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**Allen et al.**

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(54) **FLEXIBLE PORT USED TO CONNECT A WOUND DRESSING TO A SOURCE OF NEGATIVE PRESSURE**

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(**) Term: **15 Years**

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(51) **LOC (10) Cl.** ..... **24-02**

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

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,613,696 A 10/1952 MacIntyre
2,682,873 A 7/1954 Evans et al.
(Continued)

FOREIGN PATENT DOCUMENTS

AU 674837 B2 1/1997
CN 1212613 A 3/1999
(Continued)

OTHER PUBLICATIONS

US 7,186,244, 03/2007, Hunt et al. (withdrawn)
(Continued)

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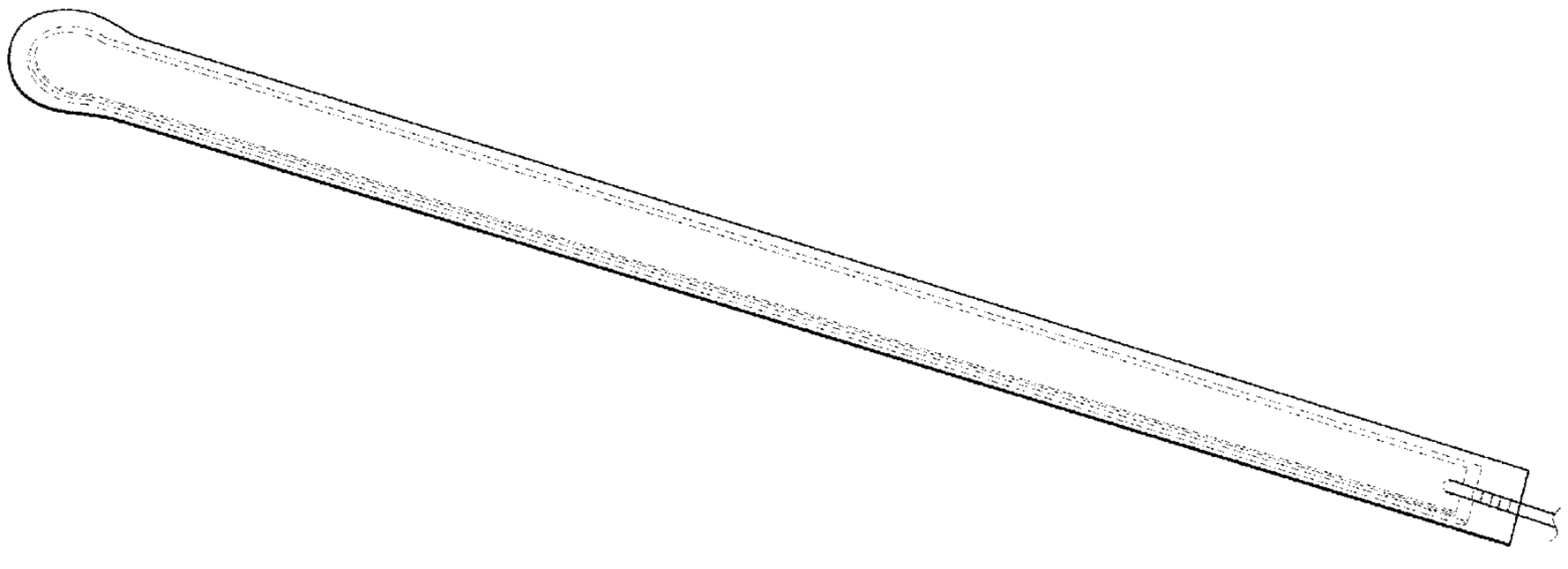
(57) **CLAIM**

The ornamental design for a flexible port used to connect a wound dressing to a source of negative pressure, as shown and described.

**DESCRIPTION**

FIG. **1** is a perspective top view of an ornamental design of an embodiment of a flexible port used to connect a wound dressing to a source of negative pressure.
FIG. **2** is a top plan view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **3** is a bottom view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **4** is a right side view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **5** is a left side view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **6** is a front view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **7** is a rear view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **8** is an exploded view of the flexible port used to connect a wound dressing to a source of negative pressure of FIG. **1**.
FIG. **9** is an enlarged view of the front view of FIG. **6**; and,
FIG. **10** is an enlarged view of the rear view of FIG. **7**.
The broken lines illustrate portions of the flexible port used to connect a wound dressing to a source of negative pressure which form no part of the claimed design.

**1 Claim, 8 Drawing Sheets**



(58) **Field of Classification Search**
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CPC .. A61M 25/065; A61M 5/42; A61M 25/0612; A61M 25/00; A61M 39/00; A61M 27/00; A61M 25/0043; A61M 25/0067; A61M 25/0097; A61F 2/958
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS


| | | | | |
|---|---|---|---|---|
| 3,342,183 | A | | 9/1967 | Edenbaum |
| 3,568,675 | A | | 3/1971 | Harvey |
| 3,935,863 | A | | 2/1976 | Kliger |
| D267,510 | S | | 1/1983 | Golub |
| 4,564,010 | A | | 1/1986 | Coughlan et al. |
| 4,587,146 | A | | 5/1986 | Anhauser et al. |
| 4,605,399 | A | | 8/1986 | Weston et al. |
| 4,627,429 | A | | 12/1986 | Tsuk |
| D292,826 | S | | 11/1987 | Sproles |
| 4,808,172 | A | | 2/1989 | Murata |
| 4,846,164 | A | | 7/1989 | Martz |
| 4,917,112 | A | | 4/1990 | Kalt |
| 4,921,492 | A | | 5/1990 | Schultz |
| 4,969,880 | A | | 11/1990 | Zamierowski |
| 5,052,381 | A | | 10/1991 | Gilbert et al. |
| 5,056,510 | A | | 10/1991 | Gilman |
| 5,100,396 | A | | 3/1992 | Zamierowski |
| 5,115,801 | A | | 5/1992 | Cartmell et al. |
| 5,160,328 | A | | 11/1992 | Cartmell et al. |
| 5,176,663 | A | | 1/1993 | Svedman et al. |
| 5,197,945 | A | | 3/1993 | Cole et al. |
| 5,261,893 | A | | 11/1993 | Zamierowski |
| 5,266,371 | A | | 11/1993 | Sugii et al. |
| 5,336,219 | A | | 8/1994 | Krantz |
| 5,354,261 | A | | 10/1994 | Clark et al. |
| D352,782 | S | | 11/1994 | Kirk et al. |
| 5,364,381 | A | | 11/1994 | Soga et al. |
| 5,380,294 | A | | 1/1995 | Persson |
| D357,742 | S | | 4/1995 | Peery et al. |
| 5,437,651 | A | | 8/1995 | Todd et al. |
| D362,505 | S | | 9/1995 | Fabricant |
| 5,447,492 | A | | 9/1995 | Cartmell et al. |
| 5,456,660 | A | | 10/1995 | Reich et al. |
| 5,480,377 | A | | 1/1996 | Cartmell et al. |
| 5,497,788 | A | | 3/1996 | Inman et al. |
| D369,907 | S | | 5/1996 | Sayovitz et al. |
| D370,127 | S | | 5/1996 | Bonaddio et al. |
| 5,527,293 | A | | 6/1996 | Zamierowski |
| D372,098 | S | | 7/1996 | Lattin et al. |
| 5,538,500 | A | | 7/1996 | Peterson |
| D372,978 | S | * | 8/1996 | Harvey ..... D24/133 |
| 5,549,584 | A | | 8/1996 | Gross |
| 5,562,107 | A | | 10/1996 | Lavender et al. |
| 5,579,765 | A | | 12/1996 | Cox et al. |
| 5,599,289 | A | | 2/1997 | Castellana |
| 5,603,946 | A | | 2/1997 | Constantine |
| 5,636,643 | A | | 6/1997 | Argenta et al. |
| 5,637,080 | A | | 6/1997 | Geng |
| 5,645,081 | A | | 7/1997 | Argenta et al. |
| D382,343 | S | | 8/1997 | Wandell et al. |
| 5,662,599 | A | | 9/1997 | Reich et al. |
| D384,745 | S | | 10/1997 | Lattin et al. |
| D385,038 | S | | 10/1997 | Shultz |
| 5,678,564 | A | | 10/1997 | Lawrence et al. |
| 5,701,917 | A | | 12/1997 | Khouri |
| 5,702,356 | A | | 12/1997 | Hathman |
| D389,581 | S | | 1/1998 | Fein |
| 5,704,905 | A | | 1/1998 | Jensen et al. |
| 5,713,384 | A | | 2/1998 | Roach et al. |
| 5,795,584 | A | | 8/1998 | Totakura et al. |
| 5,827,213 | A | | 10/1998 | Jensen |
| 5,840,052 | A | | 11/1998 | Johns |
| 5,843,025 | A | | 12/1998 | Shaari |
| 5,897,541 | A | | 4/1999 | Uitenbroek et al. |
| 5,911,222 | A | | 6/1999 | Lawrence et al. |
| 5,998,694 | A | | 12/1999 | Jensen et al. |
| 6,011,194 | A | | 1/2000 | Buglino et al. |
| 6,040,493 | A | | 3/2000 | Cooke et al. |
| D424,699 | S | | 5/2000 | Allen |
| 6,071,267 | A | | 6/2000 | Zamierowski |
| 6,075,177 | A | | 6/2000 | Bahia et al. |
| 6,124,520 | A | | 9/2000 | Roberts |
| 6,124,521 | A | | 9/2000 | Roberts |
| 6,142,982 | A | | 11/2000 | Hunt et al. |
| 6,297,423 | B1 | | 10/2001 | Schoenfeldt et al. |
| 6,345,623 | B1 | | 2/2002 | Heaton et al. |
| 6,362,390 | B1 | | 3/2002 | Carlucci et al. |
| 6,458,109 | B1 | | 10/2002 | Henley et al. |
| 6,468,295 | B2 | | 10/2002 | Augustine et al. |
| 6,506,175 | B1 | | 1/2003 | Goldstein |
| 6,528,696 | B1 | | 3/2003 | Ireland |
| D477,086 | S | | 7/2003 | Tsuruda et al. |
| 6,586,653 | B2 | | 7/2003 | Graeme, III et al. |
| 6,613,953 | B1 | | 9/2003 | Altura |
| 6,626,891 | B2 | | 9/2003 | Ohmstede |
| 6,648,862 | B2 | | 11/2003 | Watson |
| 6,685,681 | B2 | | 2/2004 | Lockwood et al. |
| 6,706,940 | B2 | | 3/2004 | Worthley |
| 6,719,742 | B1 | | 4/2004 | McCormack et al. |
| 6,752,794 | B2 | | 6/2004 | Lockwood et al. |
| 6,755,807 | B2 | | 6/2004 | Risk et al. |
| 6,762,337 | B2 | | 7/2004 | Boukanov et al. |
| 6,764,459 | B1 | | 7/2004 | Donaldson |
| D495,056 | S | | 8/2004 | Watanabe |
| 6,776,769 | B2 | | 8/2004 | Smith |
| 6,787,682 | B2 | | 9/2004 | Gilman |
| D499,017 | S | * | 11/2004 | Nestenborg ..... D24/112 |
| 6,855,135 | B2 | | 2/2005 | Lockwood et al. |
| D505,067 | S | * | 5/2005 | Nestenborg ..... D24/112 |
| D506,547 | S | * | 6/2005 | Cruz ..... D24/128 |
| 6,936,037 | B2 | | 8/2005 | Bubb et al. |
| D509,299 | S | | 9/2005 | Watanabe |
| 6,951,553 | B2 | | 10/2005 | Bubb et al. |
| D515,701 | S | | 2/2006 | Horhota et al. |
| 6,998,511 | B2 | | 2/2006 | Worthley |
| 7,004,915 | B2 | | 2/2006 | Boynton et al. |
| 7,049,478 | B1 | | 5/2006 | Smith et al. |
| 7,070,584 | B2 | | 7/2006 | Johnson et al. |
| 7,108,683 | B2 | | 9/2006 | Zamierowski |
| 7,118,545 | B2 | | 10/2006 | Boyde |
| 7,195,624 | B2 | | 3/2007 | Lockwood et al. |
| 7,198,046 | B1 | | 4/2007 | Argenta |
| 7,216,651 | B2 | | 5/2007 | Argenta et al. |
| 7,279,612 | B1 | | 10/2007 | Heaton et al. |
| 7,294,751 | B2 | | 11/2007 | Propp et al. |
| 7,294,752 | B1 | | 11/2007 | Propp |
| 7,316,672 | B1 | | 1/2008 | Hunt et al. |
| 7,338,482 | B2 | | 3/2008 | Lockwood et al. |
| 7,354,426 | B2 | * | 4/2008 | Young ..... A61F 5/4405 604/403 |
| D571,922 | S | | 6/2008 | Freeland |
| 7,381,859 | B2 | | 6/2008 | Hunt et al. |
| D572,367 | S | | 7/2008 | Freeland |
| D572,824 | S | | 7/2008 | Propp |
| D572,825 | S | | 7/2008 | Freeland |
| 7,429,689 | B2 | | 9/2008 | Chen et al. |
| 7,438,705 | B2 | | 10/2008 | Karpowicz et al. |
| 7,476,205 | B2 | | 1/2009 | Erdmann |
| 7,485,112 | B2 | | 2/2009 | Karpowicz et al. |
| 7,503,910 | B2 | | 3/2009 | Adahan |
| 7,511,187 | B2 | | 3/2009 | Kelly |
| 7,531,711 | B2 | | 5/2009 | Sigurjonsson et al. |
| 7,534,927 | B2 | | 5/2009 | Lockwood |
| 7,563,940 | B2 | | 7/2009 | Kurata |
| 7,569,742 | B2 | | 8/2009 | Haggstrom et al. |
| 7,576,256 | B2 | | 8/2009 | Björnberg et al. |
| D600,354 | S | | 9/2009 | Sachi |
| 7,605,298 | B2 | | 10/2009 | Bechert et al. |
| D604,424 | S | | 11/2009 | Coubetergues |
| 7,615,036 | B2 | | 11/2009 | Joshi et al. |
| 7,622,629 | B2 | | 11/2009 | Aali |
| D605,299 | S | | 12/2009 | Iwahashi et al. |

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | | |
|---|---|---|---|---|
| 7,625,362 | B2 | 12/2009 | Boehringer et al. | |
| 7,645,269 | B2 | 1/2010 | Zamierowski | |
| D609,922 | S | 2/2010 | Bridges et al. | |
| 7,670,323 | B2 | 3/2010 | Hunt et al. | |
| 7,678,102 | B1 | 3/2010 | Heaton | |
| 7,686,785 | B2 | 3/2010 | Boehringer et al. | |
| 7,722,582 | B2 | 5/2010 | Lina et al. | |
| 7,723,561 | B2 | 5/2010 | Propp | |
| D618,810 | S | 6/2010 | Tanigawa et al. | |
| D620,122 | S | 7/2010 | Cotton | |
| D620,123 | S | 7/2010 | Igwebuike | |
| 7,749,531 | B2 | 7/2010 | Booher | |
| 7,759,537 | B2 | 7/2010 | Bishop et al. | |
| 7,759,539 | B2 | 7/2010 | Shaw et al. | |
| 7,772,582 | B2 | 8/2010 | Chen et al. | |
| 7,775,998 | B2 | 8/2010 | Riesinger | |
| 7,776,028 | B2 | 8/2010 | Miller et al. | |
| 7,779,625 | B2 | 8/2010 | Joshi et al. | |
| 7,794,438 | B2 | 9/2010 | Henley et al. | |
| D625,017 | S | 10/2010 | Iwahashi et al. | |
| D625,018 | S | 10/2010 | Smith et al. | |
| D631,166 | S | 1/2011 | Leffew et al. | |
| D631,541 | S * | 1/2011 | Min | D24/127 |
| 7,862,718 | B2 | 1/2011 | Doyen et al. | |
| 7,880,050 | B2 | 2/2011 | Robinson et al. | |
| 7,922,703 | B2 | 4/2011 | Riesinger | |
| 7,935,066 | B2 | 5/2011 | Shives et al. | |
| 7,959,624 | B2 | 6/2011 | Reisinger | |
| 7,964,766 | B2 | 6/2011 | Blott et al. | |
| 7,976,519 | B2 | 7/2011 | Bubb et al. | |
| 7,981,098 | B2 | 7/2011 | Boehringer et al. | |
| D642,594 | S | 8/2011 | Mattson et al. | |
| 7,988,673 | B2 | 8/2011 | Wright et al. | |
| 8,021,347 | B2 | 9/2011 | Vitaris et al. | |
| 8,080,702 | B2 | 12/2011 | Blott et al. | |
| 8,083,712 | B2 | 12/2011 | Biggie et al. | |
| 8,092,436 | B2 | 1/2012 | Christensen | |
| 8,133,211 | B2 | 3/2012 | Cavanaugh, II et al. | |
| 8,147,468 | B2 | 4/2012 | Barta et al. | |
| 8,148,595 | B2 | 4/2012 | Robinson et al. | |
| 8,152,785 | B2 | 4/2012 | Vitaris | |
| 8,158,844 | B2 | 4/2012 | McNeil | |
| 8,162,907 | B2 | 4/2012 | Heagle | |
| 8,168,848 | B2 | 5/2012 | Lockwood et al. | |
| 8,187,237 | B2 | 5/2012 | Seegert | |
| 8,188,331 | B2 | 5/2012 | Barta et al. | |
| 8,192,409 | B2 | 6/2012 | Hardman et al. | |
| 8,202,261 | B2 | 6/2012 | Kazala, Jr. et al. | |
| 8,212,101 | B2 | 7/2012 | Propp | |
| 8,241,261 | B2 | 8/2012 | Randolph et al. | |
| 8,246,606 | B2 | 8/2012 | Stevenson et al. | |
| 8,252,971 | B2 | 8/2012 | Aali et al. | |
| 8,267,908 | B2 | 9/2012 | Coulthard | |
| 8,298,200 | B2 | 10/2012 | Vess et al. | |
| 8,314,283 | B2 | 11/2012 | Kingsford et al. | |
| 8,328,858 | B2 | 12/2012 | Barsky et al. | |
| 8,361,043 | B2 | 1/2013 | Hu et al. | |
| 8,372,049 | B2 | 2/2013 | Jaeb et al. | |
| 8,382,731 | B2 | 2/2013 | Johannison | |
| 8,403,899 | B2 | 3/2013 | Sherman | |
| 8,404,921 | B2 | 3/2013 | Lee et al. | |
| D679,819 | S | 4/2013 | Peron | |
| D679,820 | S | 4/2013 | Peron | |
| 8,444,611 | B2 | 5/2013 | Wilkes et al. | |
| 8,506,554 | B2 | 8/2013 | Adahan | |
| 8,535,296 | B2 | 9/2013 | Blott et al. | |
| 8,540,699 | B2 | 9/2013 | Miller et al. | |
| 8,545,466 | B2 | 10/2013 | Andresen et al. | |
| 8,574,153 | B2 * | 11/2013 | Richard | A61B 17/3423 600/205 |
| D705,428 | S | 5/2014 | Cheney et al. | |
| D705,429 | S | 5/2014 | Cheney et al. | |
| 8,715,256 | B2 | 5/2014 | Greener | |
| 8,764,732 | B2 | 7/2014 | Hartwell | |
| 8,791,316 | B2 | 7/2014 | Greener | |
| 8,795,247 | B2 | 8/2014 | Bennett et al. | |
| 8,801,685 | B2 | 8/2014 | Armstrong et al. | |
| 8,808,274 | B2 | 8/2014 | Hartwell | |
| 8,814,842 | B2 | 8/2014 | Coulthard et al. | |
| D713,967 | S | 9/2014 | Adoni | |
| D714,433 | S | 9/2014 | Armstrong et al. | |
| 8,864,748 | B2 | 10/2014 | Coulthard et al. | |
| 8,905,985 | B2 | 12/2014 | Allen et al. | |
| 8,951,235 | B2 | 2/2015 | Allen et al. | |
| 9,033,942 | B2 | 5/2015 | Vess | |
| 9,050,398 | B2 | 6/2015 | Armstrong et al. | |
| 9,061,095 | B2 | 6/2015 | Adie et al. | |
| D746,435 | S | 12/2015 | Armstrong et al. | |
| 9,220,822 | B2 | 12/2015 | Hartwell et al. | |
| RE45,864 | E | 1/2016 | Peron | |
| RE46,289 | E | 1/2017 | Peron | |
| D779,432 | S * | 2/2017 | Wong | D10/97 |
| D779,664 | S * | 2/2017 | Lee | D24/133 |
| D780,316 | S * | 2/2017 | Pukall | D24/186 |
| 2001/0051178 | A1 | 12/2001 | Blatchford et al. | |
| 2002/0019602 | A1 | 2/2002 | Geng | |
| 2002/0110672 | A1 | 8/2002 | Muratore-Pallatino et al. | |
| 2002/0169405 | A1 | 11/2002 | Roberts | |
| 2003/0009122 | A1 | 1/2003 | Veras | |
| 2003/0045825 | A1 | 3/2003 | Etheredge, III | |
| 2003/0069563 | A1 | 4/2003 | Johnson | |
| 2003/0114818 | A1 | 6/2003 | Benecke et al. | |
| 2003/0180341 | A1 | 9/2003 | Gooch et al. | |
| 2003/0199800 | A1 | 10/2003 | Levin | |
| 2003/0212359 | A1 | 11/2003 | Butler | |
| 2004/0030304 | A1 | 2/2004 | Hunt et al. | |
| 2004/0078011 | A1 | 4/2004 | Stevens | |
| 2004/0106888 | A1 | 6/2004 | Lutri et al. | |
| 2004/0138602 | A1 | 7/2004 | Rossen | |
| 2004/0162512 | A1 | 8/2004 | Liedtke et al. | |
| 2004/0241214 | A1 | 12/2004 | Kirkwood et al. | |
| 2004/0243042 | A1 | 12/2004 | Lipman | |
| 2005/0015036 | A1 | 1/2005 | Lutri et al. | |
| 2006/0009744 | A1 | 1/2006 | Erdman et al. | |
| 2006/0020234 | A1 | 1/2006 | Chou et al. | |
| 2006/0079852 | A1 | 4/2006 | Bubb et al. | |
| 2006/0100586 | A1 | 5/2006 | Karpowicz | |
| 2006/0122548 | A1 | 6/2006 | Abrams | |
| 2006/0206047 | A1 | 9/2006 | Lampe et al. | |
| 2007/0003604 | A1 | 1/2007 | Jones | |
| 2007/0078467 | A1 | 4/2007 | Mullen | |
| 2007/0100308 | A1 | 5/2007 | Miyairi | |
| 2007/0282236 | A1 | 12/2007 | LaGreca | |
| 2008/0058691 | A1 | 3/2008 | Sorensen | |
| 2008/0167592 | A1 | 7/2008 | Greer | |
| 2008/0167593 | A1 | 7/2008 | Fleischmann | |
| 2009/0012501 | A1 | 1/2009 | Boehringer et al. | |
| 2009/0054855 | A1 | 2/2009 | Blott et al. | |
| 2009/0124988 | A1 | 5/2009 | Coulthard | |
| 2009/0126103 | A1 | 5/2009 | Dietrich et al. | |
| 2009/0131892 | A1 | 5/2009 | Karpowicz et al. | |
| 2009/0157016 | A1 | 6/2009 | Adahan | |
| 2009/0227935 | A1 | 9/2009 | Zanella et al. | |
| 2009/0227968 | A1 | 9/2009 | Vess | |
| 2009/0227969 | A1 | 9/2009 | Jaeb et al. | |
| 2009/0240185 | A1 | 9/2009 | Jaeb et al. | |
| 2009/0264837 | A1 | 10/2009 | Adahan | |
| 2009/0281471 | A1 | 11/2009 | Iwahashi et al. | |
| 2009/0293887 | A1 | 12/2009 | Wilkes et al. | |
| 2009/0299249 | A1 | 12/2009 | Wilkes et al. | |
| 2009/0299251 | A1 | 12/2009 | Buan | |
| 2009/0299255 | A1 | 12/2009 | Kazala, Jr. et al. | |
| 2009/0299257 | A1 | 12/2009 | Long et al. | |
| 2009/0299303 | A1 | 12/2009 | Seegert | |
| 2009/0299308 | A1 | 12/2009 | Kazala et al. | |
| 2009/0299340 | A1 | 12/2009 | Kazala et al. | |
| 2009/0299341 | A1 | 12/2009 | Kazala et al. | |
| 2009/0312728 | A1 | 12/2009 | Randolph et al. | |
| 2010/0036334 | A1 | 2/2010 | Heagle et al. | |
| 2010/0055158 | A1 | 3/2010 | Vitaris et al. | |
| 2010/0069850 | A1 | 3/2010 | Fabo | |
| 2010/0069858 | A1 | 3/2010 | Olson | |
| 2010/0069863 | A1 | 3/2010 | Olson | |
| 2010/0069885 | A1 | 3/2010 | Stevenson et al. | |

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | |
|---|---|---|---|
| 2010/0084074 | A1 | 4/2010 | McClernon et al. |
| 2010/0106120 | A1 | 4/2010 | Holm |
| 2010/0106121 | A1 | 4/2010 | Holm |
| 2010/0121286 | A1 | 5/2010 | Locke et al. |
| 2010/0122417 | A1 | 5/2010 | Vrzalik et al. |
| 2010/0125234 | A1 | 5/2010 | Smith |
| 2010/0125258 | A1 | 5/2010 | Coulthard et al. |
| 2010/0160901 | A1 | 6/2010 | Hu et al. |
| 2010/0210986 | A1 | 8/2010 | Sanders |
| 2010/0217177 | A1 | 8/2010 | Cali et al. |
| 2010/0262091 | A1 | 10/2010 | Larsson |
| 2010/0268198 | A1 | 10/2010 | Buan et al. |
| 2010/0305490 | A1 | 12/2010 | Coulthard et al. |
| 2010/0305526 | A1 | 12/2010 | Robinson et al. |
| 2010/0318052 | A1 | 12/2010 | Ha et al. |
| 2010/0324510 | A1 | 12/2010 | Andresen et al. |
| 2010/0324516 | A1 | 12/2010 | Braga et al. |
| 2011/0004172 | A1 | 1/2011 | Eckstein et al. |
| 2011/0022013 | A1 | 1/2011 | Boynton et al. |
| 2011/0052664 | A1 | 3/2011 | Tennican et al. |
| 2011/0054423 | A1 | 3/2011 | Blott et al. |
| 2011/0092927 | A1 | 4/2011 | Wilkes et al. |
| 2011/0098621 | A1 | 4/2011 | Fabo et al. |
| 2011/0106030 | A1 | 5/2011 | Scholz |
| 2011/0112492 | A1 | 5/2011 | Bharti et al. |
| 2011/0130712 | A1 | 6/2011 | Topaz |
| 2011/0137222 | A1 | 6/2011 | Masini |
| 2011/0178375 | A1 | 7/2011 | Forster |
| 2011/0218509 | A1 | 9/2011 | Dontas |
| 2011/0230849 | A1 | 9/2011 | Coulthard et al. |
| 2011/0245788 | A1 | 10/2011 | Marquez Canada |
| 2011/0247636 | A1 | 10/2011 | Pollack |
| 2012/0065664 | A1 | 3/2012 | Avitable et al. |
| 2012/0095426 | A1 | 4/2012 | Visscher et al. |
| 2012/0101465 | A1 | 4/2012 | Mcguire, Jr. |
| 2012/0123311 | A1 | 5/2012 | Weidemann-Hendrickson et al. |
| 2012/0172778 | A1 | 7/2012 | Rastegar et al. |
| 2012/0203145 | A1 | 8/2012 | Nilsson |
| 2012/0203189 | A1 | 8/2012 | Barta et al. |
| 2012/0232502 | A1 | 9/2012 | Lowing |
| 2012/0238932 | A1 | 9/2012 | Atteia et al. |
| 2012/0302976 | A1 | 11/2012 | Locke et al. |
| 2013/0030395 | A1 | 1/2013 | Croizat et al. |
| 2014/0121615 | A1 | 5/2014 | Locke et al. |
| 2014/0194835 | A1 | 7/2014 | Ehlert |
| 2014/0343520 | A1 | 11/2014 | Bennett et al. |
| 2015/0141941 | A1 | 5/2015 | Allen et al. |
| 2015/0174304 | A1 | 6/2015 | Askem et al. |
| 2016/0144084 | A1 | 5/2016 | Collinson et al. |

FOREIGN PATENT DOCUMENTS

| | | | |
|---|---|---|---|
| CN | 1874806 | A | 12/2006 |
| CN | 101600464 | | 12/2009 |
| DE | 90 17 289 | | 4/1992 |
| DE | 198 44 355 | | 4/2000 |
| EP | 0 541 251 | | 5/1993 |
| EP | 0 619 105 | A1 | 10/1994 |
| EP | 0 392 640 | | 6/1995 |
| EP | 0 441 418 | | 7/1995 |
| EP | 0 465 601 | B1 | 1/1997 |
| EP | 0 751 757 | | 1/1997 |
| EP | 0 777 504 | B1 | 10/1998 |
| EP | 0 941 726 | | 9/1999 |
| EP | 1 018 967 | | 7/2000 |
| EP | 0 865 304 | B1 | 7/2001 |
| EP | 0 853 950 | B1 | 10/2002 |
| EP | 0 708 620 | | 5/2003 |
| EP | 1 088 569 | B1 | 8/2003 |
| EP | 0 993 317 | | 9/2003 |
| EP | 1 440 667 | | 7/2004 |
| EP | 1 448 261 | | 8/2004 |
| EP | 1 452 156 | | 9/2004 |
| EP | 1 100 574 | | 2/2005 |
| EP | 0 688 189 | | 6/2005 |
| EP | 1 284 777 | | 4/2006 |
| EP | 0 982 015 | | 8/2006 |
| EP | 0 620 720 | B1 | 11/2006 |
| EP | 1 171 065 | | 3/2007 |
| EP | 1 227 853 | | 1/2008 |
| EP | 1 476 217 | | 3/2008 |
| EP | 1 233 808 | | 7/2008 |
| EP | 1 977 776 | | 10/2008 |
| EP | 2 098 257 | A1 | 9/2009 |
| EP | 1 513 478 | | 12/2009 |
| EP | 2 127 690 | | 12/2009 |
| EP | 1 905 465 | | 1/2010 |
| EP | 2 127 690 | | 3/2010 |
| EP | 2 161 011 | | 3/2010 |
| EP | 2 172 164 | | 4/2010 |
| EP | 2 319 550 | | 5/2011 |
| EP | 2 335 749 | A1 | 6/2011 |
| EP | 1 578 477 | | 9/2011 |
| EP | 2 366 721 | | 9/2011 |
| EP | 1 487 389 | | 10/2011 |
| EP | 1 169 071 | | 2/2012 |
| EP | 2 529 766 | | 12/2012 |
| EP | 2 413 858 | | 1/2013 |
| EP | 2 545 946 | | 3/2013 |
| EP | 2 659 915 | | 11/2013 |
| EP | 2 628 500 | | 5/2014 |
| EP | 1 339 366 | | 6/2014 |
| EP | 2 051 675 | | 6/2014 |
| GB | 2 099 306 | | 12/1982 |
| GB | 2 307 180 | | 6/2000 |
| GB | 2 336 546 | | 6/2000 |
| GB | 2 344 531 | | 7/2000 |
| GB | 2 435 422 | | 8/2007 |
| WO | WO 94/23677 | | 10/1994 |
| WO | WO 95/04511 | | 2/1995 |
| WO | WO 95/14451 | | 6/1995 |
| WO | WO 96/21410 | | 7/1996 |
| WO | WO 97/11658 | | 4/1997 |
| WO | WO 99/01173 | | 1/1999 |
| WO | WO 99/39671 | | 8/1999 |
| WO | WO 00/07653 | | 2/2000 |
| WO | WO 00/42957 | | 7/2000 |
| WO | WO 01/85248 | | 11/2001 |
| WO | WO 02/17840 | | 3/2002 |
| WO | WO 02/26180 | | 4/2002 |
| WO | WO 02/38096 | | 5/2002 |
| WO | WO 02/076379 | | 10/2002 |
| WO | WO 03/057070 | | 7/2003 |
| WO | WO 03/086232 | | 10/2003 |
| WO | WO 04/073566 | | 9/2004 |
| WO | WO 05/016179 | | 2/2005 |
| WO | WO 05/061025 | | 7/2005 |
| WO | WO 06/052338 | | 5/2006 |
| WO | WO 06/052745 | | 5/2006 |
| WO | WO 07/006306 | | 1/2007 |
| WO | WO 07/013049 | | 2/2007 |
| WO | WO 07/013064 | | 2/2007 |
| WO | WO 07/016590 | | 2/2007 |
| WO | WO 07/019038 | | 2/2007 |
| WO | WO 07/085396 | | 8/2007 |
| WO | WO 07/092397 | | 8/2007 |
| WO | WO 07/095180 | | 8/2007 |
| WO | WO 07/106590 | | 9/2007 |
| WO | WO 07/106591 | | 9/2007 |
| WO | WO 08/008032 | | 1/2008 |
| WO | WO 08/012278 | | 1/2008 |
| WO | WO 08/027449 | | 3/2008 |
| WO | WO 08/043067 | | 4/2008 |
| WO | WO 08/049277 | | 5/2008 |
| WO | WO 08/100437 | | 8/2008 |
| WO | WO 08/100440 | | 8/2008 |
| WO | WO 08/100446 | | 8/2008 |
| WO | WO 08/131895 | | 11/2008 |
| WO | WO 08/135997 | | 11/2008 |
| WO | WO 08/141470 | | 11/2008 |
| WO | WO 09/002260 | | 12/2008 |
| WO | WO 09/019227 | | 2/2009 |
| WO | WO 09/019229 | | 2/2009 |
| WO | WO 09/146441 | | 3/2009 |

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

| | | |
|---|---|---|
| WO | WO 09/068665 | 6/2009 |
| WO | WO 09/086580 | 7/2009 |
| WO | WO 09/088925 | 7/2009 |
| WO | WO 09/103031 | 8/2009 |
| WO | WO 09/111655 | 9/2009 |
| WO | WO 09/111657 | 9/2009 |
| WO | WO 09/137194 | 11/2009 |
| WO | WO 09/140376 | 11/2009 |
| WO | WO 09/145894 | 12/2009 |
| WO | WO 09/158125 | 12/2009 |
| WO | WO 09/158126 | 12/2009 |
| WO | WO 09/158127 | 12/2009 |
| WO | WO 09/158129 | 12/2009 |
| WO | WO 10/014177 | 2/2010 |
| WO | WO 10/033271 | 3/2010 |
| WO | WO 10/033272 | 3/2010 |
| WO | WO 10/033574 | 3/2010 |
| WO | WO 10/033769 | 3/2010 |
| WO | WO 10/035017 | 4/2010 |
| WO | WO 10/051073 | 5/2010 |
| WO | WO 10/059712 | 5/2010 |
| WO | WO 10/059730 | 5/2010 |
| WO | WO 10/072395 | 7/2010 |
| WO | WO 10/078166 | 7/2010 |
| WO | WO 10/082872 | 7/2010 |
| WO | WO 10/089448 | 8/2010 |
| WO | WO 10/139926 | 12/2010 |
| WO | WO 10/147533 | 12/2010 |
| WO | WO 10/147592 | 12/2010 |
| WO | WO 11/019476 | 2/2011 |
| WO | WO 11/023275 | 3/2011 |
| WO | WO 11/023650 | 3/2011 |
| WO | WO 11/049562 | 4/2011 |
| WO | WO 11/087871 | 7/2011 |
| WO | WO 11/100851 | 8/2011 |
| WO | WO 11/115908 | 9/2011 |
| WO | WO 11/128651 | 10/2011 |
| WO | WO 11/135285 | 11/2011 |
| WO | WO 12/009370 | 1/2012 |
| WO | WO 12/074512 | 6/2012 |
| WO | WO 12/142002 | 10/2012 |
| WO | WO 12/146656 | 11/2012 |
| WO | WO 12/150235 | 11/2012 |
| WO | WO 12/166428 | 12/2012 |
| WO | WO 13/016239 | 1/2013 |
| WO | WO 13/019438 | 2/2013 |
| WO | WO 13/043972 | 3/2013 |
| WO | WO 13/123005 | 8/2013 |
| WO | WO 14/043238 | 9/2014 |
| WO | WO 14/158526 | 10/2014 |

OTHER PUBLICATIONS

European Extended Search Report, re EPO Application No. 09839009.9, dated Feb. 23, 2016.
International Invitation to Pay and Partial Search Report re PCT/IB2013/001469, dated Nov. 25, 2013.
Allevyn Educational Booklet, Smith & Nephew Medical Ltd, Apr. 2014.
Allevyn Wound Dressings Pamphlet, Smith & Nephew, Inc., 2008.
International Search Report and Written Opinion for International Application No. PCT/IB2013/001469, dated Feb. 7, 2014.
KCI Licensing, PREVENA™ Incision Management System, Jan. 2010.
KCI Licensing, PREVENA™ Incision Management System Patient Guide, Jan. 2010.
KCU, PREVENA™ Incision Management System Clinician Guide, Jan. 2010.
Smith & Nephew, "PICO Simplified Negative Pressure Wound Therapy", sales brochure in 2 pages, Jul. 2011, Australia and New Zealand.
Design U.S. Appl. No. 29/551,890.
Design U.S. Appl. No. 29/548,270.
Teder et al., "Continuous Wound Irrigation in the Pig," Journal of Investigative Surgery, vol. 3, 1990, pp. 399-407.

* cited by examiner

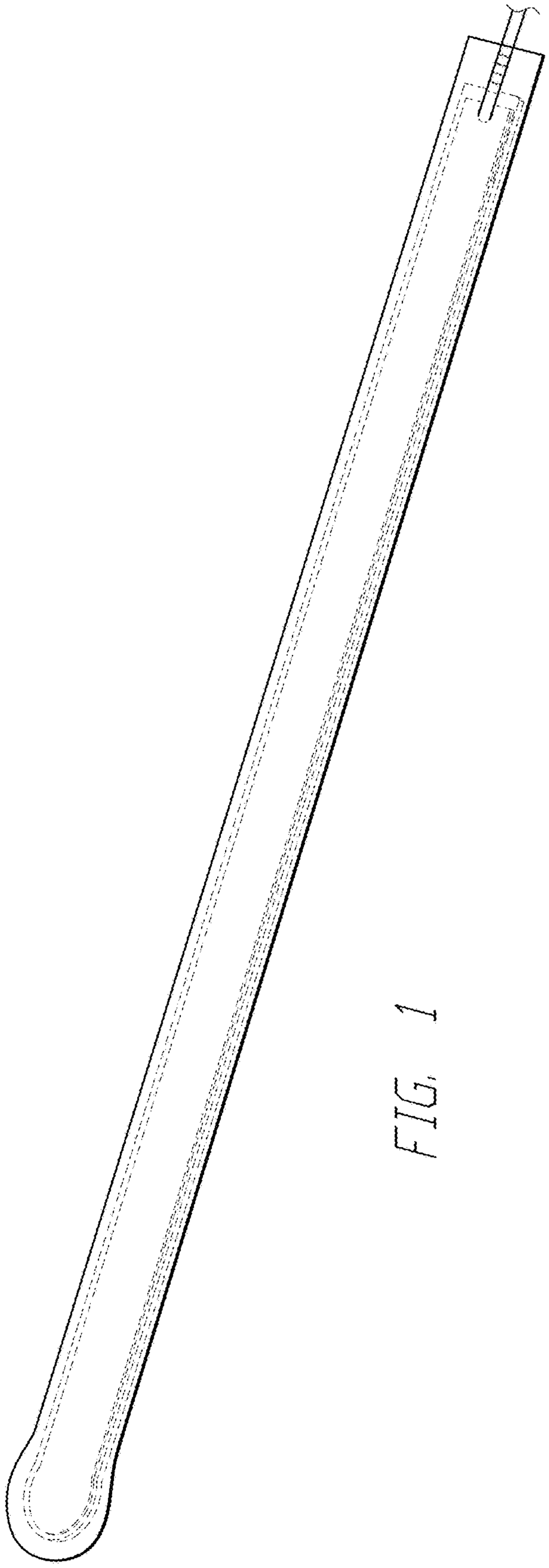


FIG. 1

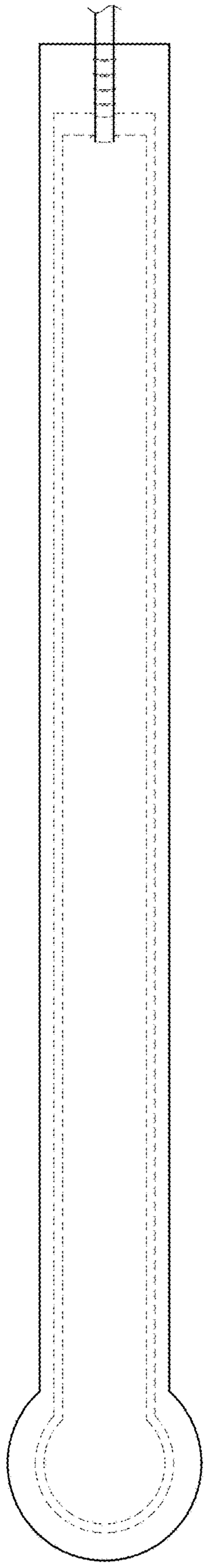


FIG. 2

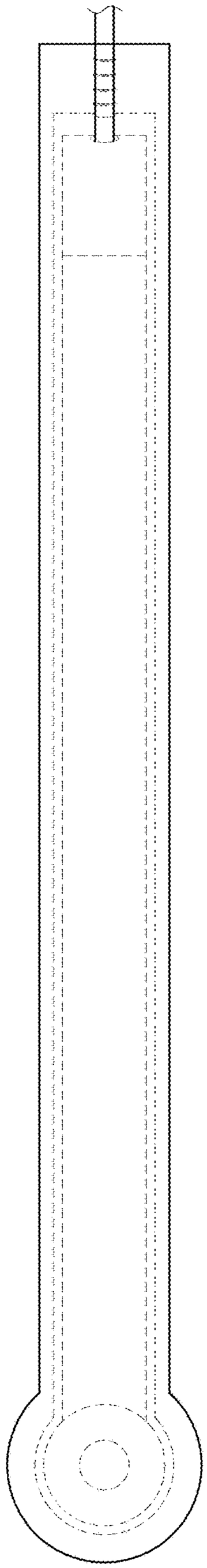


FIG. 3

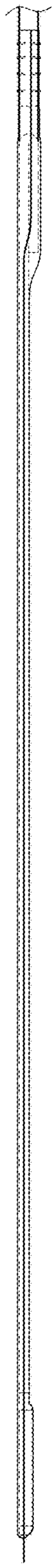


FIG. 4

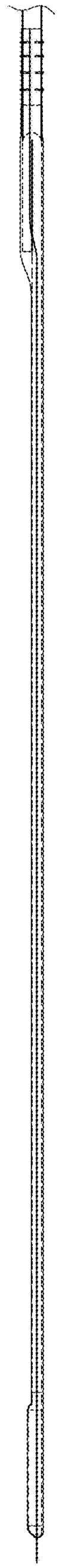


FIG. 5

FIG. 6

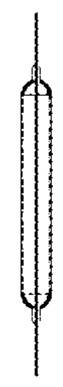
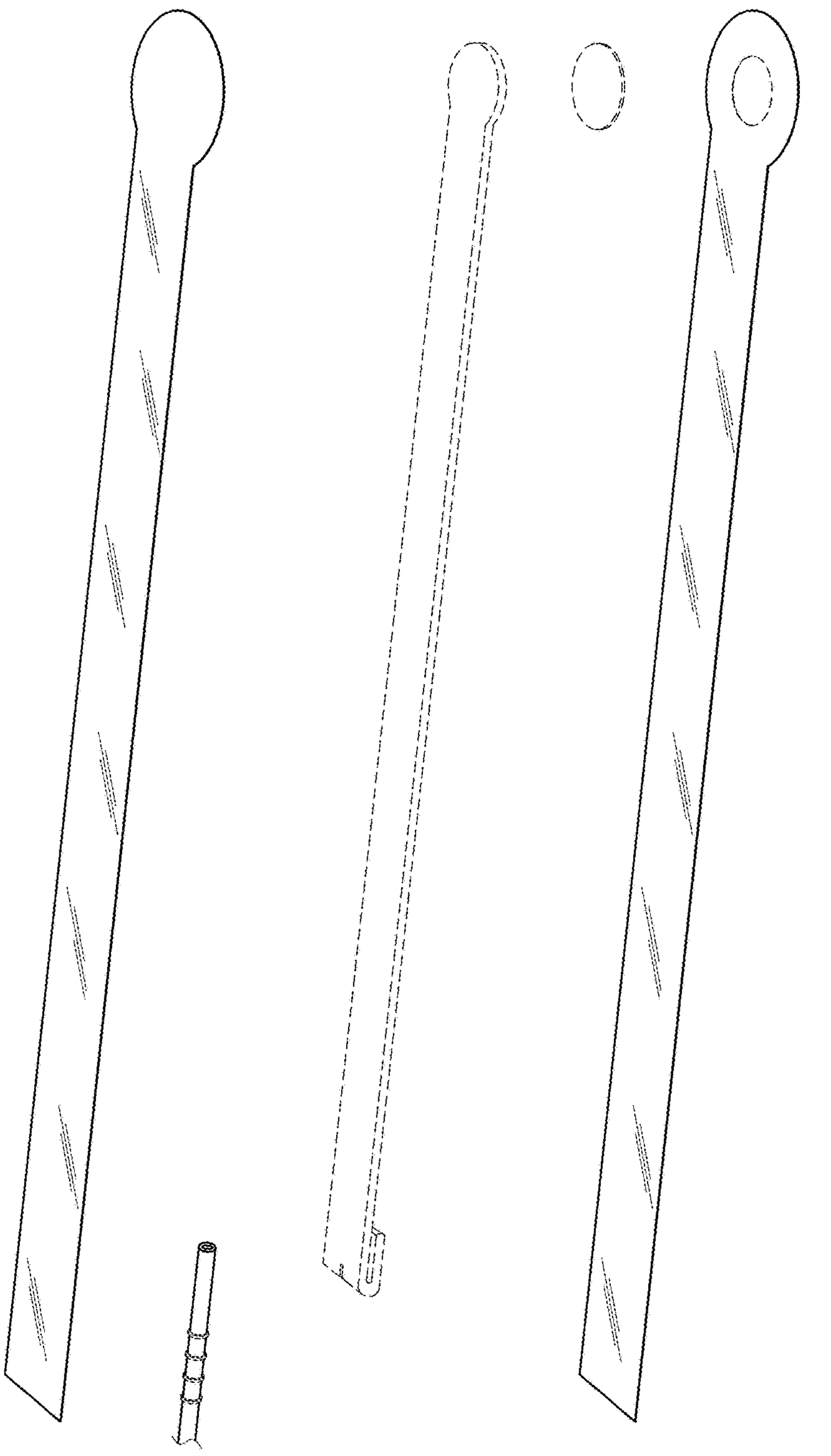


FIG. 7

FIG. 8



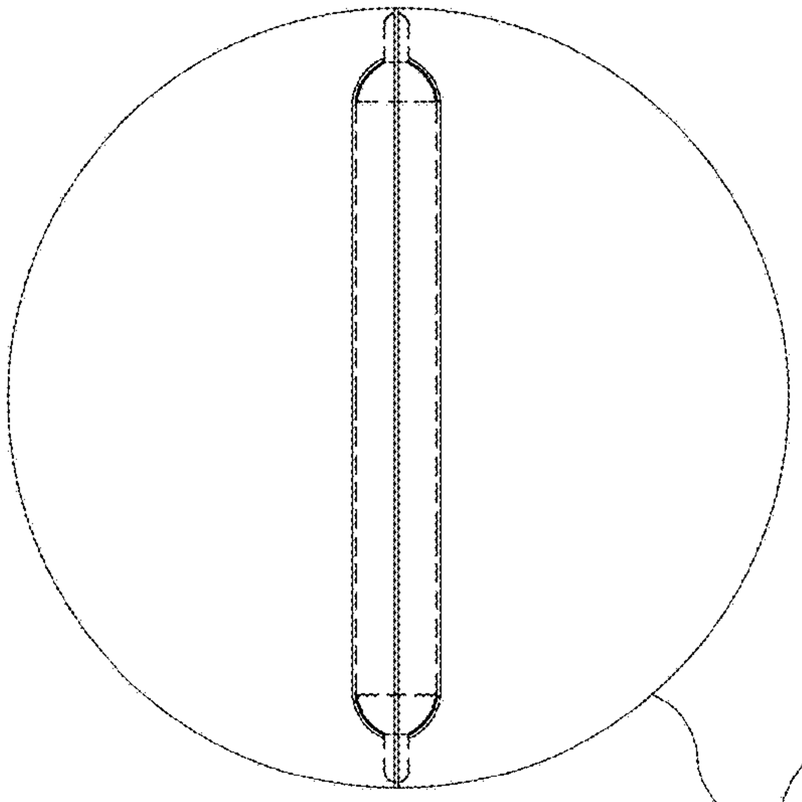


FIG. 10

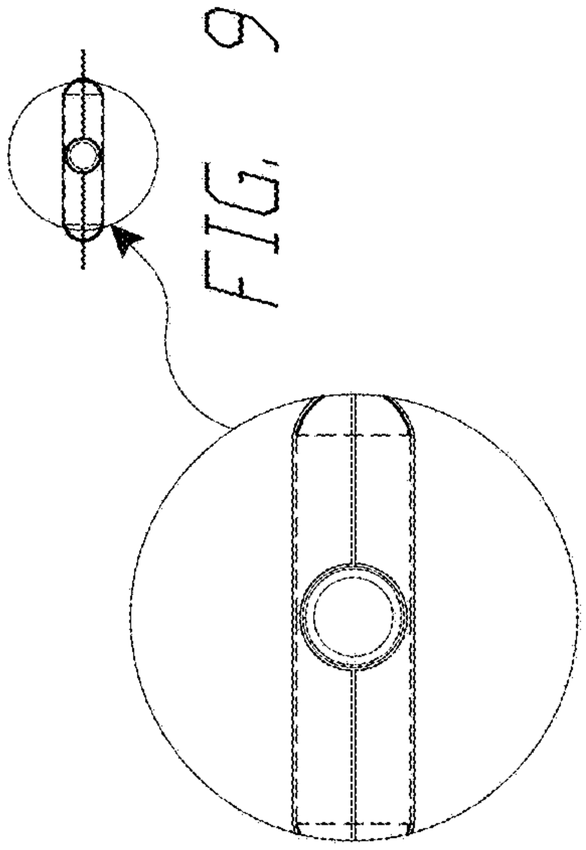


FIG. 9