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(54) Title: IV LINE CLASP

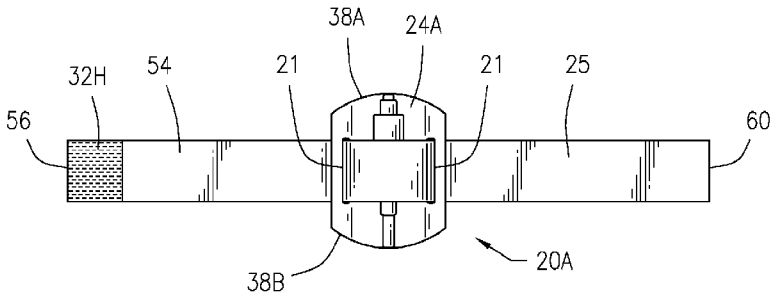

FIG. 9

(57) Abstract: The present invention is an alternate IV line clasp [20A] for holding IV equipment [10] securely to a patient's body [12] without the use of tape. The clasp [20A] has a contoured recessed channel [22] provided in an underside [42] of a head [24A] of the clasp [20A] such that the channel [22] receives and holds the IV equipment [1 0] therein. The clasp [20A] has an adjustable, slightly elastic strap [25] that extends over the head [24A] of the clasp [20A] by inserting through slits [21] provided on either side [38A and 38B] of the head [24A] and then extending around the patient's body [12] in the area of the body [1 2] where the IV [10] is installed. The two ends [56 and 60] of the strap [25] are provided, respectively, with hook and loop fasteners [32H and 32L] that allow the strap [25] to be removably secured to itself and around the patient's body [12] to hold the head [24A] and attached IV [1 0] in place.

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IV LINE CLASP

CROSS- REFERENCE TO RELATED APPLICATIONS

The present application claims priority to U.S. Continuation in Part Application No. 13/958976 for IV Line Clasp that was filed on August 5, 2013 which in turn claims priority to U.S. Patent Application Serial No. 13/803529 for IV Line Clasp that was filed on March 14, 2013.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a device for holding a non-ported IV that is installed in a patient's body so that it does not move. Specifically, the invention is an IV line clasp that takes the place of tape to hold an IV line in place on the patient.

2. Description of the Related Art

The present method for holding an installed intravenous (IV) needle is to put tape or some type of elastic band around the IV and the patient's body where the IV is installed. The problem with using tape is that the IV can shift under the tape and become dislodged. A still further problem with use of tape is that the tape can cause allergic reactions, can irritate or actually cause the skin to be removed when the tape is removed from the patient's body. This is particularly problematic when the skin is delicate, such as on an infant or elderly person or where there has been damage to the skin, such as in the case of a burn patient.

Use of an elastic band around the patient's body to secure the IV is also problematic since the elastic band can cut off circulation and result in tissue damage or death of tissue, even to the point of the patient losing a limb.

The present invention addresses these problems by providing an IV line clasp that receives and holds the IV equipment securely within a contoured recess or channel provided in the head of the clasp and that has an adjustable strap attaching to the clasp that secures together on its opposite ends to hold the IV in place on the patient's body without the use of tape.

SUMMARY OF THE INVENTION

The present invention is an IV line clasp that receives and holds the IV equipment securely within a contoured recess or channel provided in the head of the clasp and that has adjustable strap attaching to the clasp that secures together on its opposite ends to hold the IV in place on the patient's body without the use of tape.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a top plan view of an IV line clasp constructed in accordance with the present invention.

FIGURE 2 is a top plan view of the head of the IV line clasp of Figure 1, shown with the straps removed.

FIGURE 3 is a top perspective view of the head of Figure 2.

FIGURE 4 is a side view of the head of Figure 2.

FIGURE 5 is an end view of the head of Figure 2.

FIGURE 6 is bottom plan view of the head of Figure 2.

FIGURE 7 is bottom perspective view of the head of Figure 2.

FIGURE 8 is a perspective view of a prior art IV installation in the hand of a patient, showing the IV equipment secured to the patient's hand with tape.

FIGURE 9 is a top plan view of an alternate IV line clasp constructed in accordance with a preferred embodiment the present invention.

FIGURE 10 is a side view of the alternate IV line clasp of Figure 9.

FIGURE 11 an enlarged top plan view of the alternate IV line clasp of Figure 9, shown with the strap removed.

FIGURE 12 is a cross sectional view taken along line 12-12 of Figure 11.

FIGURE 13 is an enlarged view of the strap of the alternate IV line clasp showing the portion of the strap contained with circle 13 of Figure 10.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring initially to Figure 8, there is shown a typical prior art method of securing IV equipment 10 to a patient's body 12 with tape 14. It is important that the IV equipment 10 be secured to the patient's body 12 so that the IV catheter which is inserted into a vein in the patient's body 12 does not become dislodged which would require installation of a new IV catheter. However, use of tape 14 for this purpose is problematic.

Referring to Figure 1, there is illustrated an IV line clasp 20 that is constructed in accordance with a first embodiment of the present invention. The invention is an IV line clasp 20 that receives and holds the IV equipment 10 securely within a contoured recess or channel 22 provided in a centrally located head 24 of the clasp 20. The head 24 is preferably constructed of molded plastic. Adjustable cotton straps 26A and 26B are attached on opposite ends 28A and 28B of the head 24 that secure together on distal ends 30A and 30B of the straps 26A and 26B via fasteners 32 provided on the ends 30A and 30B to hold the IV equipment 10 in place on the patient's body 12 without the use of tape 14.

The straps 26A and 26B are adjustable in length and are designed to be secured together around the patient's body 12 with fasteners 32, such as the hook and loop fastener that is illustrated. The straps 26A and 26B are preferably constructed of a comfortable, non-allergenic material that has a minimal amount of stretching capacity, such as the cotton bands that are illustrated.

Figures 2-7 show the detail of the head 24. The top 34 of the head 24 is arched upward and is preferably provided with a smoothly curved and contoured shape so that it is not easily snagged. The ends 28A and 28B of the head 24 are straight and approximately parallel with each other, and the straps 26A and 26B attached to the head 24 at the ends 28A and 28B. Each of the two sides 38A and 38B the head 24 is provided with a circular opening 40A and 40B. The two circular openings 40A and 40B are connected together on the underside 42 of the head 24 to form the channel 22 in which

the IV equipment 10 inserts when the clasp 20 is in use, as will be more fully described hereafter.

Referring to Figures 6 and 7, the channel 22 is shaped, sized, and contoured to receive therein the IV equipment 10. Specifically, the channel 22 is provided with an IV catheter receiving section 44 that connects with the first circular opening 40A. The IV catheter receiving section 44 connects to a butterfly receiving section 46, and the butterfly receiving section 46 connects to a hub receiving section 48. The hub receiving section 48 connects to a hep lock receiving section 50, and the hep lock receiving section 50 connects to an IV line receiving section 52. The IV line receiving section 52 connects with the second circular opening 40B.

In use, the IV catheter is first installed in the patient's body 12. Then the IV line clasp 20 is placed over the IV equipment 10 so that the IV catheter of the IV equipment 10 inserts into the IV catheter receiving section 44 of the channel 22, the butterfly wings of the IV equipment 10 inserts into the butterfly receiving section 46, the hub of the IV equipment 10 inserts into hub receiving section 48, the hep lock or heparin containing lock of the IV equipment 10 inserts into the hep lock receiving section 50, and the IV line of the IV equipment 10 inserts into the IV line receiving section 52. When the IV equipment 10 is thus inserted into the channel 22, the IV catheter will exit the head 24 via the first circular opening 40A and the IV line will exit the head 24 via the second circular opening 40B. After the IV equipment 10 has been thus received in the channel 22, the straps 26A and 26B are extended around the patient's body 12 and secured together via fasteners 32 in order to secure the IV equipment 10 to the patient's body 12. The straps 26A and 26B are then adjusted in length to have a secure, but not a tight fit around the patient's body 12 so that the patient's circulation is not affected.

Referring now to Figures 9 and 10, there is illustrated an alternate IV line clasp 20A that is constructed in accordance with a preferred embodiment of the present invention. The alternate IV line clasp 20A is substantially identical to the first IV line clasp 20 described above except that the alternate IV line clasp 20A is provided with a single strap 25 that secures the alternate

head 24A of the alternate clasp 20A to the patient, as illustrated in Figures 9 and 10; and the alternate head 24A is modified by including a slit 21 on either side of the head 24A, as illustrated in Figures 11 and 12. That single strap 25 inserts through the slits 21 provided in the alternate head 24A as a means of attachment to the alternate head 24A. As illustrated in figures 9 and 10, when the single strap 25 is inserted through the slits 21, the strap 25 extends over the top 34A of the alternate head 24A.

Referring also to Figure 13, the single strap 25 is provided with hooks 32H on the top side 54 of the strap 25 on a first end 56 of the strap 25 that removably engage loops 32L provided on a bottom side 58 of the strap 25 on the remaining length of the strap 25 and on an opposite second end 60 of the strap 25 as a means of attaching the single strap 25 back upon itself to form a circular band for encircling a part of the patient's body to which an IV line is to be attached, such as for example an arm of the patient. Because the hooks 32H can engage the loops 32Lanywhere along the entire length of the strap 25, the circumference of a circular band created when the strap 25 attaches back upon itself is variable or adjustable to fit various sizes of parts of a patient's body to which an IV line it to be attached.

Also, it is desirable that the single strap 25 be only semi-elastic such that the strap 25 stretches slightly and clings to the patient's body when secured around the part of the patient's body to which an IV line is attached and is not easily dislodged therefrom. However, the single strap 25 should not be capable of stretching too much so that it is not so elastic that the strap 25 would present a danger of cutting off the circulation in the patient's body part to which it attaches.

The head 24A is preferably constructed of flexible plastic material that can be flexed to allow the IV equipment 10 to enter the channel 22, be held securely in the channel 22 when in use, and can be flexed to removed the IV equipment 20 from the channel 22 when desired.

While the invention has been described with a certain degree of particularity, it is manifest that many changes may be made in the details of construction and the arrangement of components without departing from the

spirit and scope of this disclosure. It is understood that the invention is not limited to the embodiments set forth herein for the purposes of exemplification, but is to be limited only by the scope of the attached claim or claims, including the full range of equivalency to which each element thereof is entitled.

WHAT IS CLAIMED IS:

1. An IV line clasp for securing an IV to a patient's body without the use of tape comprising:

a head provided with a channel for receiving IV equipment, an adjustable length strap that secures to the head and has ends that extend from opposite ends of the head, and fastening means for securing distal ends of the strap to each other to secure the head to a patient's body,

2. An IV line clasp according to claim 1 wherein the channel is shaped and sized to receive IV equipment therein.

3. An IV line clasp according to claim 2 wherein the channel terminates in a first circular opening and a second circular opening provided on opposite sides of the head.

4. An IV line clasp according to claim 3 wherein the channel further comprises:

an IV catheter receiving section of the channel that connects to the first circular opening, the IV catheter receiving section connects to a butterfly receiving section of the channel, the butterfly receiving section connects to a hub receiving section of the channel, the hub receiving section connects to a hep lock receiving section of the channel, the hep lock receiving section connects to an IV line receiving section of the channel, and the IV line receiving section connects with the second circular opening.

5. An IV line clasp according to claim 4 wherein the first circular opening is sized to allow an IV catheter to enter the channel on one side of the head, and the second circular opening is sized to allow an IV line to enter the channel on an opposite side of the head.

6. An IV line clasp according to claim 1 wherein the fastening means is a hook and loop type fastener provided on opposite ends of the strap.

7. An IV line clasp according to claim 1 wherein the strap is somewhat elastic such that it has the ability to cling to the patient's body when in use.

8. An IV line clasp according to claim 1 wherein a top of the head is smoothly curved and contoured so it is not easily snagged.

9. An IV line clasp according to claim 1 wherein the channel is provided in the underside of the head.

10. An IV line clasp according to claim 1 wherein the head is constructed of flexible plastic material.

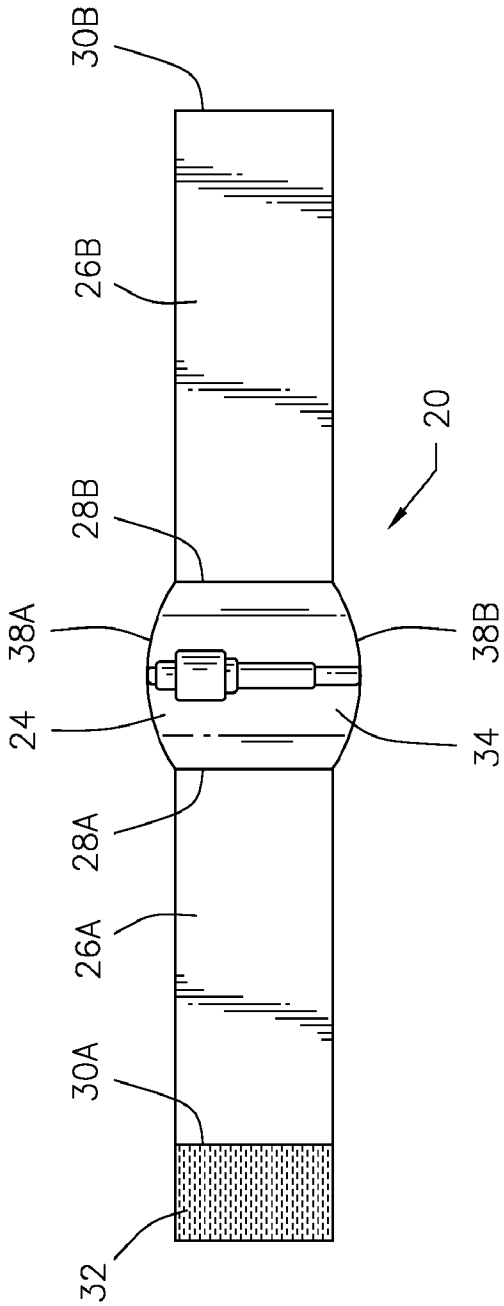

FIG. 1

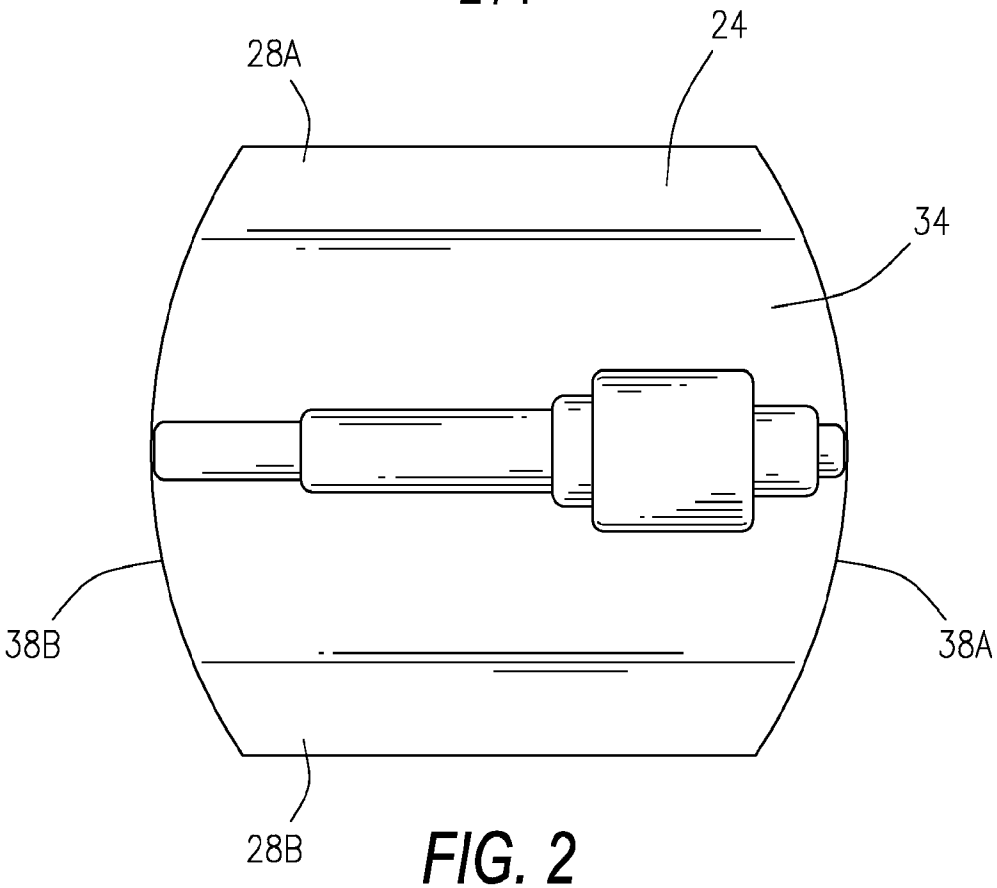

FIG. 2

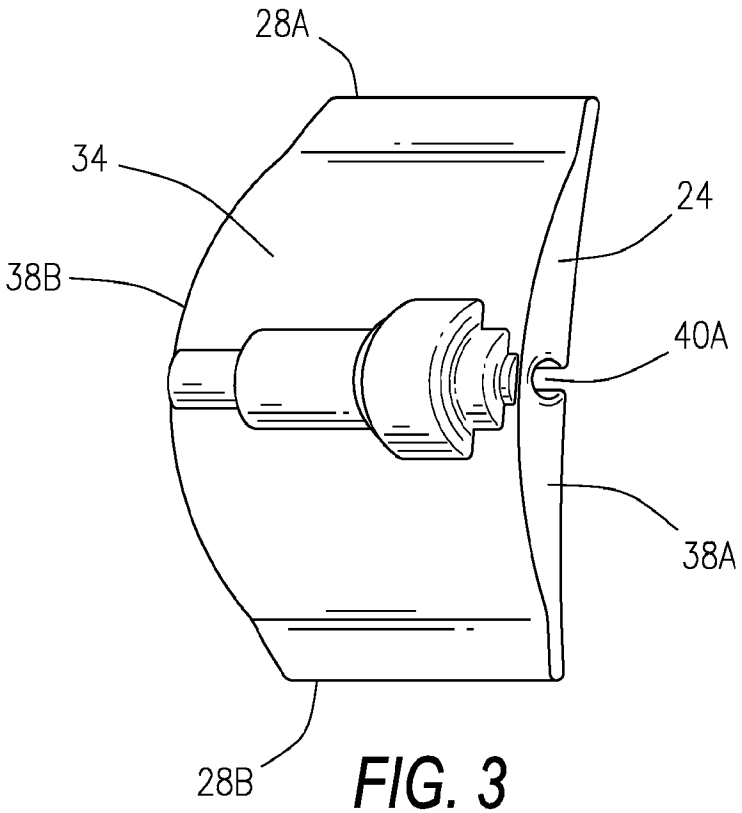

FIG. 3

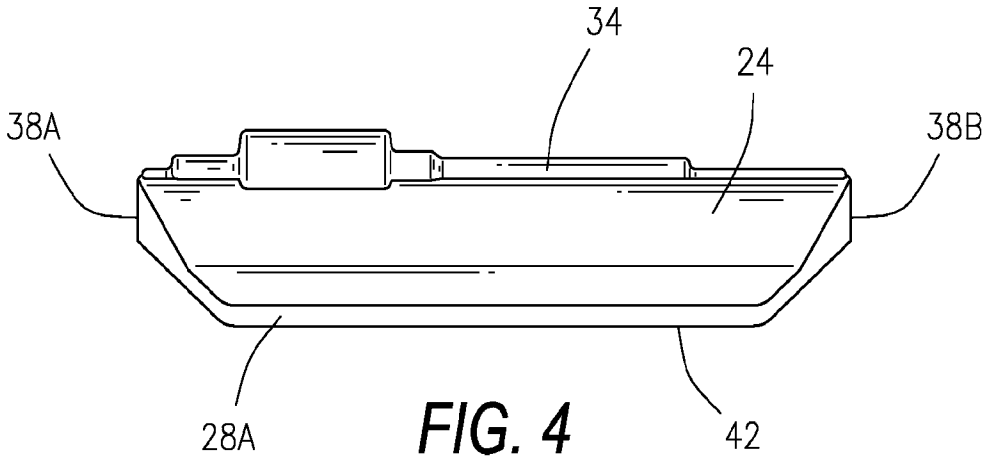

FIG. 4

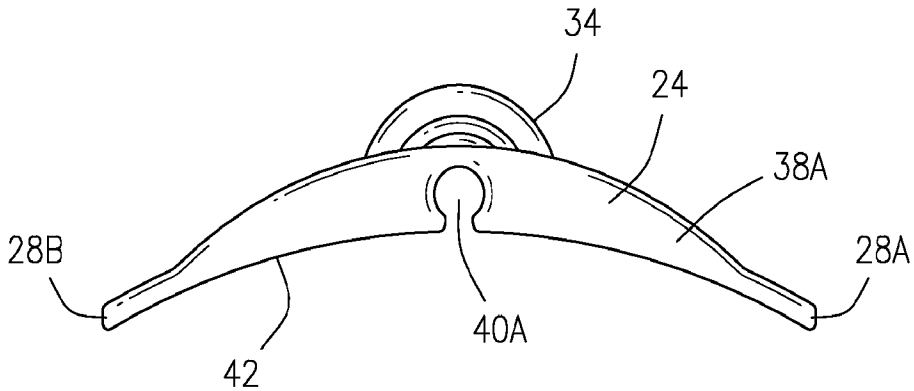

FIG. 5

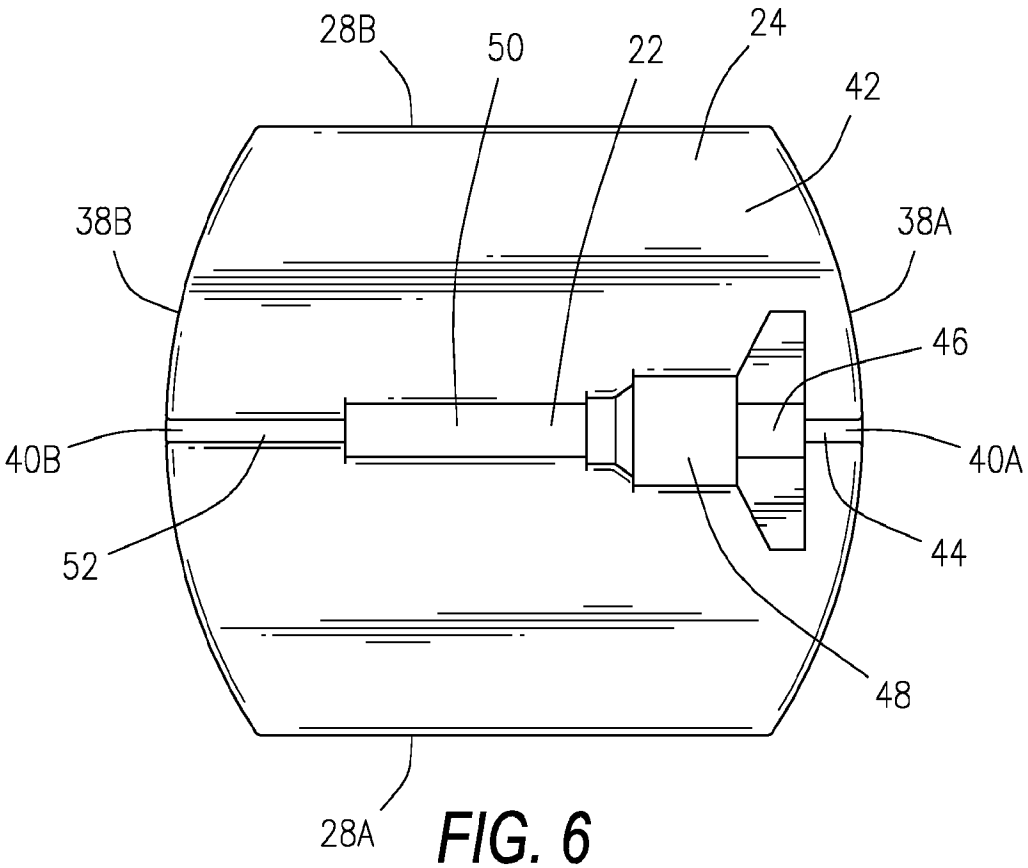
28B
50
22
24
42
38B
38A
46
40B
40A
52
44
48
28A

FIG. 6

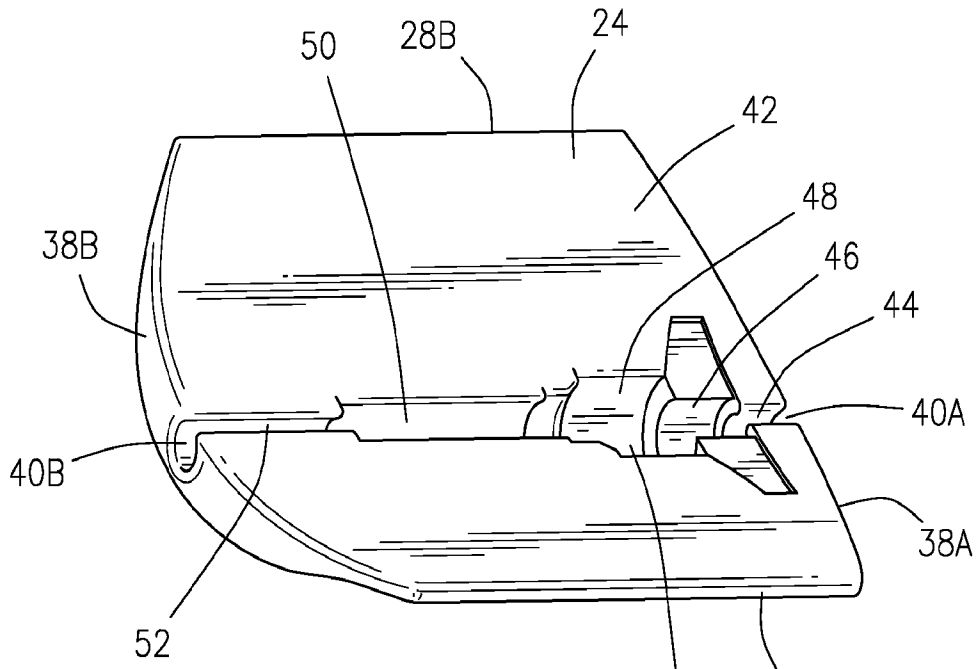
50
28B
24
42
48
38B
46
44
40A
40B
38A
52
22
28A

FIG. 7

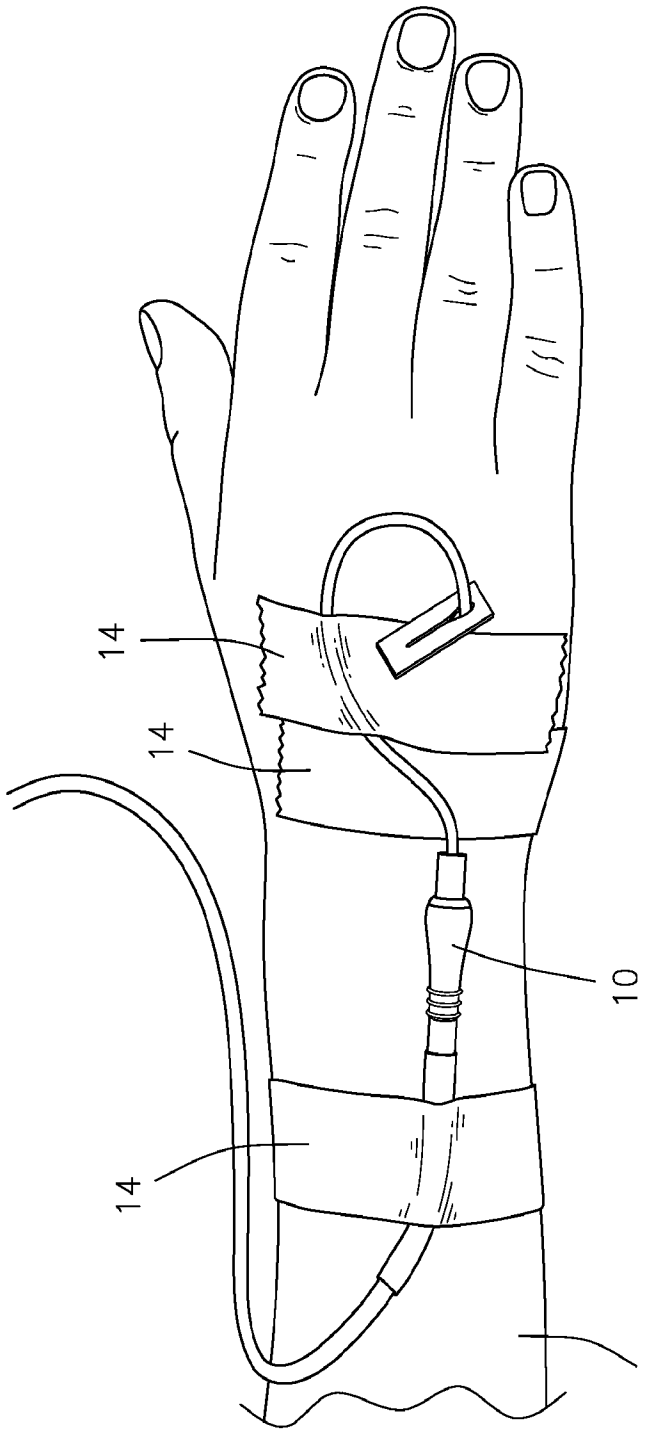

FIG. 8
PRIOR ART

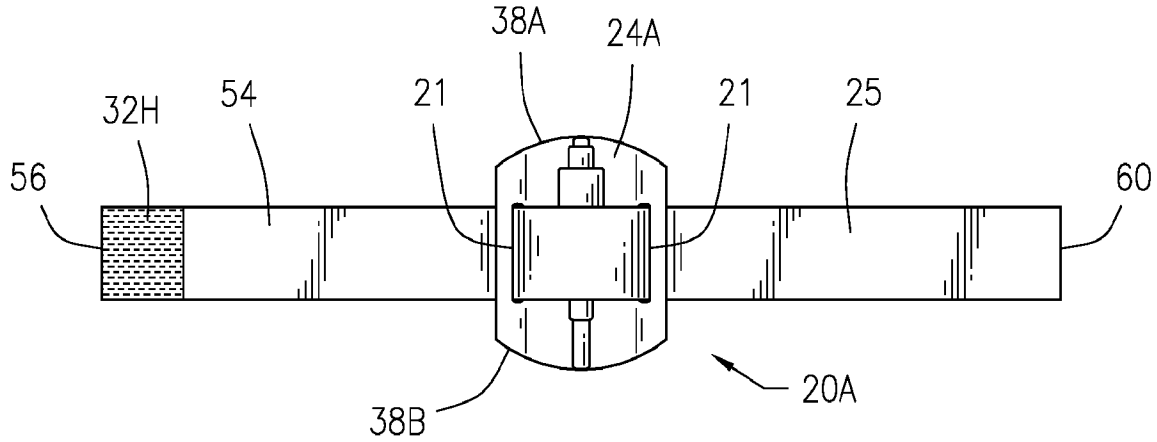

FIG. 9

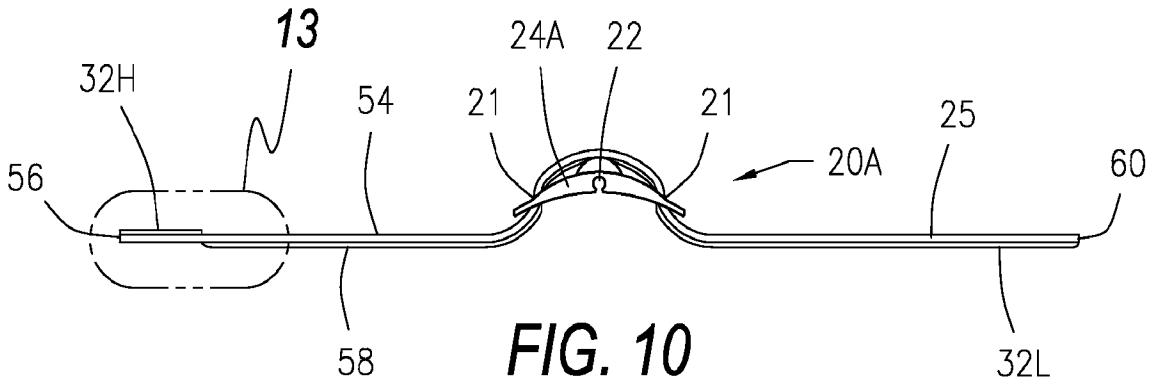

FIG. 10

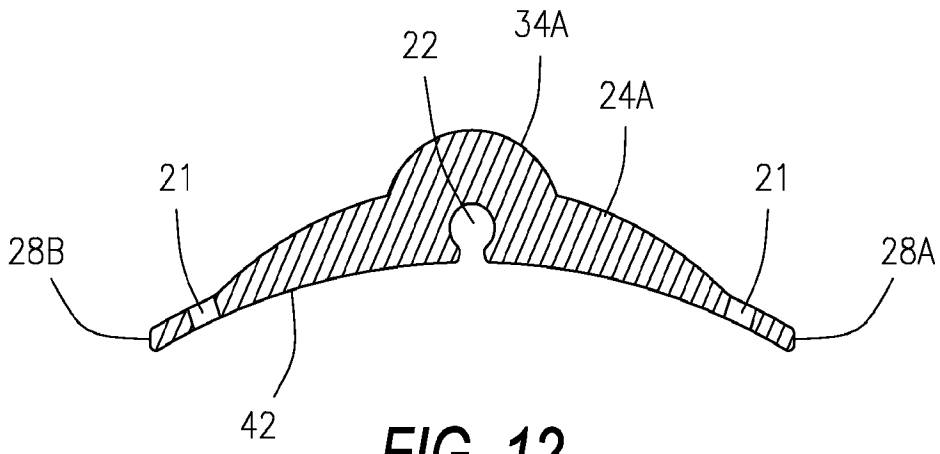

FIG. 12

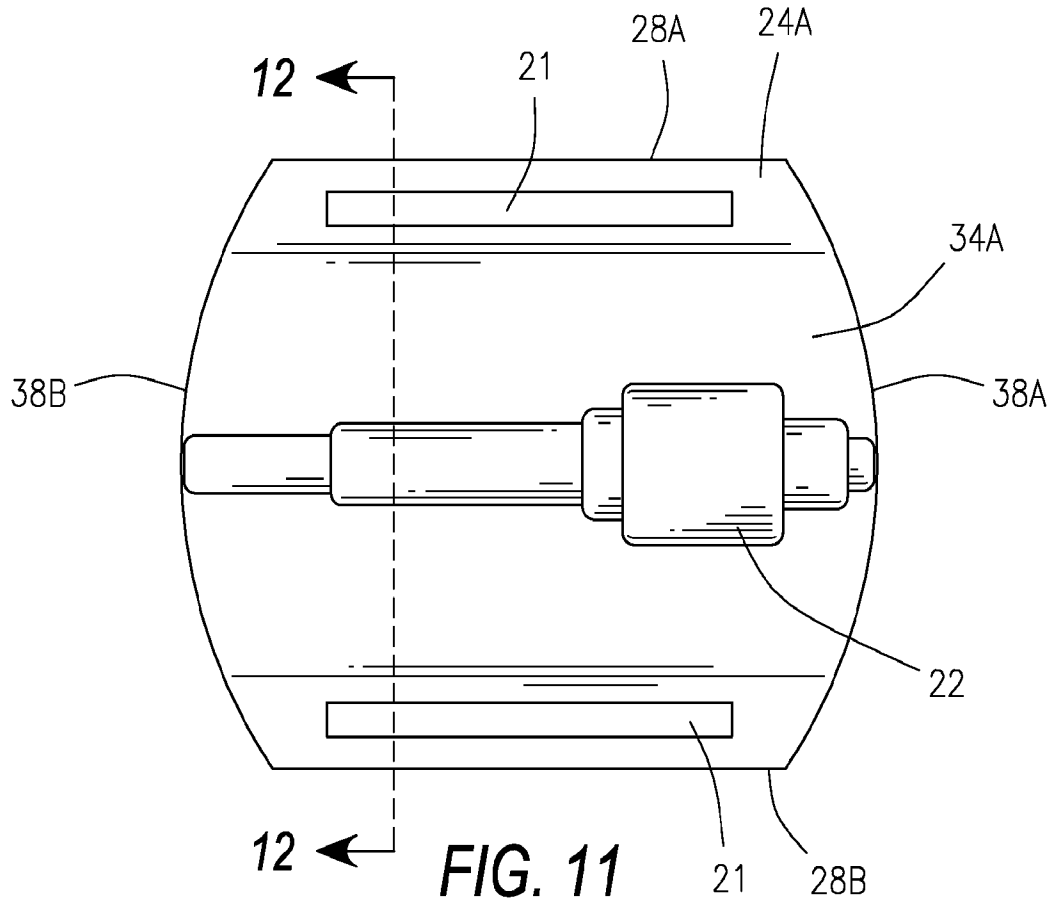

FIG. 11

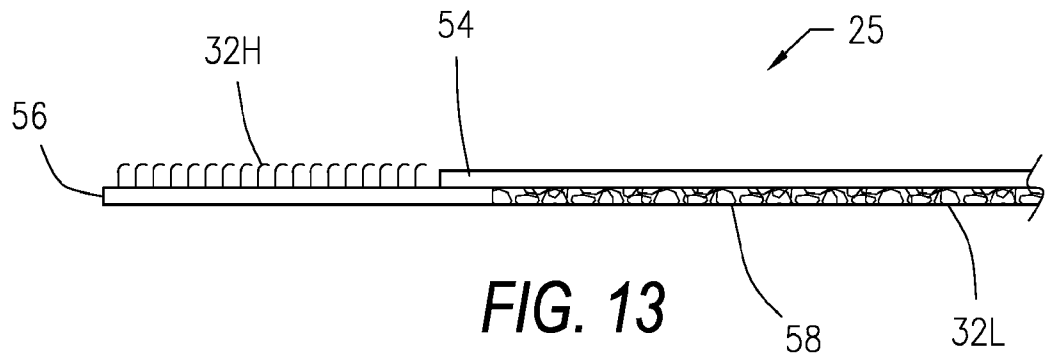

FIG. 13

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US13/54652

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A61M 25/02, 5/32 (2013.01)
USPC - 604/174, 179
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): A61M 25/02, 5/32 (2013.01)
USPC: 604/174, 179

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)
MicroPatent (US Granted, US Applications, EP-A, EP-B, WO, JP, DE-G, DE-A, DE-T, DE-U, GB-A, FR-A); ScienceDirect; PubMed; Google/Google Scholar; Search terms used: IV; intravenous; catheter; hub; hep lock; channel; clasp; clip; strap; hook; fastener

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,916,199 A (MILES, JF) June 29, 1999; figures 1, 4, 5; column 4, lines 18-22; column 5, lines 7-12, 39-45, 57-60; column 8, lines 41-45; column 9, lines 6-9, 62-63; column 10, lines 14-18, 50-53.	1-3, 6, 9, 10 ---------- 7, 8
Y	US 2011/0288486 A1 (ROZIER, BM et al.) November 24, 2011; paragraphs [0078], [0085].	7, 8
A	US 6,080,138 A (LEMKE, CL et al.) June 27, 2000; column 4, 3-7; column 6, lines 39-41.	4, 5
A	US 5,112,313 A (SALLEE, PL) May 12, 1992; figure 4; column 4, 44-51.	4, 5
A	US 8,241,253 B2 (BRACKEN, RL) August 14, 2012; entire document.	1-10
A	US 2006/0084922 A1 (BOTHA, R.) April 20, 2006; entire document.	1-10

☐ Further documents are listed in the continuation of Box C. ☐

* 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
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"O" document referring to an oral disclosure, use, exhibition or other means
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"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
29 October 2013 (29.10.2013)	08 NOV 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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