



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁶ : A61B 17/12, A61F 6/20, B29B 11/04, A61D 1/06</p>	<p>A3</p>	<p>(11) International Publication Number: WO 99/47048</p> <p>(43) International Publication Date: 23 September 1999 (23.09.99)</p>
<p>(21) International Application Number: PCT/US99/05972</p> <p>(22) International Filing Date: 18 March 1999 (18.03.99)</p> <p>(30) Priority Data: 09/044,483 19 March 1998 (19.03.98) US</p> <p>(71) Applicant: ENSURG, INC. [US/US]; 1244 Beaver Ruin Road #200, Norcross, GA 30093 (US).</p> <p>(72) Inventor: MEARS, Eric, L.; 3430 Highgate Hills Drive, Duluth, GA 30097 (US).</p> <p>(74) Agents: RHINES, Steven, P. et al.; Sidley & Austin, Suite 3400, 717 North Harwood, Dallas, TX 75201 (US).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 18 November 1999 (18.11.99)</p>	
<p>(54) Title: LIGATING STRUCTURE HAVING GREATER STRETCHABILITY, GREATER SHELF LIFE, AND GREATER LIGATING CHARACTERISTICS AND METHOD OF MANUFACTURE</p>		
<p>(57) Abstract</p>		
<p>A ligating band (10) is formed so as to have a pre-stress compression along its inner periphery and a pre-stress tension along its outer periphery (12) at a free state, wherein all the material of the band is at a substantially equal tension when the band is subject to full circumferential expansion. In a free state, the inner periphery can buckle, at least partially filling an inner perimeter defined by the inner periphery with a plurality of material folds.</p>	<p>The diagram shows a circular cross-section of a ligating band. The outer edge is labeled 12, and the inner edge is labeled 10. In the center, there is a star-shaped buckle structure labeled 14, which is formed by multiple folds of the material meeting at a central point.</p>	

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/05972

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B17/12 A61F6/20 B29B11/04 A61D1/06

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 6 A61B A61F B29B A61D

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 860 746 A (YOON INBAE) 29 August 1989 (1989-08-29) column 2, line 57 -column 3, line 20; figure 4	1-12
A	US 4 167 188 A (LAY DECEASED COY L ET AL) 11 September 1979 (1979-09-11) column 1, line 58 -column 2, line 14	1-12
X	abstract column 2, line 3-43 column 3, line 6-18 figures 3,4	15
A	US 5 032 335 A (WILSON DAVID) 16 July 1991 (1991-07-16) column 6, line 67 -column 7, line 23; figures 2,3	35-38
	- / - -	

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

24 September 1999

Date of mailing of the international search report

04.10.99

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INTERNATIONAL SEARCH REPORT

Intern: 1al Application No

PCT/US 99/05972

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 649 226 A (MONTGOMERY, A.Y.) page 1, line 46-59 page 2, line 69-78 figures 8,9	15
A	----- US 1 683 119 A (ZIEGLER, C.E.) 4 September 1928 (1928-09-04) page 1, line 81-89; figure 7 -----	13,14,16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/05972

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 17, 18-33, 34
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. Claims Nos.: 17, 34
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 99/05972

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17,34

Independent Claim 17 attempts to define some features by the result to be achieved by these features (i.e. formed so that...) making this claim completely unclear so that no meaningful search can be performed. Independent Claim 34 concerning a method for making an elastic band gives only an idea which product features should be present after the method has been performed rather than defining at least one method step which leads to the product defined. Therefore, Claim 34 is completely unclear with regard to the method steps.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 99/05972

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-12,34-40

An elastic medical ligating band having an inner diameter and an outer diameter formed so that in a fully circumferentially expanded state all the material of the band is in substantially uniform tension and method for making.

2. Claims: 13-16

An elastic medical ligating band formed so that the inner diameter region is substantially filled with material folds or inwardly protruding material.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/05972

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4860746 A	29-08-1989	US 4548201 A US 4794927 A	22-10-1985 03-01-1989

US 4167188 A	11-09-1979	NONE	

US 5032335 A	16-07-1991	DE 69014887 D DE 69014887 T EP 0482082 A JP 5500780 T WO 9100887 A	19-01-1995 06-07-1995 29-04-1992 18-02-1993 24-01-1991

GB 649226 A		NONE	

US 1683119 A	04-09-1928	NONE	
