



US00D934872S

(12) **United States Design Patent** (10) **Patent No.:** **US D934,872 S**
Natsume et al. (45) **Date of Patent:** **** Nov. 2, 2021**

(54) **MOBILE COMPUTING SUPPORT SYSTEM HAVING AN ILLUMINATION REGION**

(71) Applicant: **Magic Leap, Inc.**, Plantation, FL (US)

(72) Inventors: **Shigeru Natsume**, Weston, FL (US); **Timothy Michael Stutts**, Oakland Park, FL (US); **James M. Powderly**, Ft. Lauderdale, FL (US); **Bradley Fraser**, Miami Beach, FL (US); **Haney Awad**, Ft. Lauderdale, FL (US); **Savannah Niles**, Ft. Lauderdale, FL (US); **Isioma Osagbemwenorue Azu**, Ft. Lauderdale, FL (US)

(73) Assignee: **Magic Leap, Inc.**, Plantation, FL (US)

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

(21) Appl. No.: **29/663,745**

(22) Filed: **Sep. 18, 2018**

(51) **LOC (13) Cl.** **08-07**

(52) **U.S. Cl.**
USPC **D14/447**

(58) **Field of Classification Search**
USPC D14/447, 432, 434, 439, 440, 451, 452, D14/457, 239; D8/363, 373, 380; D6/406.3, 406.4, 406.5, 406.6; D12/415
CPC A47B 21/04; A47B 2097/006; A47B 2097/005; A47B 2023/049; A45C 2011/002; A45C 2011/003; F16M 2200/00; F16M 13/00

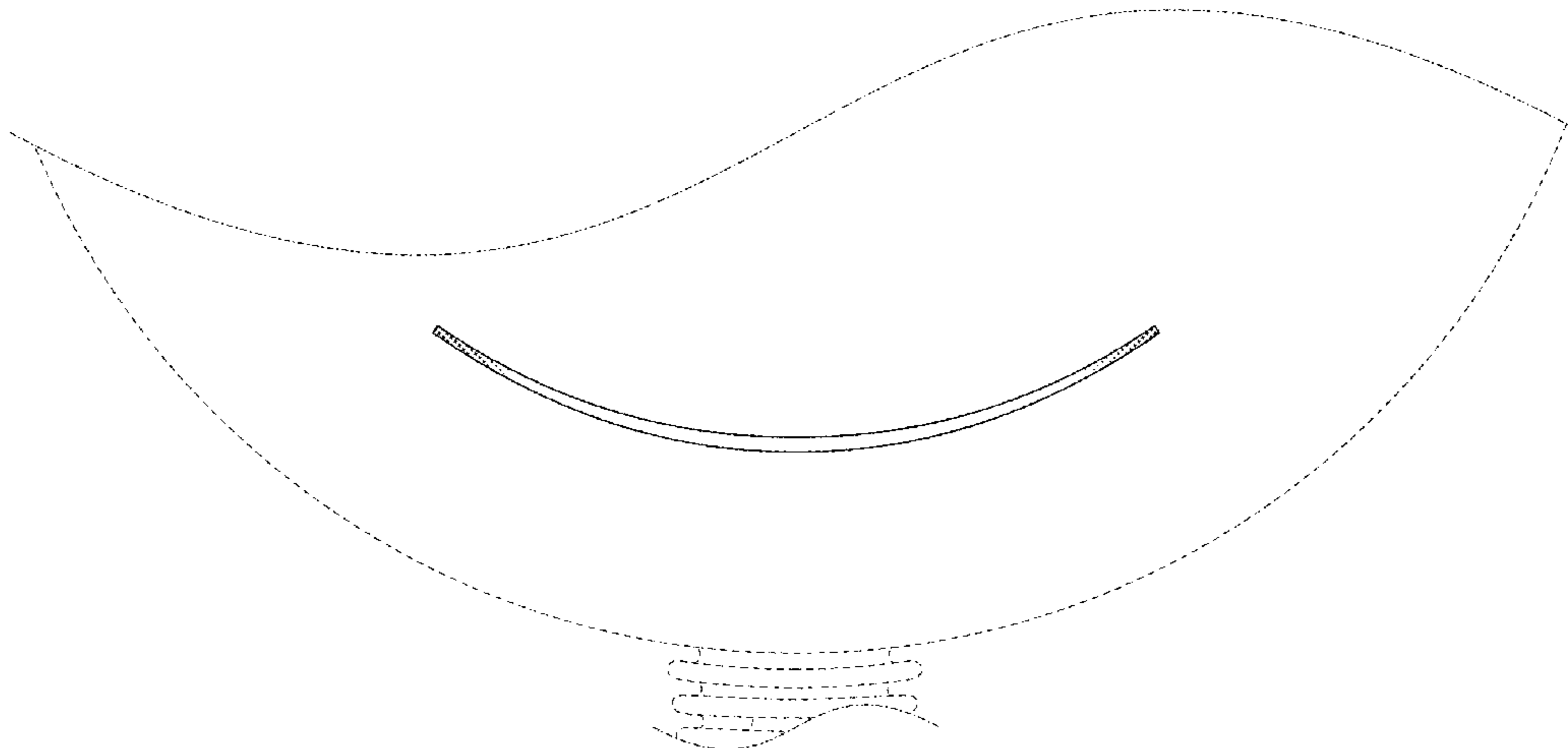
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D222,388 S * 10/1971 Meldrum D10/62
D279,797 S * 7/1985 Brunetto D10/64
D436,599 S * 1/2001 Greene D14/490
D485,820 S * 1/2004 Murakami D14/168
6,850,221 B1 2/2005 Tickle
D514,570 S 2/2006 Ohta
D519,504 S 4/2006 Tagliabue et al.

D520,448 S * 5/2006 Lodato D13/110
D563,480 S 3/2008 Blaseflug et al.
D567,287 S 4/2008 Del Castillo et al.
D586,215 S 2/2009 Gonzalez et al.
D607,323 S * 1/2010 Bruno D9/434
D612,234 S 3/2010 Westemeyer
D621,514 S * 8/2010 Wightman D24/186
D644,122 S * 8/2011 Kight D9/707
D653,205 S * 1/2012 Baker D13/108
D666,480 S 9/2012 Peacock et al.
D671,924 S 12/2012 Choi et al.
D673,528 S 1/2013 Trotsky
D675,644 S 2/2013 Frost et al.
D684,158 S 6/2013 Derry et al.
D688,252 S 8/2013 Paul
D692,898 S * 11/2013 Luijben D14/447
D693,353 S 11/2013 Shu et al.
D719,959 S 12/2014 Vogel
D720,845 S * 1/2015 Kang D24/110.1
D722,603 S 2/2015 Lay et al.
D724,596 S * 3/2015 Sirichai D14/440
D725,660 S 3/2015 Trotsky
D735,210 S 7/2015 Kim et al.
9,081,426 B2 7/2015 Armstrong
D737,264 S 8/2015 Shamsadov
9,215,293 B2 12/2015 Miller
D748,639 S 2/2016 Khodapanah et al.
D749,044 S 2/2016 Huang
D749,596 S * 2/2016 Khodapanah D14/447
D752,054 S 3/2016 Baumann et al.
D752,529 S 3/2016 Loretan et al.
D753,095 S 4/2016 Jou et al.
D754,736 S * 4/2016 Moon D14/492
D755,797 S 5/2016 Liu
D756,366 S 5/2016 Floersch et al.
9,348,143 B2 5/2016 Gao et al.
D759,657 S 7/2016 Kujawski et al.
D765,084 S 8/2016 Akana et al.
9,417,452 B2 8/2016 Schowengerdt et al.
D768,635 S 10/2016 Due
9,470,906 B2 10/2016 Kaji et al.
D772,739 S * 11/2016 Browning D10/74
D773,325 S 12/2016 Browning et al.
D775,658 S * 1/2017 Luo D14/488
D776,667 S 1/2017 Fujioka
D777,778 S * 1/2017 Park D14/488
9,547,174 B2 1/2017 Gao et al.
9,671,566 B2 6/2017 Abovitz et al.
D794,288 S 8/2017 Beers et al.
9,740,006 B2 8/2017 Gao
D797,749 S * 9/2017 Awad D14/447
9,791,700 B2 10/2017 Schowengerdt et al.
D805,084 S 12/2017 Aryeh



D805,734	S	12/2017	Fisher et al.	
9,851,563	B2	12/2017	Gao et al.	
9,857,591	B2	1/2018	Welch et al.	
9,874,749	B2	1/2018	Bradski	
D810,753	S *	2/2018	Sakata	D14/485
D832,276	S *	10/2018	Miles	D14/451
D837,258	S *	1/2019	Lee	D14/489
D849,752	S	5/2019	Huebner et al.	
D849,753	S	5/2019	Divine, Jr.	
10,484,522	B1 *	11/2019	McHatet	H04B 1/3888
D873,806	S *	1/2020	Lee	D14/230
D877,066	S *	3/2020	Zhang	D13/108
D888,066	S *	6/2020	Wang	D14/451
2006/0028436	A1	2/2006	Armstrong	
2007/0081123	A1	4/2007	Lewis	
2012/0127062	A1	5/2012	Bar-Zeev et al.	
2012/0162549	A1	6/2012	Gao et al.	
2013/0082922	A1	4/2013	Miller	
2013/0117377	A1	5/2013	Miller	
2013/0125027	A1	5/2013	Abovitz	
2013/0208234	A1	8/2013	Lewis	
2013/0242262	A1	9/2013	Lewis	
2014/0071539	A1	3/2014	Gao	
2014/0177023	A1	6/2014	Gao et al.	
2014/0218468	A1	8/2014	Gao et al.	
2014/0267420	A1	9/2014	Schowengerdt	
2014/0306866	A1	10/2014	Miller et al.	
2015/0016777	A1	1/2015	Abovitz et al.	
2015/0103306	A1	4/2015	Kaji et al.	
2015/0178939	A1	6/2015	Bradski et al.	
2015/0205126	A1	7/2015	Schowengerdt	
2015/0222883	A1	8/2015	Welch	
2015/0222884	A1	8/2015	Cheng	
2015/0268415	A1	9/2015	Schowengerdt et al.	
2015/0302652	A1	10/2015	Miller et al.	
2015/0309263	A2	10/2015	Abovitz et al.	
2015/0326570	A1	11/2015	Publicover et al.	
2015/0346490	A1	12/2015	TeKolste et al.	
2015/0346495	A1	12/2015	Welch et al.	
2016/0011419	A1	1/2016	Gao	
2016/0026253	A1	1/2016	Bradski et al.	
2019/0111855	A1	4/2019	Aloe et al.	

OTHER PUBLICATIONS

Design U.S. Appl. No. 29/663,752 to Natsume et al., filed Sep. 18, 2018.

Design U.S. Appl. No. 29/663,748 to Natsume et al., filed Sep. 18, 2018.

Design U.S. Appl. No. 29/663,746 to Natsume et al., filed Sep. 18, 2018.

Design U.S. Appl. No. 29/657,667 to Natsume et al., filed Jul. 24, 2018.

Design U.S. Appl. No. 29/657,652 to Natsume et al., filed Jul. 24, 2018.

Design U.S. Appl. No. 29/657,674 to Natsume et al., filed Jul. 24, 2018.

U.S. Appl. No. 15/992,032 to Aguirre et al., filed May 29, 2018.

ARToolKit: <https://web.archive.org/web/20051013062315/http://www.hitl.washington.edu:80/artoolkit/documentation/hardware.htm>, archived Oct. 13, 2005.

Azuma, “a Survey of Augmented Reality,” *Teleoperators and Virtual Environments* 6, 4 (Aug. 1997), pp. 355-385. <https://web.archive.org/web/20010604100006/http://www.cs.unc.edu/~azuma/ARpresence.pdf>.

Azuma, “Predictive Tracking for Augmented Realty,” TR95-007, Department of Computer Science, UNC—Chapel Hill, NC, Feb. 1995.

Bimber, et al., “Spatial Augmented Reality—Merging Real and Virtual Worlds,” 2005 <https://web.media.mit.edu/~raskar/book/BimberRaskarAugmentedRealityBook.pdf>.

Jacob, “Eye Tracking in Advanced Interface Design,” *Human-Computer Interaction Lab Naval Research Laboratory, Washington, D.C. / paper/ in Virtual Environments and Advanced Interface Design*, ed. by W. Barfield and T.A. Furness, pp. 258-288, Oxford University Press, New York (1995).

Tanriverdi and Jacob, “Interacting With Eye Movements in Virtual Environments,” Department of Electrical Engineering and Computer Science, Tufts University, Medford, MA—paper/Proc. ACM CHI 2000 Human Factors in Computing Systems Conference, pp. 265-272, Addison-Wesley/ACM Press (2000).

* cited by examiner

Primary Examiner — Angela J Lee

(74) Attorney, Agent, or Firm — Knobbe, Martens, Olson & Bear, LLP

(57) CLAIM

The ornamental design for a mobile computing support system having an illumination region, as shown and described.

DESCRIPTION

FIG. 1 is view of the front of a mobile computing support system having an illumination region in an illuminated state showing a first image in a sequence for the illumination region of our design;

FIG. 2 is front view showing a second image in the sequence thereof;

FIG. 3 is front view showing a third image in the sequence thereof;

FIG. 4 is front view showing a fourth image in the sequence thereof;

FIG. 5 is front view showing a fifth image in the sequence thereof;

FIG. 6 is front view showing a sixth image in the sequence thereof;

FIG. 7 is front view showing a seventh image in the sequence thereof;

FIG. 8 is front view showing an eighth image in the sequence thereof;

FIG. 9 is front view showing a ninth image in the sequence thereof;

FIG. 10 is front view showing a tenth image in the sequence thereof; and,

FIG. 11 is front view showing an eleventh image in the sequence thereof.

The dash-dash lines in FIGS. 1-11 depicting various optional components of a mobile computing support system are included for illustrating environmental structure and form no part of the claimed design. The dot-dash lines in FIGS. 1-11 are used to show a region broken away and form no part of the claimed design.

The appearance of the illumination region sequentially transitions between the images shown for the sequence in FIGS. 1-11. The process or period in which one image transitions to another in the sequence forms no part of the claimed design.

The difference in shading in the sequence indicates a contrast in the illumination of the sequence and does not depict any particular color, texture, or material.

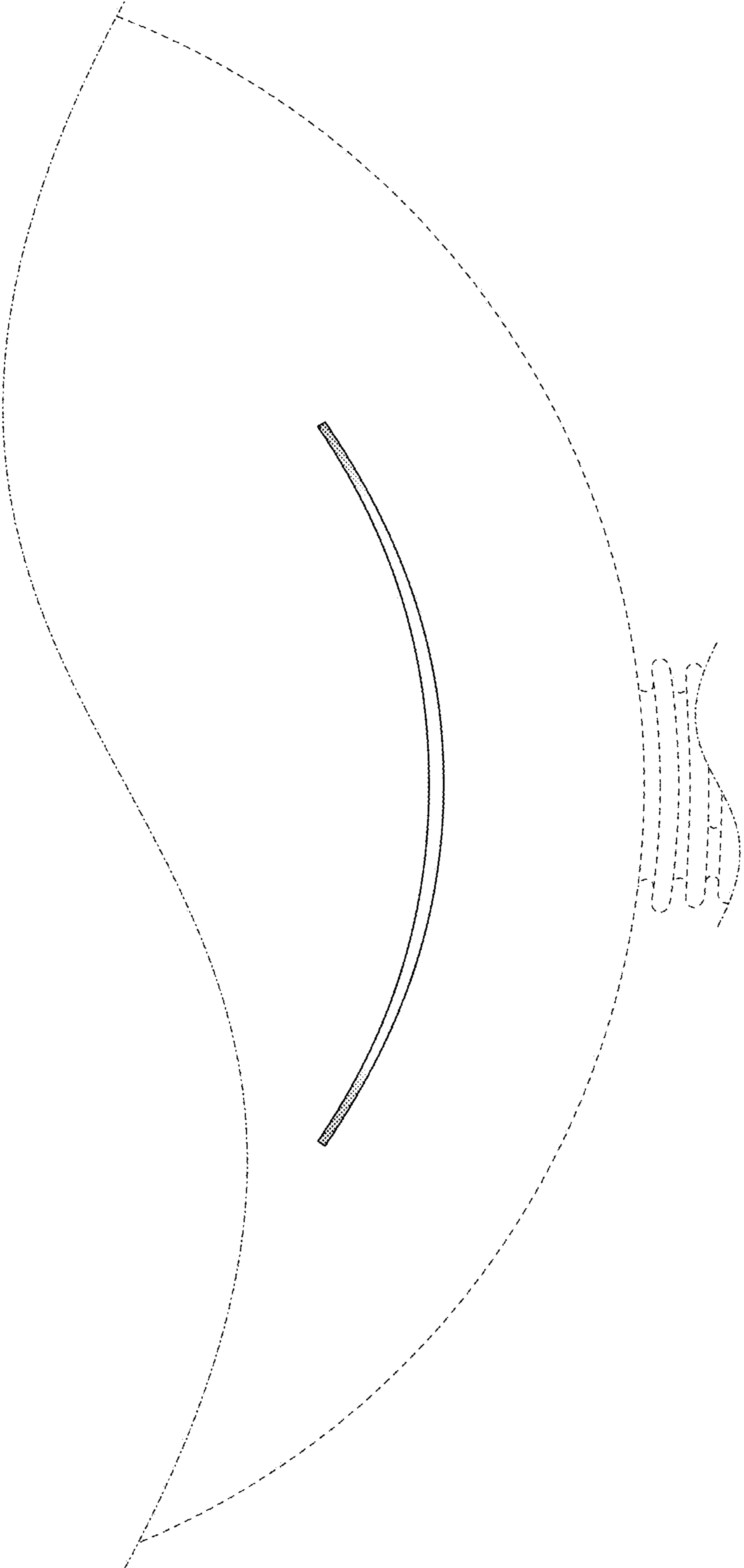


FIG. 1

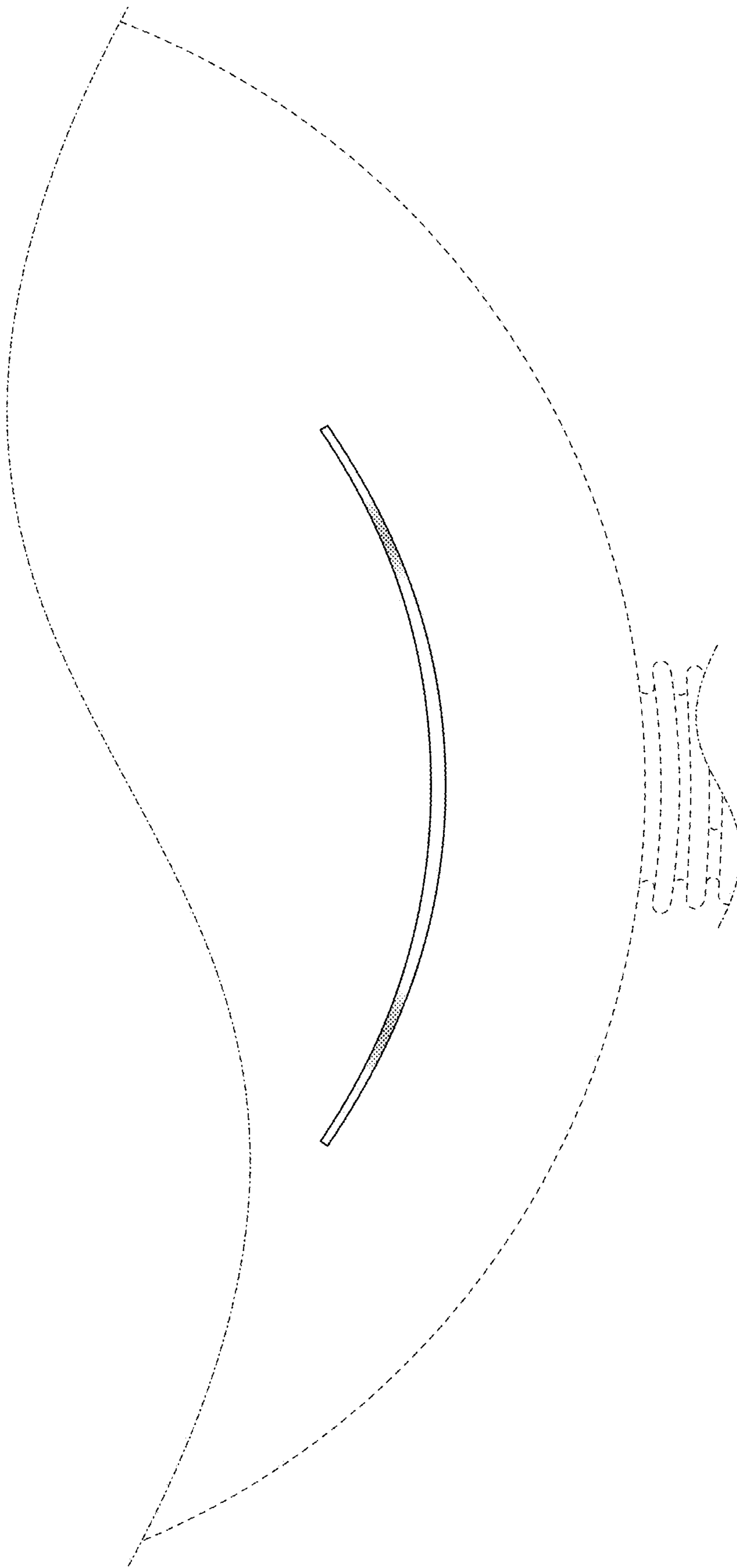


FIG. 2

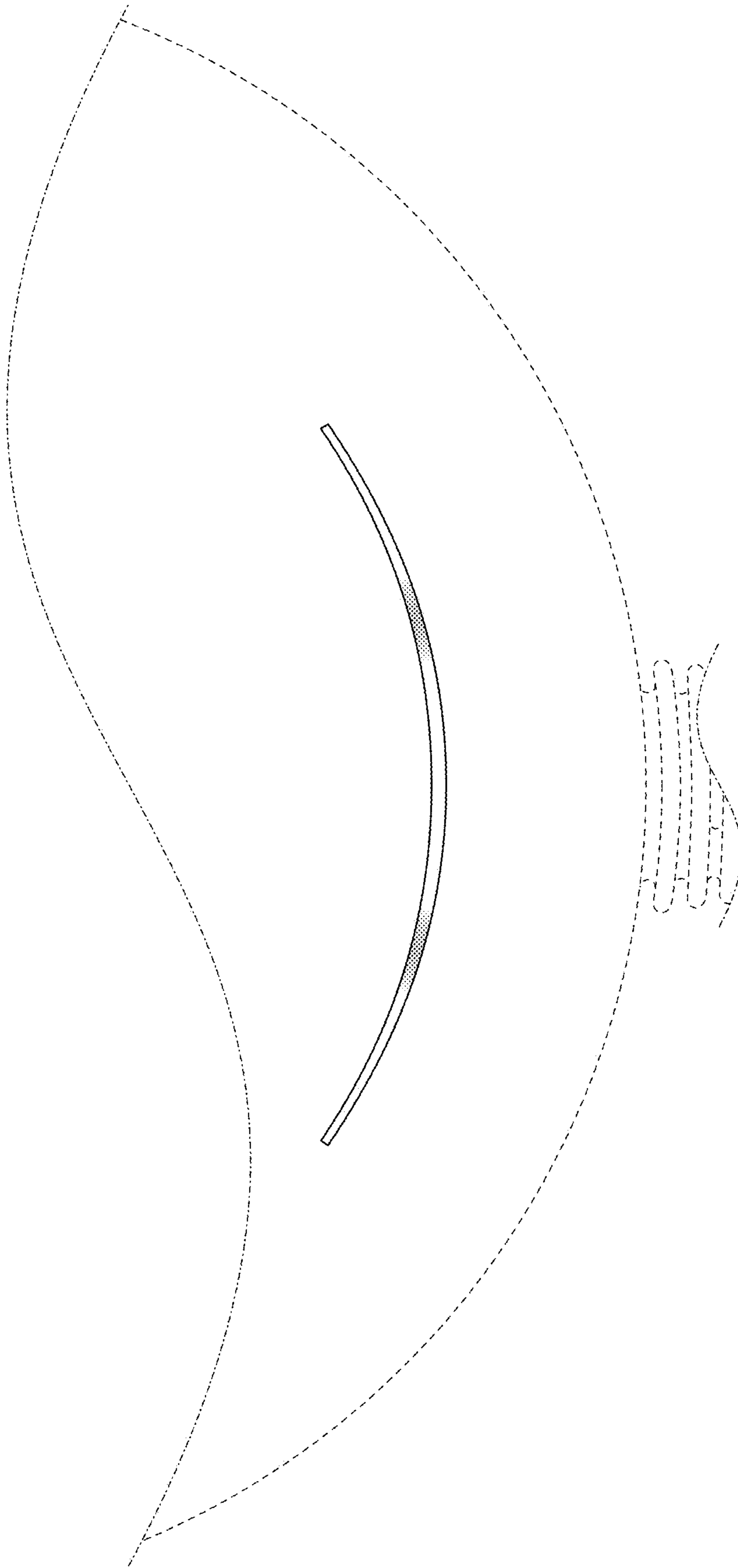


FIG. 3

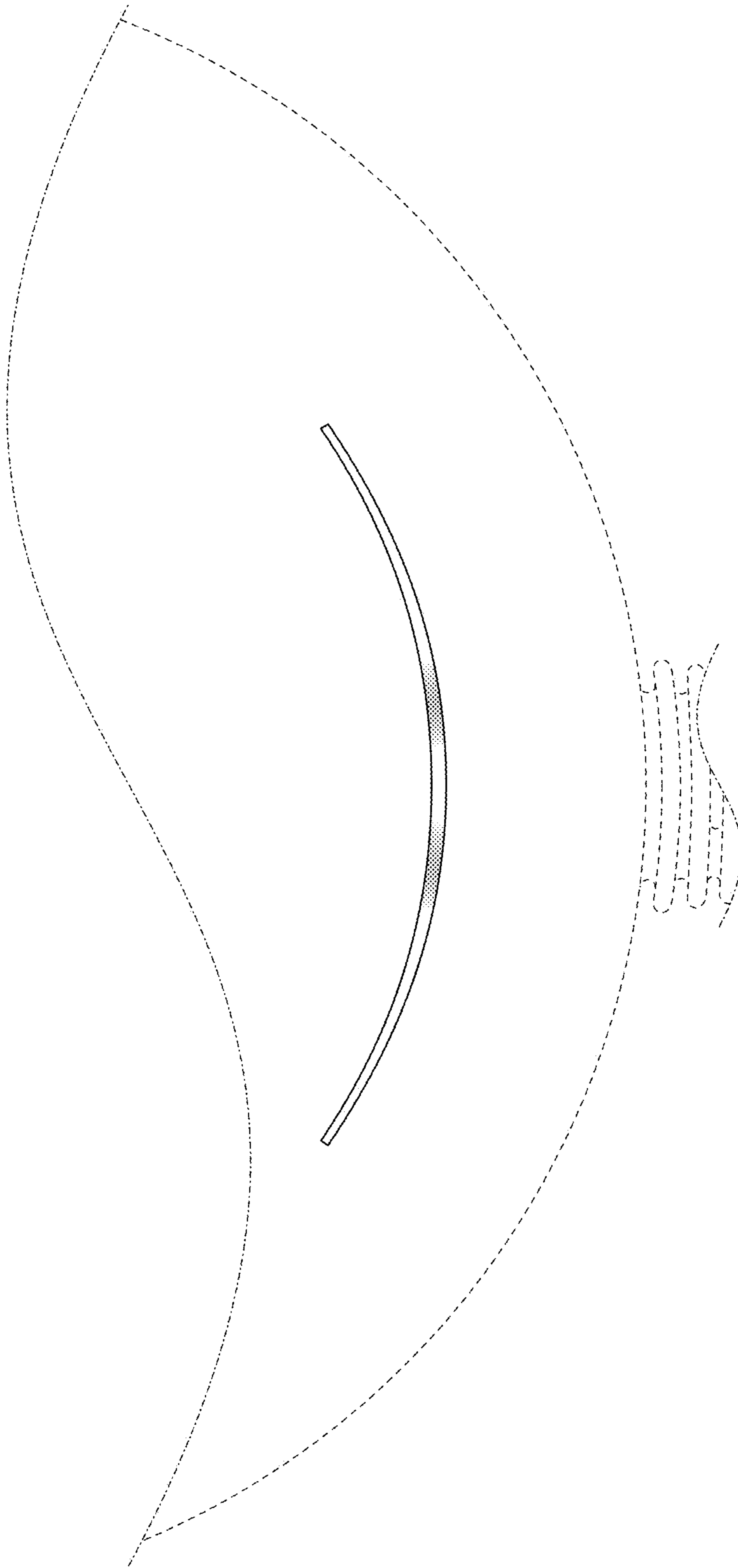


FIG. 4

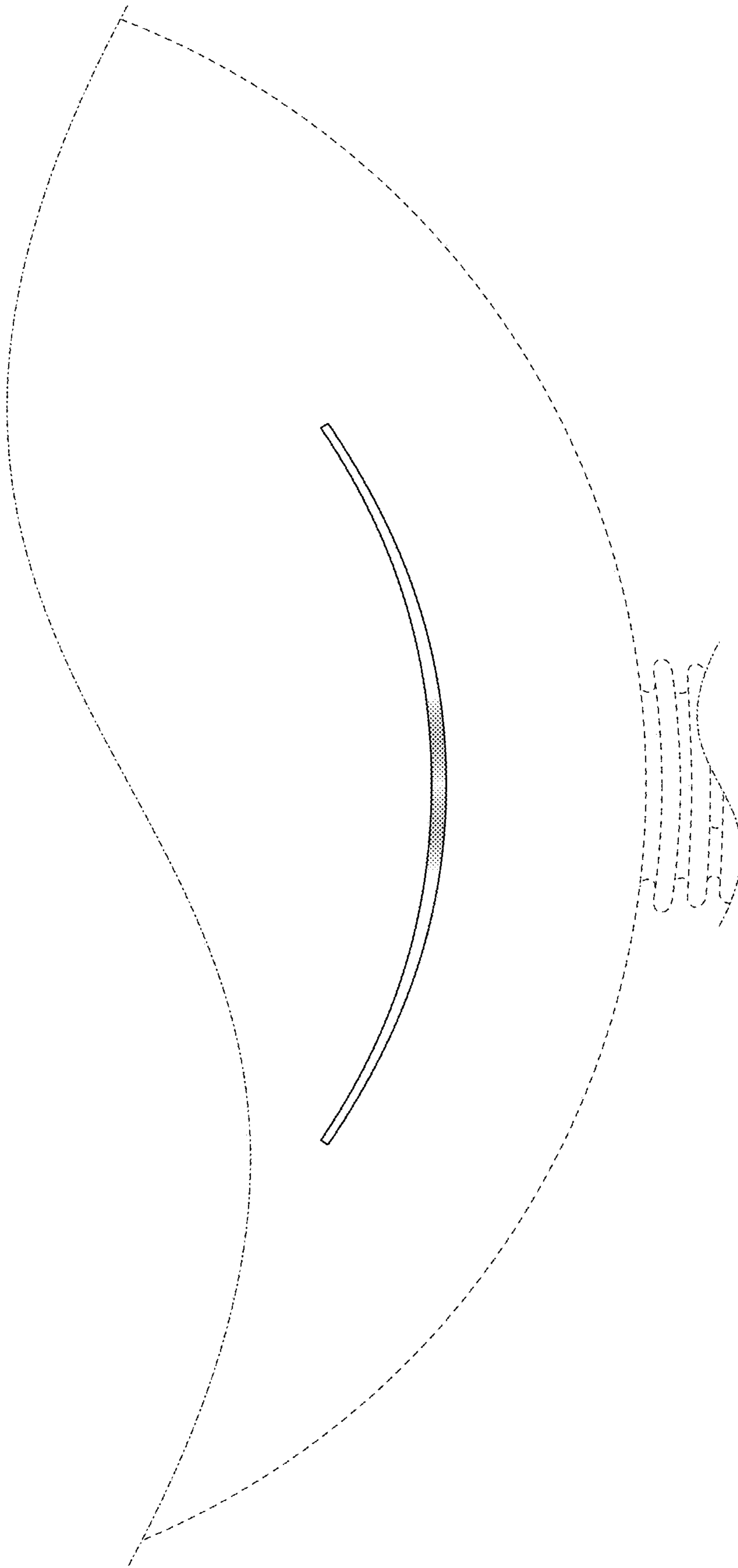


FIG. 5

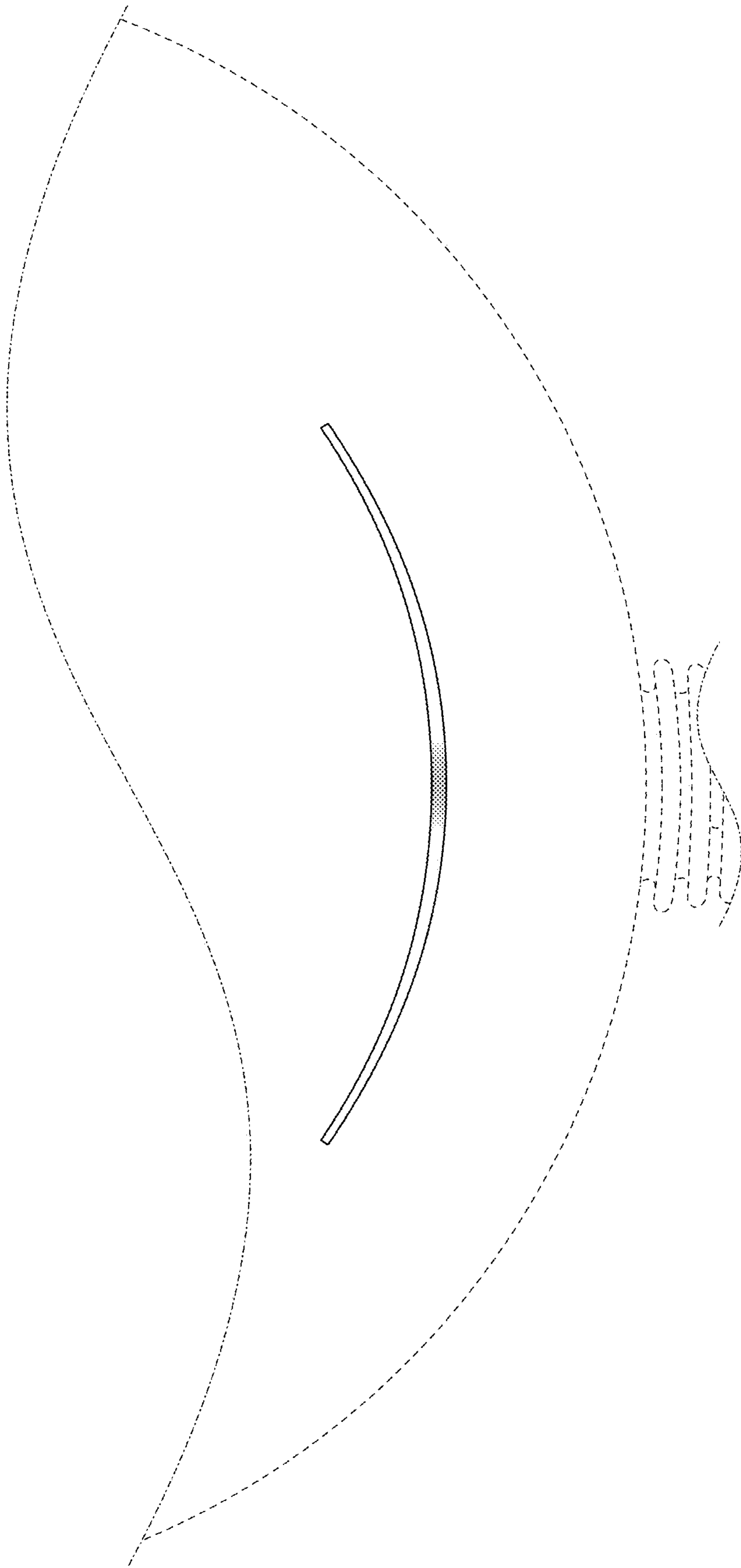


FIG. 6

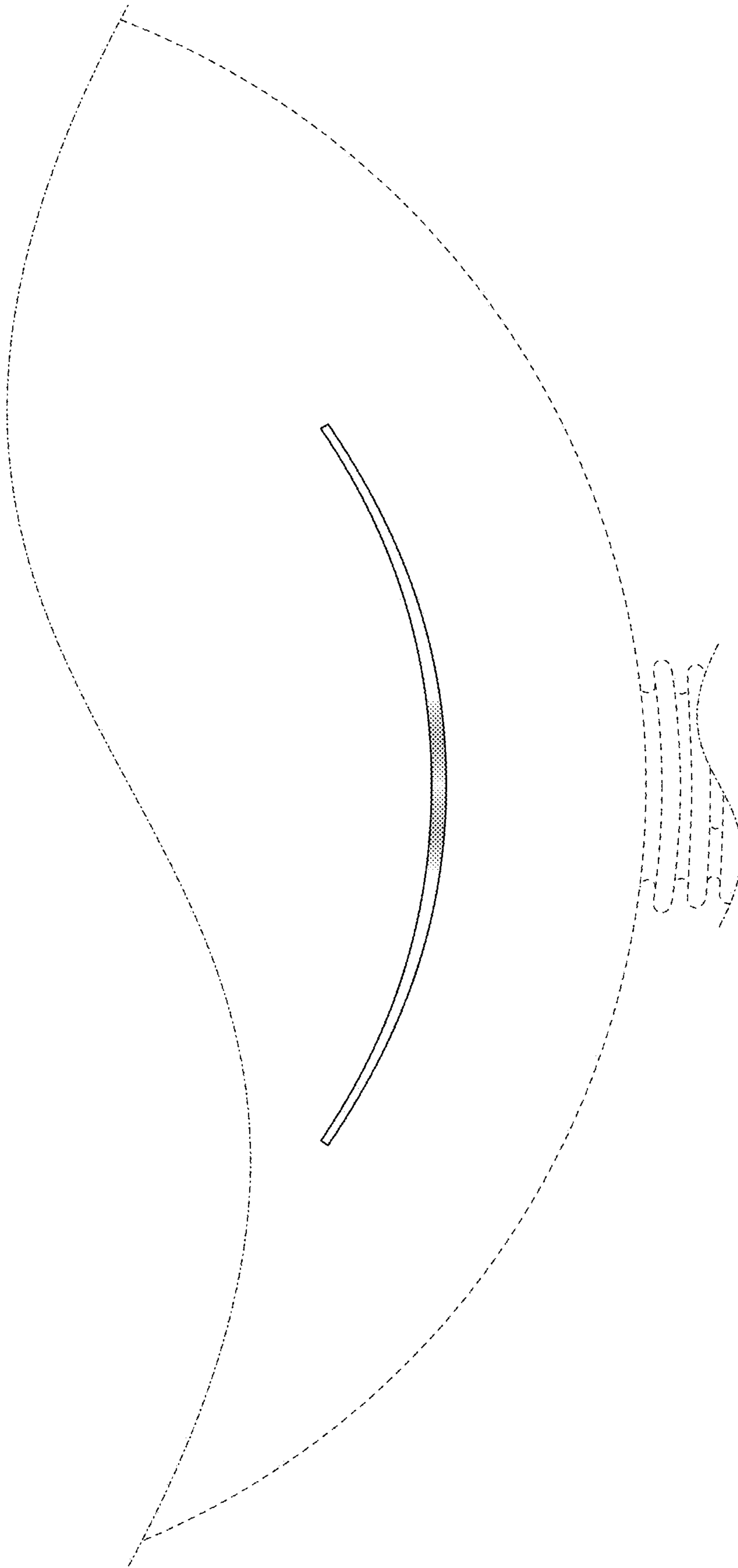


FIG. 7

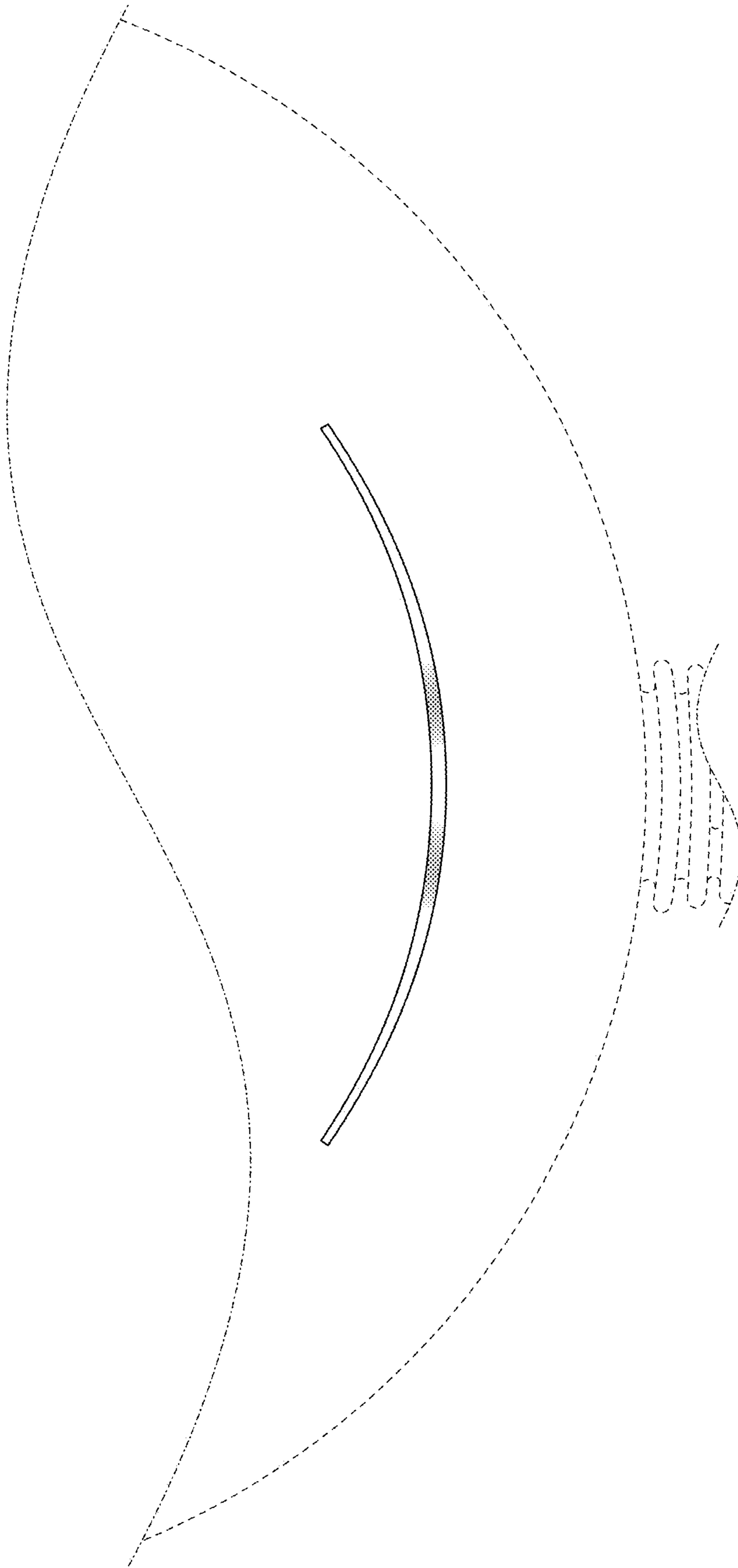


FIG. 8

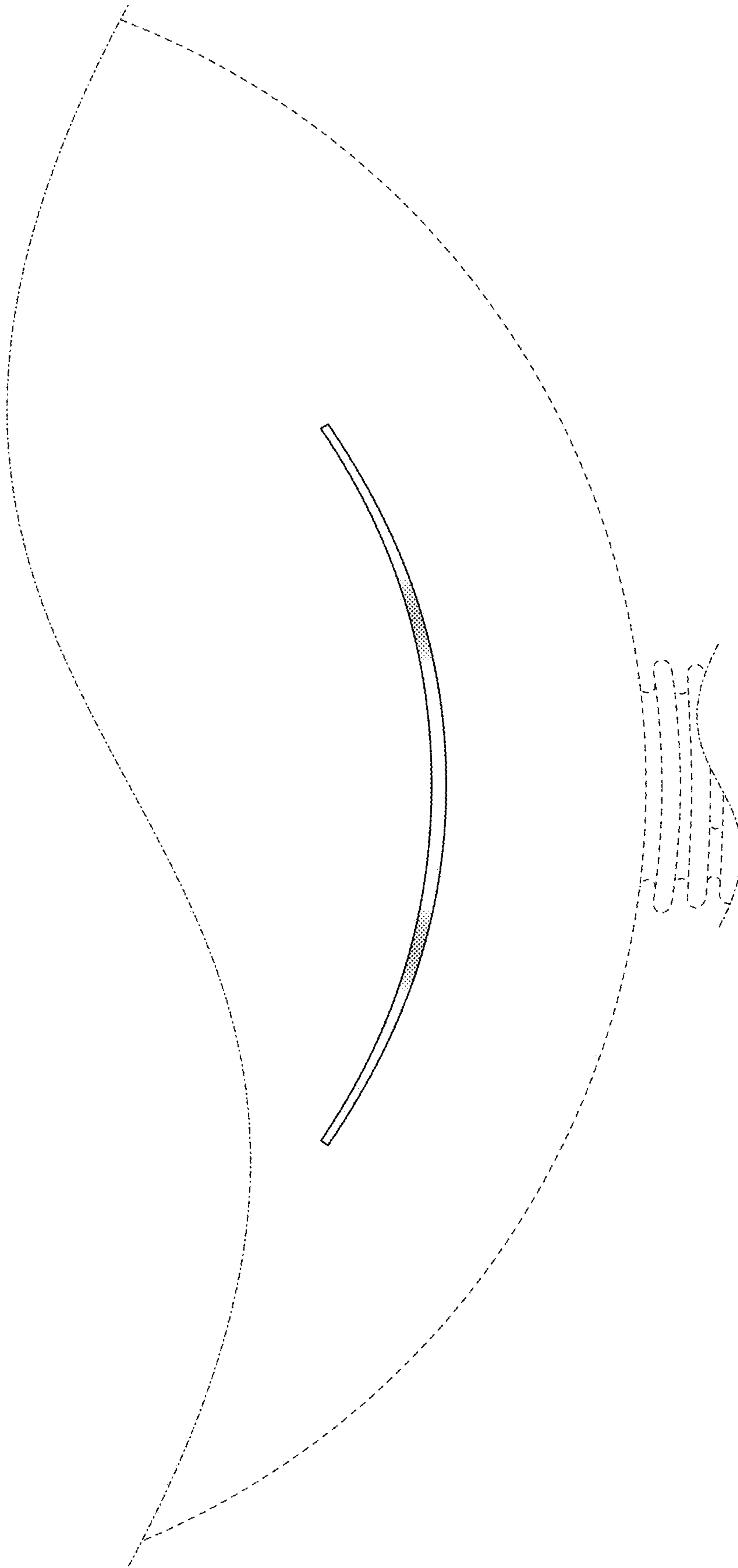


FIG. 9

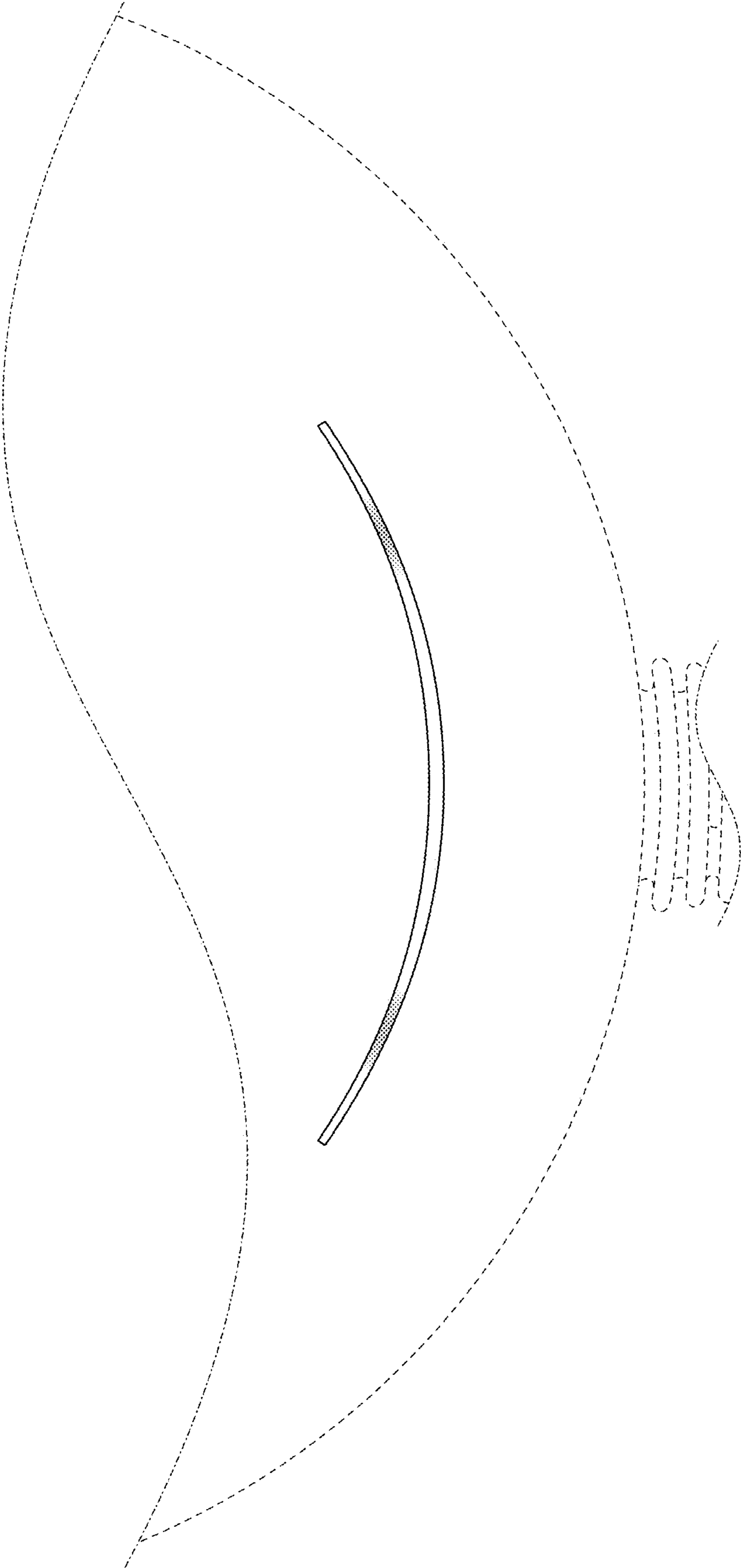


FIG. 10

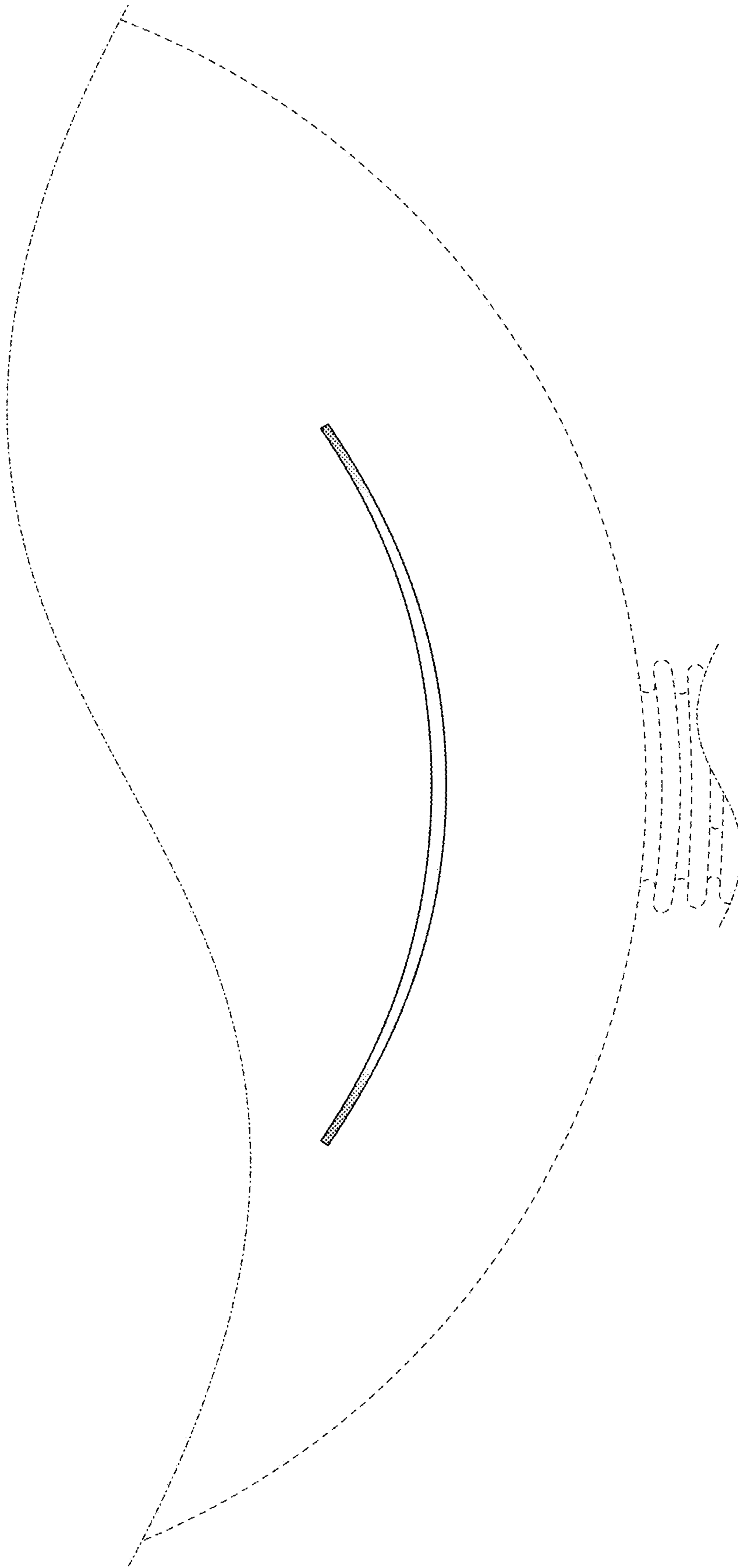


FIG. 11