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(12) **United States Design Patent**
Adams

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(54) **DOUBLE STRAND BI-DIRECTIONAL BARB SUTURE WITH SINGLE COATING SHIELD**

Adhere Less to Barbed Monofilament Than Braided Sutures in a Contaminated Wound Model, Feb. 2013; 471(2): 665-671.

(Continued)

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

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(21) Appl. No.: **29/623,765**

(57) **CLAIM**

(22) Filed: **Oct. 26, 2017**

The ornamental design for a double strand bi-directional barb suture with single coating shield, as shown and described.

DESCRIPTION

Related U.S. Application Data

(63) Continuation-in-part of application No. 15/096,496, filed on Apr. 12, 2016, now abandoned.

FIG. 1 is a side elevation view of a double strand bi-directional barb suture with single coating shield in accordance with the invention, showing the double strand bi-directional barb suture with single coating shield in a first condition of use wherein one strand is shown in a coated condition and the other strand is shown in a non-coated condition;

(51) **LOC (12) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/145**

FIG. 2 is an enlarged, partial side elevation of a portion of the double strand bi-directional barb suture with single coating shield taken from FIG. 1;

(58) **Field of Classification Search**
USPC D24/145, 146, 147, 148, 133, 155, 169

(Continued)

FIG. 3 is another enlarged partial side view of a portion of the double strand bi-directional barb suture with single coating shield taken from FIG. 1;

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,720,055 A * 3/1973 De Mestral D02G 3/22
57/248
4,622,777 A * 11/1986 Greene, Jr. A01G 9/022
47/67

(Continued)

FIG. 4 is another enlarged partial perspective view of the double strand bi-directional barb suture with single coating shield, showing the portion indicated by area 4-4 in FIG. 1; FIG. 5 is a cross-section view thereof, showing the double strand bi-directional barb suture with single coating shield in a second condition of use wherein one strand is shown in a coated condition and the other strand is shown in a non-coated condition, taken along line 5-5 of FIG. 3; and, FIG. 6 is another cross-section view thereof, showing the double strand bi-directional barb suture with single coating shield in a condition of use wherein both strands are in a non-coated condition.

FOREIGN PATENT DOCUMENTS

CA 2777345 A1 11/2012
EP 2338421 B1 11/2012

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The double strand bi-directional barb suture with single coating shield contains a repeating pattern of barbs, wherein the pattern of barbs repeats along the length of the suture filaments forming a double-stranded suture. Before and

OTHER PUBLICATIONS

John R. Fowler, MD, Tiffany A. Perkins, BS, Bettina A. Buttaro, PhD, and Allan L. Truant, PhD, Clin Ortho Relat Res. Bacteria

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during use, the double-stranded suture contains one strand with coating and one strand without coating. Once the suture is installed, the coating on the one strand dissolves.

The broken lines shown in FIGS. 1 and 2 illustrate the environment of the double strand bi-directional barb suture with single coating shield and form no part of the claimed design.

1 Claim, 2 Drawing Sheets

(58) Field of Classification Search

CPC A61B 17/06166; A61B 17/0401; A61B 2017/00526; A61B 2017/06176; A61B 17/06066; A61B 17/04; A61B 2017/0417; A61B 2017/0608; A61B 17/0469; A61B 17/0483; A61B 17/0485; A61B 17/062; A61B 2017/0046; A61F 2002/075; B21G 1/08

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

8,062,363	B2	11/2011	Hirpara et al.	
8,353,931	B2	1/2013	Stopek et al.	
8,562,644	B2	10/2013	Yuan et al.	
D734,459	S *	7/2015	Arnett	D24/145
D745,964	S *	12/2015	Ponganis	D24/133
D745,965	S *	12/2015	Anderson	D24/133
D746,449	S *	12/2015	Ponganis	D24/133
D746,450	S *	12/2015	Anderson	D24/133
D749,726	S *	2/2016	Ponganis	D24/133
9,307,983	B2 *	4/2016	Stopek	A61B 17/06166
D844,140	S *	3/2019	Adams	D24/145
2003/0074023	A1 *	4/2003	Kaplan	A61B 17/00234 606/228
2007/0005110	A1 *	1/2007	Collier	A61B 17/06166 606/228
2009/0210006	A1 *	8/2009	Cohen	A61B 17/06166 606/232
2012/0277793	A1 *	11/2012	Marczyk	A61B 17/06166 606/228

2013/0066369	A1	3/2013	Collier et al.	
2013/0165971	A1	6/2013	Leung et al.	
2015/0272720	A1 *	10/2015	Marks	A61B 17/00008 623/13.2
2016/0045636	A1 *	2/2016	Rizk	A61L 17/105 606/230
2016/0120543	A1 *	5/2016	Nawrocki	A61B 17/06166 606/230
2016/0278769	A1 *	9/2016	Kim	D02J 3/10
2017/0189016	A1 *	7/2017	Gross	A61B 17/06166
2017/0281160	A1 *	10/2017	Lin	A61B 17/06166
2017/0319195	A1 *	11/2017	Denham	A61B 17/0401
2017/0319203	A1 *	11/2017	Cohen	A61B 17/06166
2017/0360543	A1 *	12/2017	Rosenblatt	A61B 17/06
2018/0103944	A9 *	4/2018	Sauer	A61B 17/0401
2018/0116648	A1 *	5/2018	Kim	A61B 17/06109
2018/0125472	A1 *	5/2018	Dreyfuss	A61B 17/0401
2018/0140291	A1 *	5/2018	Dreyfuss	A61B 17/0401
2019/0119838	A1 *	4/2019	Pilgeram	D04C 3/48

FOREIGN PATENT DOCUMENTS

EP	2447040	A3	12/2013
JP	61171998		2/1986

OTHER PUBLICATIONS

James A. Greenberg, MD, US National Library of Medicine National Institute of Health, The Use of Barbed Sutures in Obstetrics and Gynecology, v.3(3); Summer 2010.

Dr. R.K. Mishra, Barbed Suture in Laparoscopic Surgery, Feb. 9, 2016.

Angiotech Puerto Rico, Inc., Quill™ Knotless Tissue-Closure Device Product Catalog, 2007-2013.

Angiotech Pharmaceuticals, Inc. Quill™ SRS Product Catalog, 2009.

Covidien, V-Loc™ Wound Closure Devices Product Overview, 2011.

Covidien, V-Loc™ Wound Closure Device (the secure advantage), 2013.

DePuy Mitek, a Johnson & Johnson Company, MicroFix Absorbable QuickAnchor® Plus, Massachusetts, 2005.

* cited by examiner

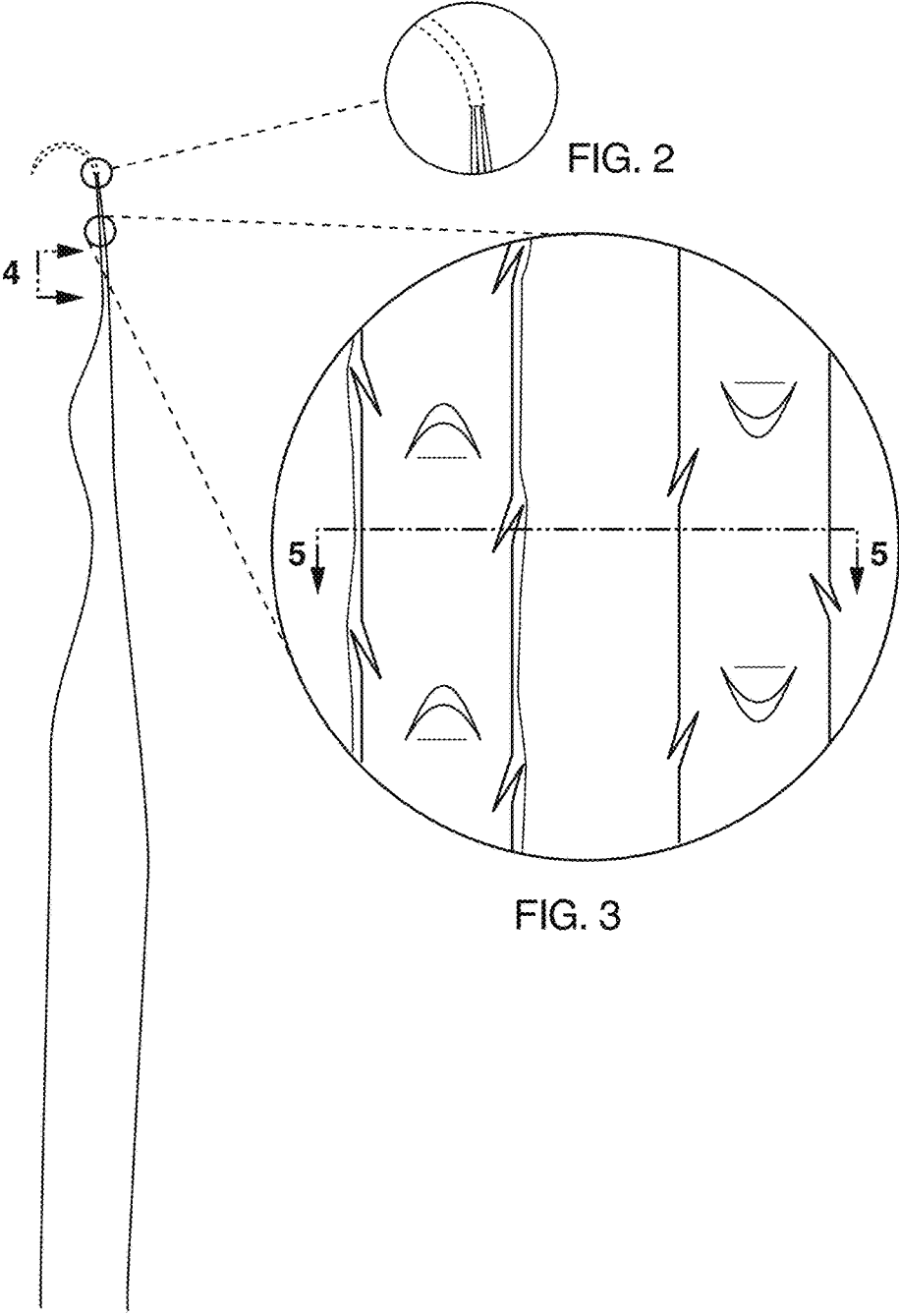


FIG. 1

FIG. 3

FIG. 2

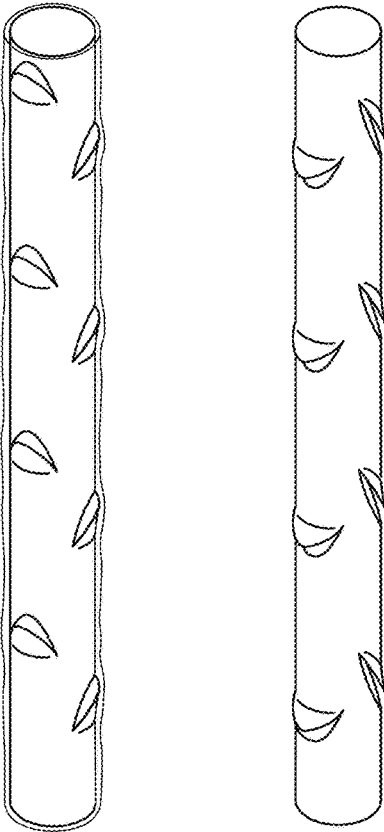


FIG. 4

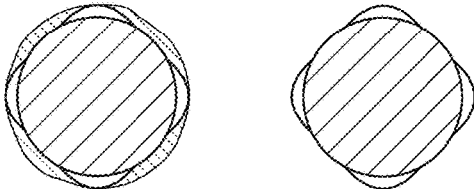


FIG. 5

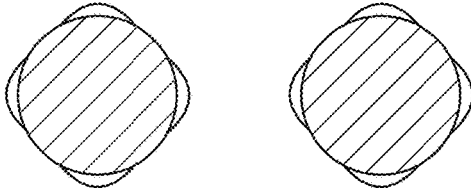


FIG. 6