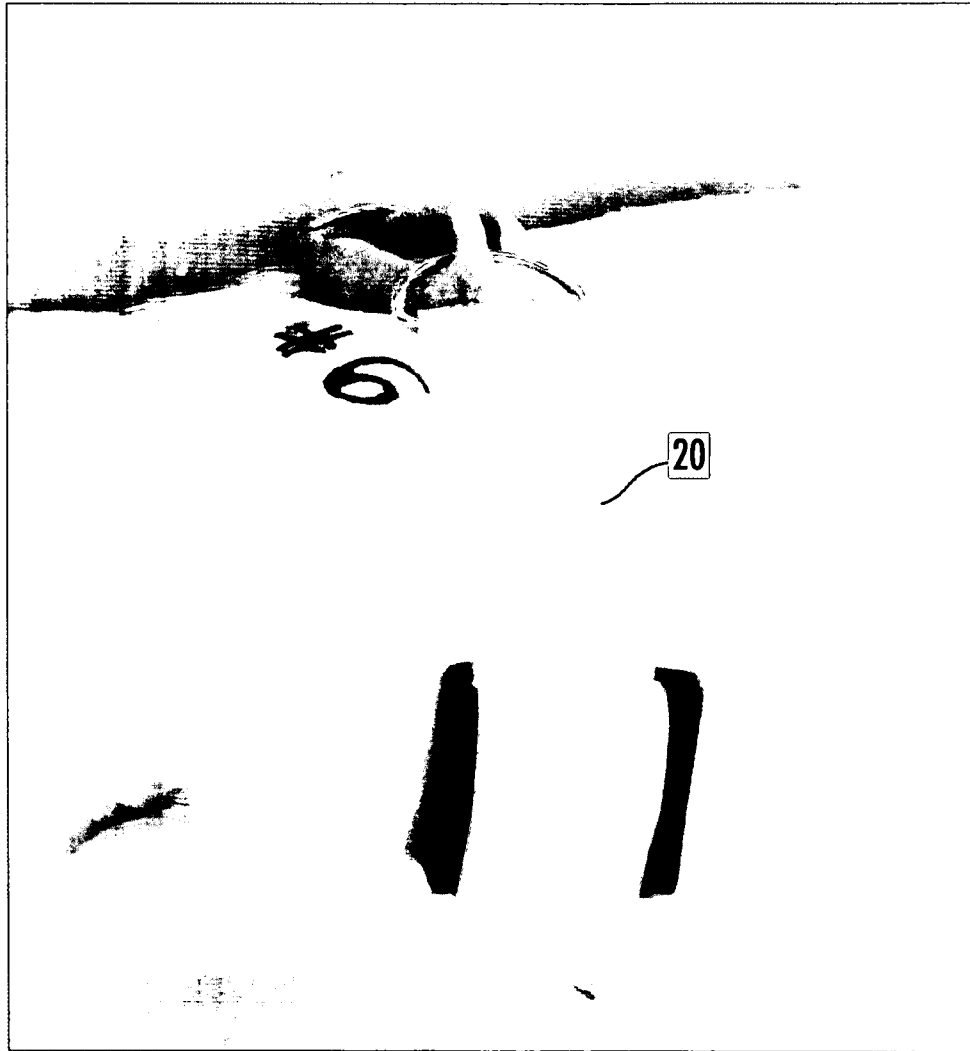


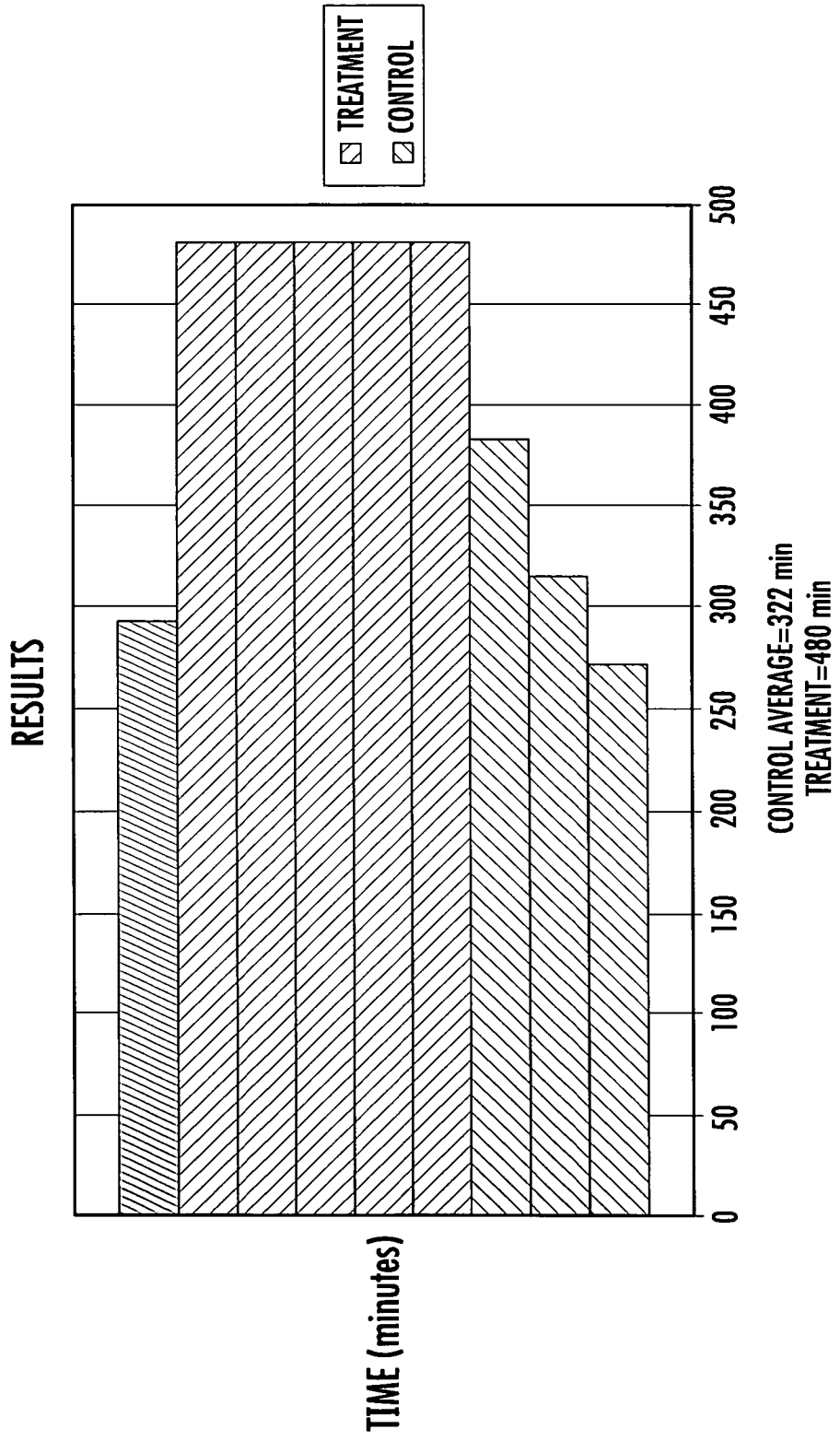
FIG. 8





**FIG. 9**



FIG. 10



**FIG. 11**

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
<i>A61F 17/00(2006.01)i, A61F 13/10(2006.01)i, A61F 13/12(2006.01)i, A61F 13/06(2006.01)i</i>		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC A61F 17/00, A61F 13/10, A61F 13/12		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean Utility Models and applications for Utility Models since 1975 Japanese Utility Models and applications for Utility Models since 1975		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPASS(KIPO internal), Google & keywords: snake, poison, bite, treatment, belt, tie, compression, etc.		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Swift First Aid Snake Bite Kit (Wisemen Trading and Supply Company) 10 October 2002 " http://www.wisementrading.com/firstaid/snake_bite.htm" - See a band(tourniquet) in the description and picture of the Kit.	1-14
A	Unit First Aid Kits - Snake Bite Kit (First-Aid Supplies Online Company) 18 August 2007 "http://www.firstaidsuppliesonline.com/nav.pl?cat=NavUnit&prod=35230SB" - See a band(tourniquet) in the description and picture of the Kit.	1-14
A	First Aid Treatment of Snake Bite (University of Canberra, Australia) 29 August 2007 "http://feral.org.au/staff/georges/snakebite.pdf" - See page 1, lines 13-15, lines 35-37.	1-14
A	Snake Bite First Aid (NC State University) 16 August 2004 "http://www.ces.ncsu.edu/gaston/Pests/reptiles/snakebitetx.htm" - See the part of 'NOTE'.	1-14
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 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 29 MAY 2009 (29.05.2009)		Date of mailing of the international search report <b>29 MAY 2009 (29.05.2009)</b>
Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer BAE, YEO WOOL Telephone No. 82-42-481-5568 

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2008/014139****A. CLASSIFICATION OF SUBJECT MATTER***A61F 17/00(2006.01)i, A61F 13/10(2006.01)i, A61F 13/12(2006.01)i, A61F 13/06(2006.01)i*

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 A61F 17/00, A61F 13/10, A61F 13/12

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

Korean Utility Models and applications for Utility Models since 1975

Japanese Utility Models and applications for Utility Models since 1975

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

eKIPASS(KIPO internal), Google &amp; keywords: snake, poison, bite, treatment, belt, tie, compression, etc.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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A	Snake Bite First Aid (NC State University) 16 August 2004 "http://www.ces.ncsu.edu/gaston/Pests/reptiles/snakebitetx.htm" - See the part of 'NOTE'.	1-14

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

\* Special categories of cited documents:

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"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

29 MAY 2009 (29.05.2009)

Date of mailing of the international search report

**29 MAY 2009 (29.05.2009)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 139 Seonsa-ro, Seo-  
gu, Daejeon 302-701, Republic of Korea

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