



US00D976402S

(12) **United States Design Patent**
Perkins et al.

(10) **Patent No.:** **US D976,402 S**
(45) **Date of Patent:** **** Jan. 24, 2023**

(54) **BIDIRECTIONAL BARBED SUTURE**

9,017,404 B2 4/2015 Champagne et al.
9,539,084 B2 1/2017 Champagne et al.
9,872,679 B2 1/2018 Perkins et al.

(71) Applicant: **Cilag GmbH International**, Zug (CH)

(Continued)

(72) Inventors: **Jason T. Perkins**, Easton, PA (US);
Matthew D. Putnam, Minneapolis, MN
(US); **Mark T. Mooney**, Duluth, GA
(US); **John Killion**, Flemington, NJ
(US); **David W. Overaker**, Glen
Gardner, NJ (US)

FOREIGN PATENT DOCUMENTS

EP 1221909 3/2007
WO 2017051409 3/2017

OTHER PUBLICATIONS

(73) Assignee: **Cilag GmbH International**, Zug (CH)

Volker Schoffl et al., Tendon Injuries of the Hand, World Journal of Orthopedics, Jun. 18, 2012, pp. 62-69, vol. 3, Issue 6.

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

Primary Examiner — Wan Laymon

(21) Appl. No.: **29/794,146**

(57) **CLAIM**

(22) Filed: **Jun. 10, 2021**

The ornamental design for a bidirectional barbed suture, as shown and described.

(51) **LOC (14) Cl.** **24-02**

DESCRIPTION

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

USPC **D24/145**

(58) **Field of Classification Search**

USPC D24/145

CPC A61B 17/06166; A61B 17/0469; A61B

2017/06176; A61B 2017/06171; A61B

2017/06057; A61B 2017/06185; A61B

2017/06028; A61B 2017/0472; A61B

2017/0461

See application file for complete search history.

The present design application is related to commonly assigned U.S. patent application Ser. No. 17/344,363, filed on Jun. 10, 2021, entitled "Systems, Devices and Methods for Repairing Tendons and Ligaments", the disclosure of which is hereby incorporated by reference herein.

FIG. 1 is a perspective view of a bidirectional barbed suture, showing our new design;

FIG. 2 is a top view of the bidirectional barbed suture shown in FIG. 1;

FIG. 3 is a bottom view of the bidirectional barbed suture shown in FIG. 1;

FIG. 4 is a left side view of the bidirectional barbed suture shown in FIG. 1; and,

FIG. 5 is a right side view of the bidirectional barbed suture shown in FIG. 1.

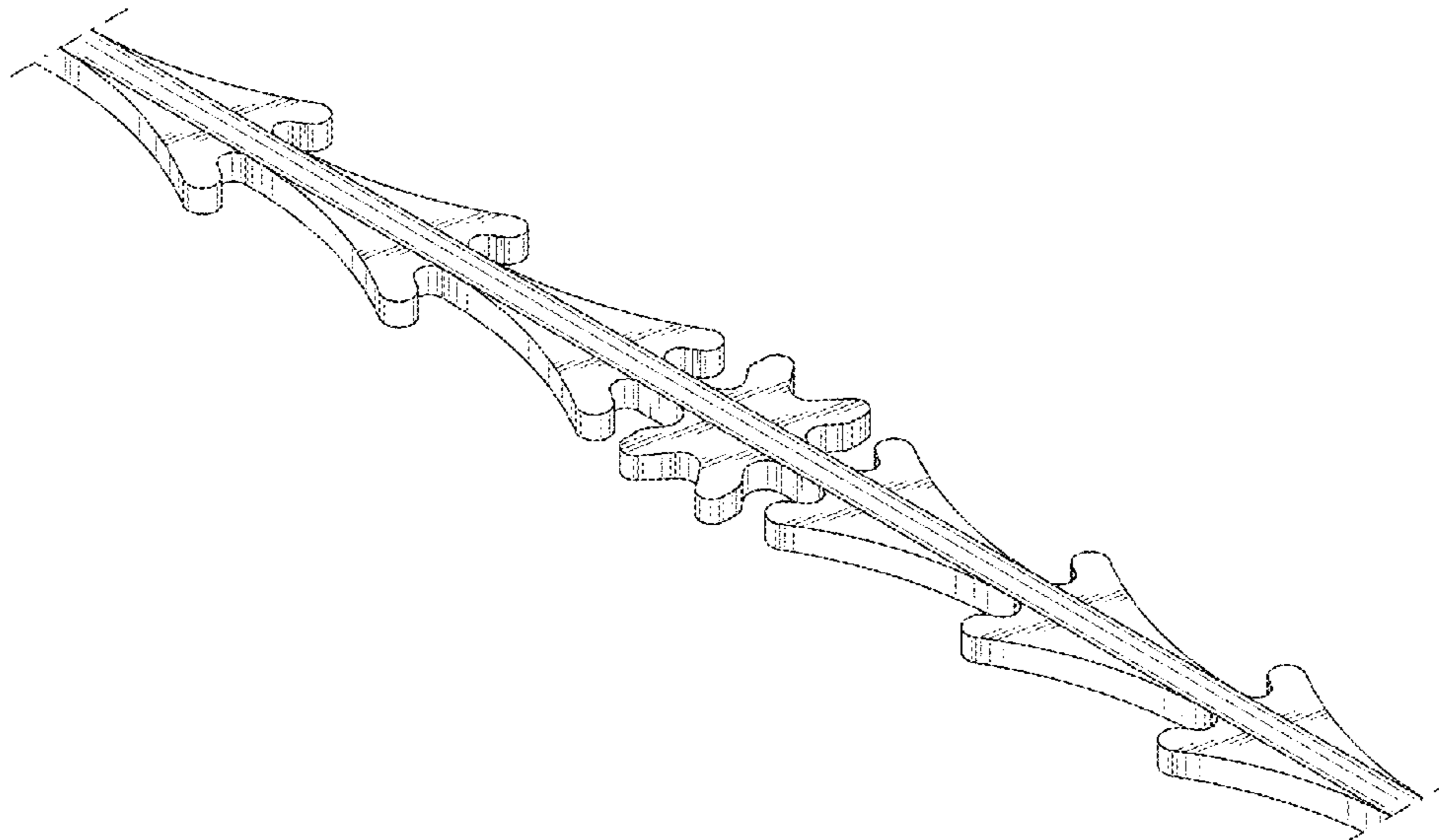
The bidirectional barbed suture is shown with a symbolic break in its length at each end. The appearance of any portion of the article beyond the breaks form no part of the claim.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,984,241 B2 1/2006 Lubbers et al.
8,062,363 B2 11/2011 Hirpara et al.
8,273,105 B2 * 9/2012 Cohen A61B 17/06166
606/228
8,409,225 B2 4/2013 Bull et al.
D690,810 S * 10/2013 Nawrocki D24/145
8,679,158 B2 3/2014 Leung et al.
8,690,914 B2 4/2014 Leung et al.
RE45,426 E 3/2015 Buncke

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D905,243 S * 12/2020 Kim D24/145
D905,244 S * 12/2020 Kim D24/145
D936,829 S * 11/2021 Ryu D24/145
2007/0224237 A1 9/2007 Hwang et al.
2013/0079815 A1* 3/2013 Hasan A61B 17/06166
606/228
2014/0081321 A1* 3/2014 Nawrocki A61B 17/06166
606/228
2015/0173737 A1 6/2015 Champagne et al.
2017/0035553 A1 2/2017 Champagne et al.
2017/0224338 A1* 8/2017 Sung A61B 17/06166
2018/0014828 A1 1/2018 Fonte et al.
2021/0386423 A1* 12/2021 Dalessandro A61B 17/06166

* cited by examiner

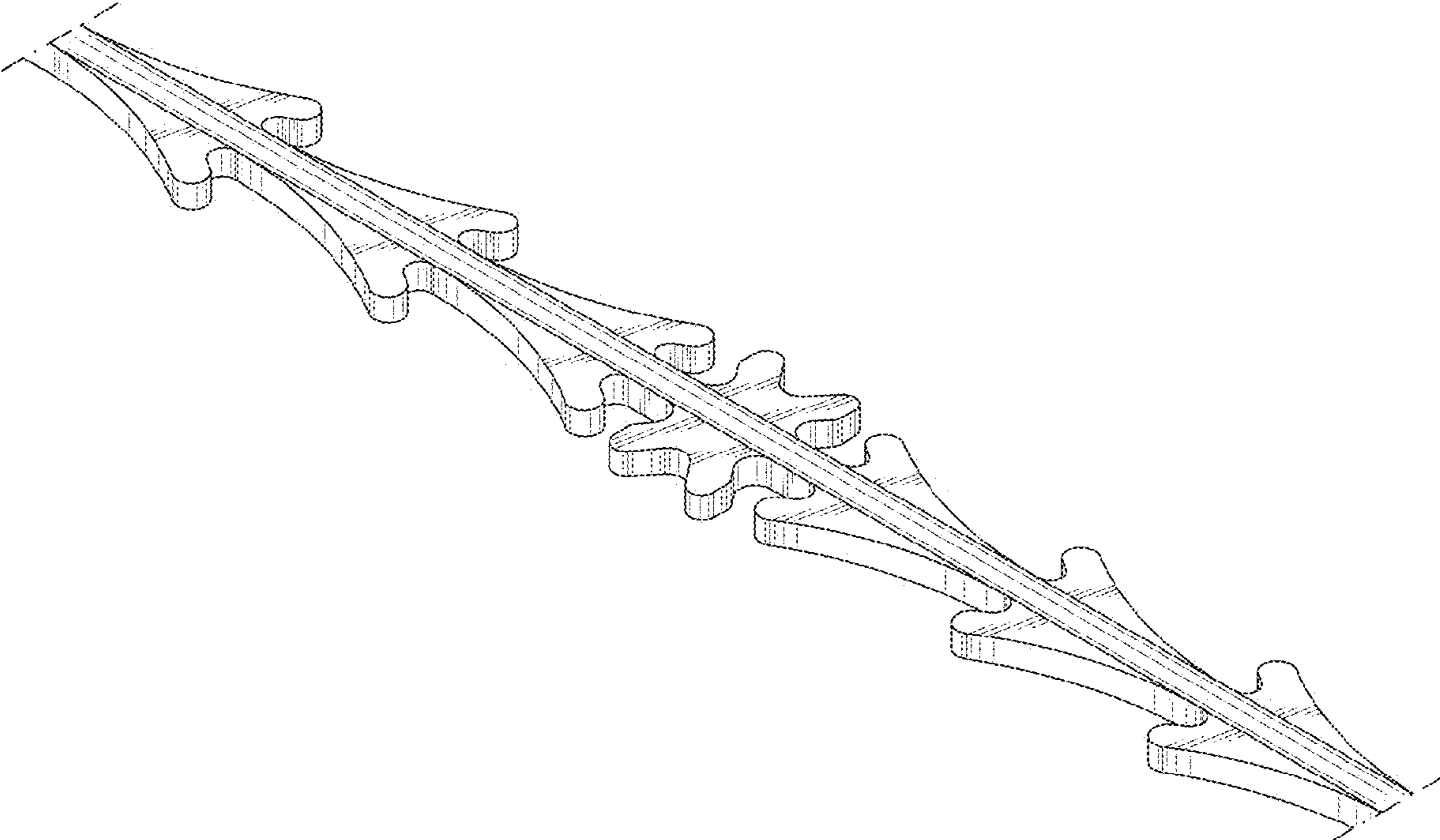


FIG. 1

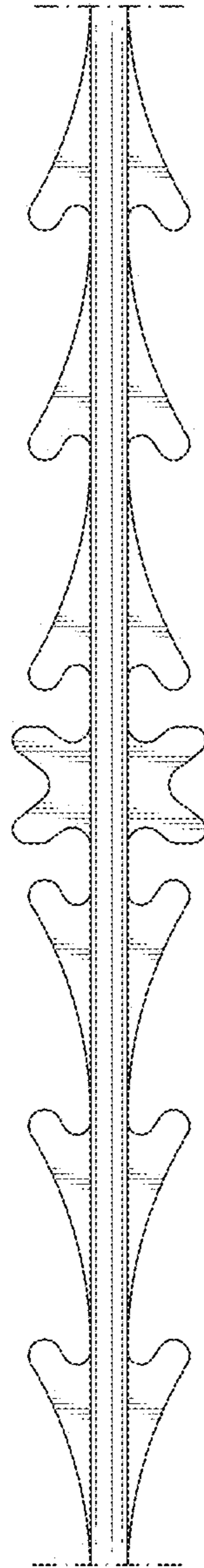


FIG. 2

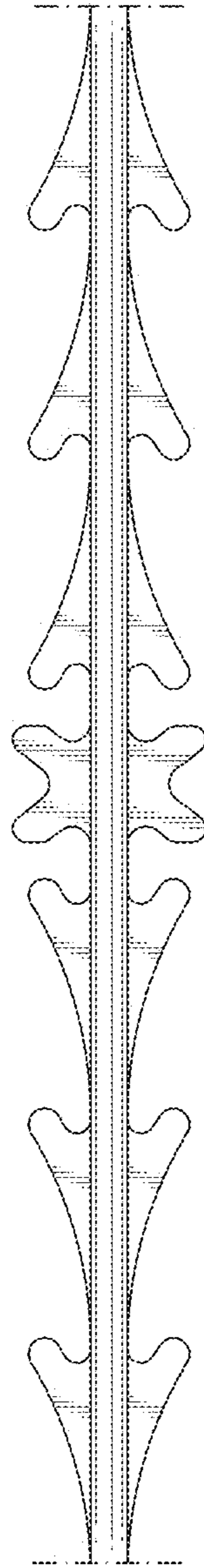


FIG. 3

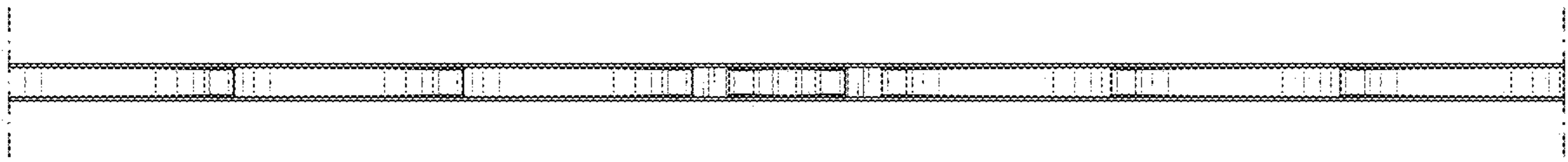


FIG. 4

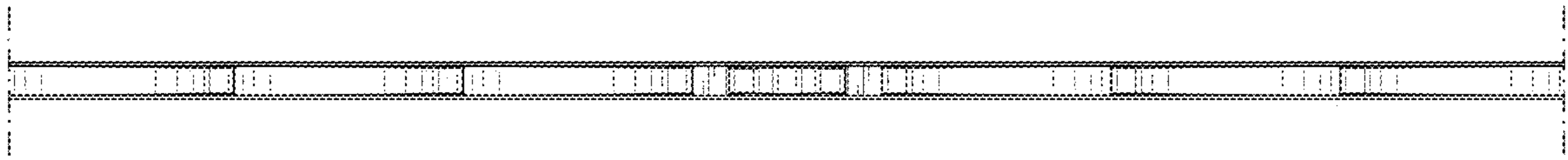


FIG. 5