



US0D1054522S

(12)

United States Design Patent

Geissele et al.

(10)

Patent No.:

US D1,054,522 S

(45)

Date of Patent:

** Dec. 17, 2024

(54) SPRING

(71) Applicant: WHG PROPERTIES, LLC, North Wales, PA (US)

(72) Inventors: William H. Geissele, Lower Gwynedd, PA (US); Adam Lauser, Jr., Coplay, PA (US); Cory Morris, Drexel Hill, PA (US)

(73) Assignee: WHG PROPERTIES, LLC, North Wales, PA (US)

(**) Term: 15 Years

(21) Appl. No.: 29/875,288

(22) Filed: May 2, 2023

(51) LOC (14) Cl. 22-01

(52) U.S. Cl. D22/108

(58) Field of Classification Search

USPC D22/108; D6/718.3; D8/356, 499

CPC F41A 9/70; F41A 9/65; F41A 9/71; F41A 9/68; F41A 9/69; F41A 11/02; F41A 9/61; F41A 9/00; F41A 9/17; F41A 9/23; F41A 9/34; F41A 9/84; F16F 1/04; F16F 1/047

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

4,397,453 A * 8/1983 Seecamp F41A 9/70 267/180

5,592,769 A * 1/1997 Villani F41A 9/62 42/1.03

(Continued)

OTHER PUBLICATIONS

Alibaba.com, Hengsheng Custom Rectangular Steel Square Wire Z Shape Compressions Spring Extra Power, [retrieved from Internet

May 17, 2023] <https://www.alibaba.com/product-detail/Wire-Spring-Hengsheng-Custom-Rectangular-Steel_1600187542583.html> (10 pages).

(Continued)

Primary Examiner — Michael A. Pratt

(74) Attorney, Agent, or Firm — ALSTON & BIRD LLP

(57) CLAIM

The ornamental design for a spring as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a spring showing the new design;

FIG. 2 is a left side elevation view thereof.

FIG. 3 is a right side elevation view thereof;

FIG. 4 is a front elevation view thereof;

FIG. 5 is a rear elevation view thereof;

FIG. 6 is a top plan view thereof; and

FIG. 7 is a bottom plan view thereof.

FIG. 8 is a perspective view of another embodiment of a spring showing the new design;

FIG. 9 is a left side elevation view thereof.

FIG. 10 is a right side elevation view thereof;

FIG. 11 is a front elevation view thereof;

FIG. 12 is a rear elevation view thereof;

FIG. 13 is a top plan view thereof; and

FIG. 14 is a bottom plan view thereof.

FIG. 15 is a perspective view of yet another embodiment of a spring showing the new design;

FIG. 16 is a left side elevation view thereof.

FIG. 17 is a right side elevation view thereof;

FIG. 18 is a front elevation view thereof;

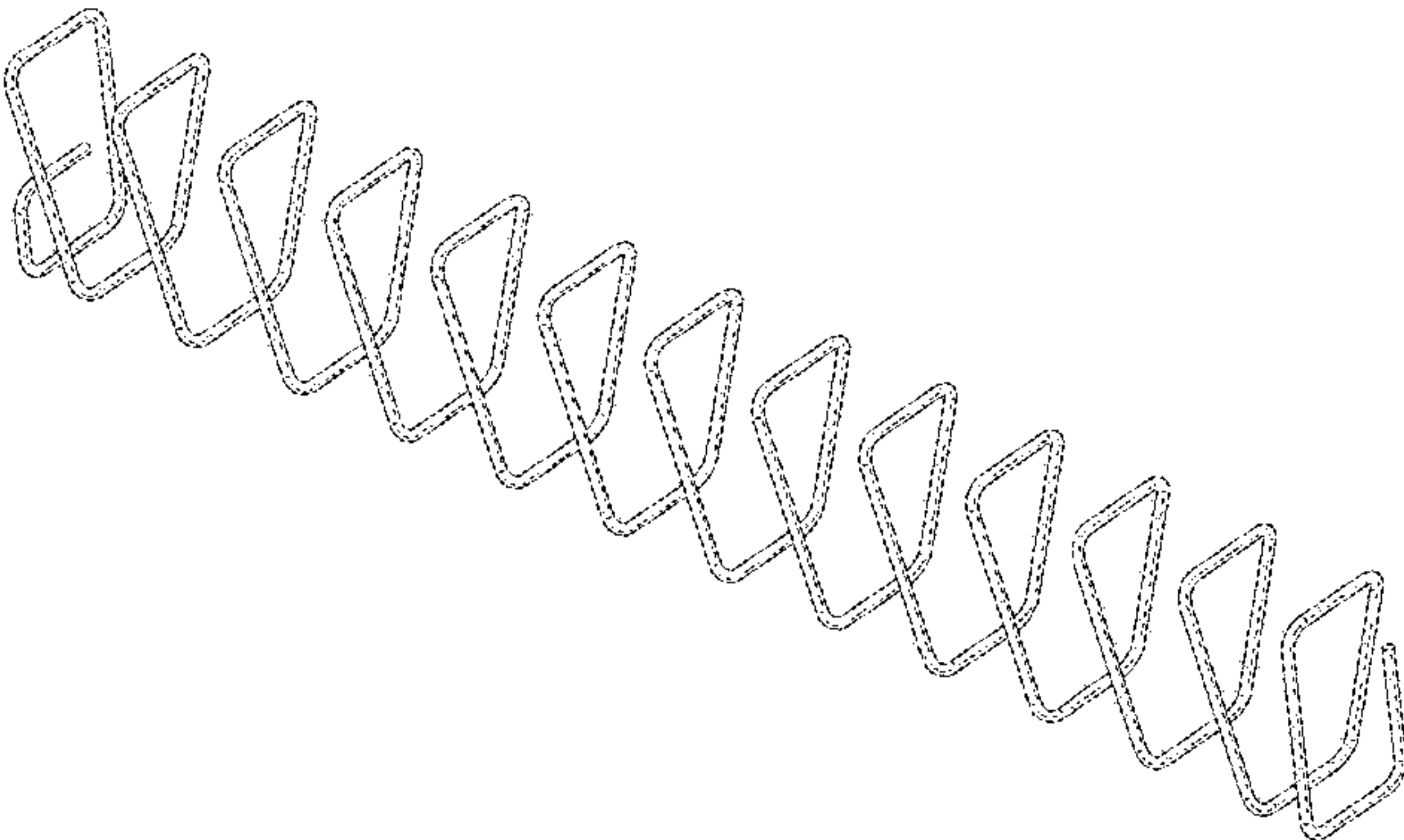
FIG. 19 is a rear elevation view thereof;

FIG. 20 is a top plan view thereof; and,

FIG. 21 is a bottom plan view thereof.

The broken away symbols in the drawings at the approximate midpoint of the article indicate the appearance of any portion of the article between the break lines forms no part of the claimed design.

1 Claim, 12 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

7,533,483	B1	5/2009	Alzamora et al.	
D644,293	S	8/2011	Fitzpatrick et al.	
D667,915	S	9/2012	Nakayama et al.	
D862,631	S *	10/2019	Spine	D22/108
D884,108	S	5/2020	Muller	
11,054,202	B1 *	7/2021	Underwood	F41A 9/70
11,150,041	B2	10/2021	Nakayama et al.	
2008/0028661	A1 *	2/2008	Bubits	F41A 9/71
				42/49.01
2010/0269389	A1 *	10/2010	Lopez Laparra	F41A 9/69
				42/49.01
2013/0167421	A1 *	7/2013	Zheng	F41A 9/70
				42/50
2013/0180146	A1	7/2013	Fitzpatrick et al.	
2014/0250750	A1 *	9/2014	Williams	F41A 9/62
				42/1.02

OTHER PUBLICATIONS

Alibaba.com, Manufacturer customized spring steel wire square shape compression spring, [retrieved from Internet May 17, 2023] <https://www.alibaba.com/product-detail/Manufacturer-customized-spring-steel-wire-square_60782959555.html> (13 pages).

Manufacturer customized spring steel wire square shape compression spring, [retrieved from Internet May 17, 2023] <https://s.alicdn.com/@sc04/kf/HTB1_W9.cRKw3KVjSZFOq6yrDVXaf.jpg_960x960.jpg>.

Square Wire Spring, [retrieved from Internet May 17, 2023] <https://s.alicdn.com/@sc04/kf/H4f9bf3ff45d843f1b8e924e68c70e06bI.png_300x300.png>(1 page).

Grabcad Community, Rectangular Spring, by Jahangir, dated Oct. 29, 2015, [retrieved from Internet May 17, 2023] <<https://grabcad.com/library/rectangular-spring-2>> (4 pages).

Rectangular Spring, by Jahangir, dated Oct. 29, 2015, [retrieved from Internet May 17, 2023] <<https://d2tlxqejof9utc.cloudfront.net/screenshots/pics/ff9e0403c9b4fdd35e130476fde14929/large.JPG>> (1 page).

OEM special shaped rectangular compression spring, [retrieved from Internet May 17, 2023] <<http://sc04.alicdn.com/kf/H0108429ef55342ffa801ceb5fca37954a.jpg>> (1 page).

Fusion 360 | Custom profile Rectangular spring | Ep02, by Indian Amo, published Jun. 20, 2019, [retrieved from Internet May 17, 2023] <<https://youtu.be/TVyUiclRRCY?t=464>> (2 pages).

How to design a rectangular spring in SolidWorks, by CKonnect SolidWorks Reseller India, published May 17, 2018, [retrieved from Internet May 17, 2023] <<https://youtu.be/2IaD6-hz1Ns?t=444>> (2 pages).

Kigauru Spring, Spring Steel Rectangular Square Shaped Wire Compression Spring, [retrieved from Internet May 17, 2023] <https://m.media-amazon.com/images/I/51HVDNbmIIL._AC_SL1500_.jpg> (1 page).

Amend2 AR-15 6.5 Grendel/6mm ARC 10-Round Magazine, [retrieved from Internet May 17, 2023] < <https://amend2mahs.com/amend2-ar-15-6-5-grendel-10-round-magazine/>> (3 pages).

LaRue Tactical 20-Round 7.62 Magazine and Spring, [retrieved from Internet May 17, 2023] <<https://static.larue.com/media/prodthumbs/ba/ea/baea37466135125958eeeb6baf7ffe89.jpg>> (1 page).

Magpul, Enhanced Self-Leveling Follower and Spring, [retrieved from Internet May 17, 2023] <https://magpul.com/media/catalog/product/cache/b17374f70a12c2b7e2a5blc24b27130f/m/a/mag110-fol_magpul_enhanced_self-leveling_follower-usgi_5.56x45_3_pack_05.jpg> (1 page).

Lancer Systems L5AWM AR 15 30 Round Clear Magazine [retrieved from Internet May 17, 2023] <https://themagshack.com/wp-content/uploads/2018/03/Lancer-Systems-L5AWM-Ar-15-30-RD-Clear-Magazine_2.png> (1 page).

Amend2 AR-15 6.5 Grendel/6mm ARC 10-Round Magazine and Spring, [retrieved from Internet May 18, 2023] <https://cdn11.bigcommerce.com/s-9ek77ptlme/images/stencil/1280x1280/products/210/556/Grendel_4_23408.1674574_583.png> (1 page).

* cited by examiner

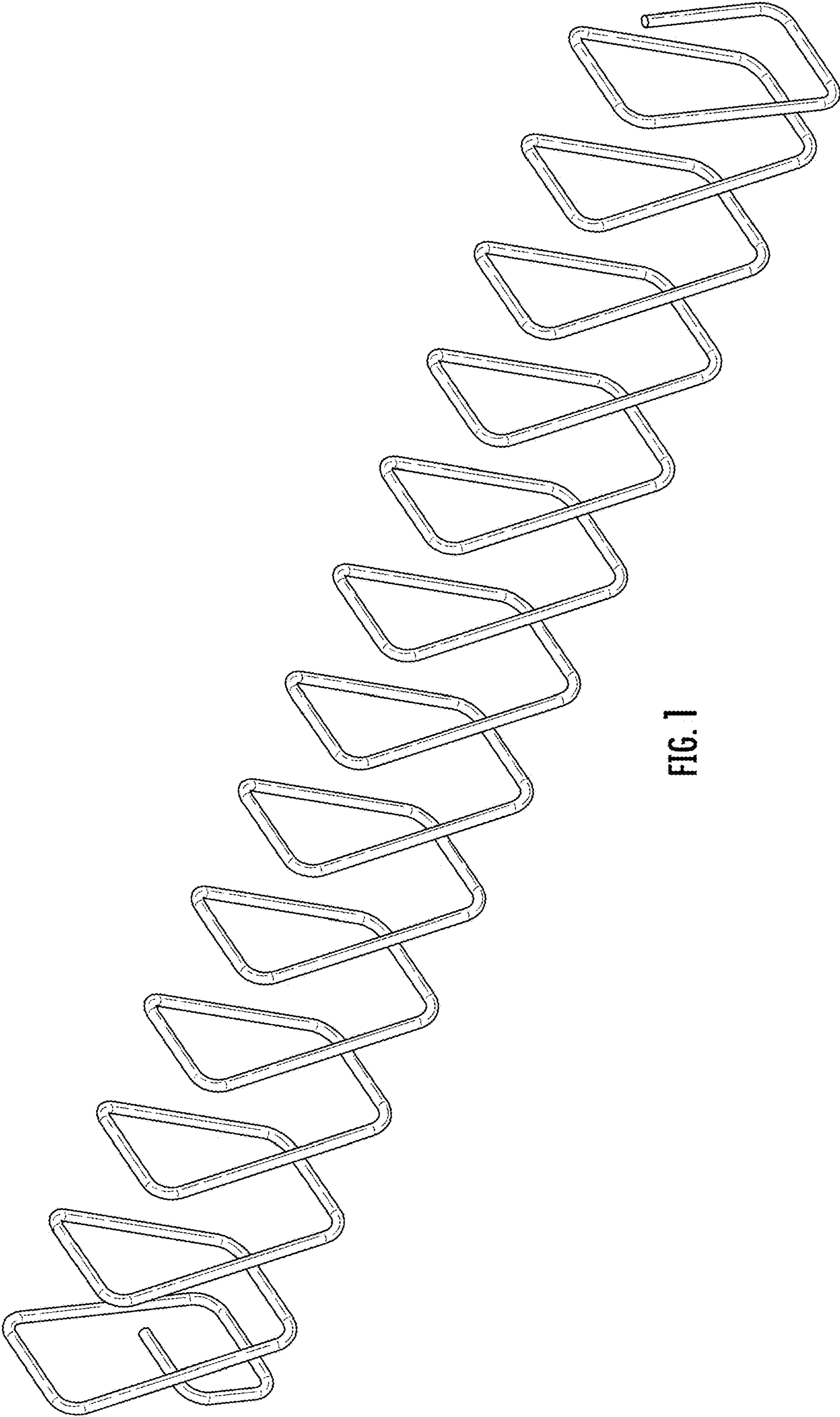


FIG. 1

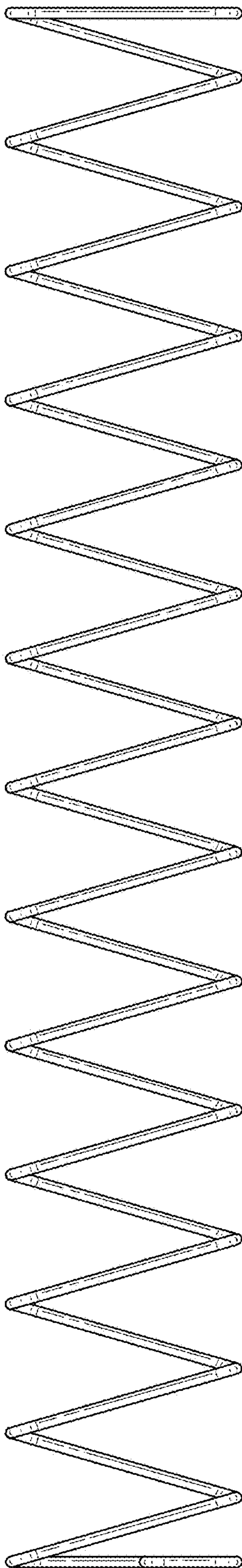


FIG. 2

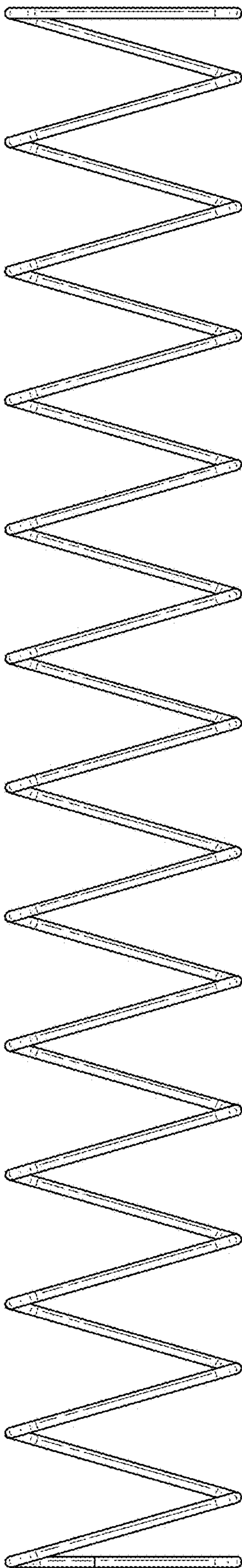


FIG. 3

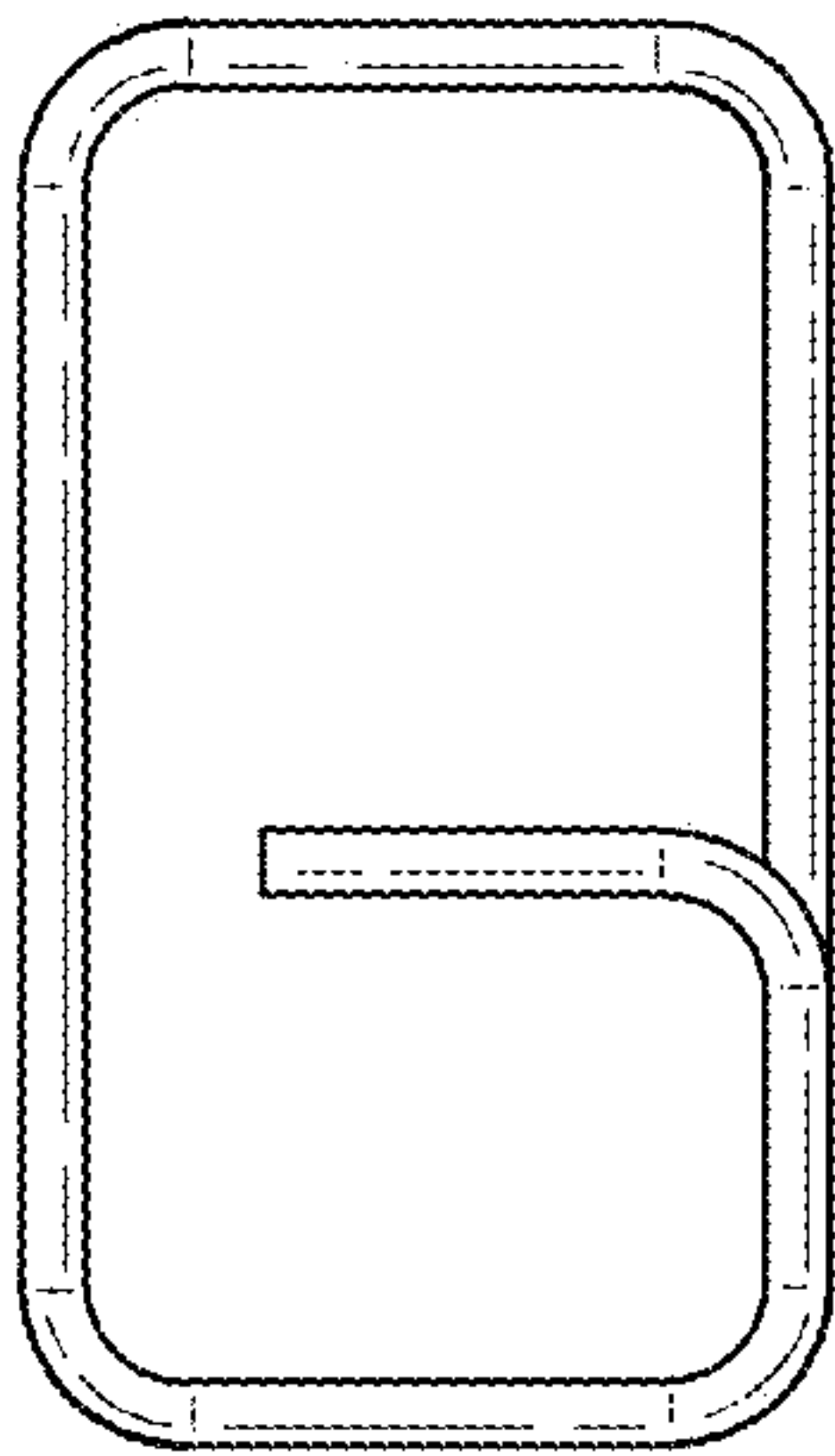


FIG. 4

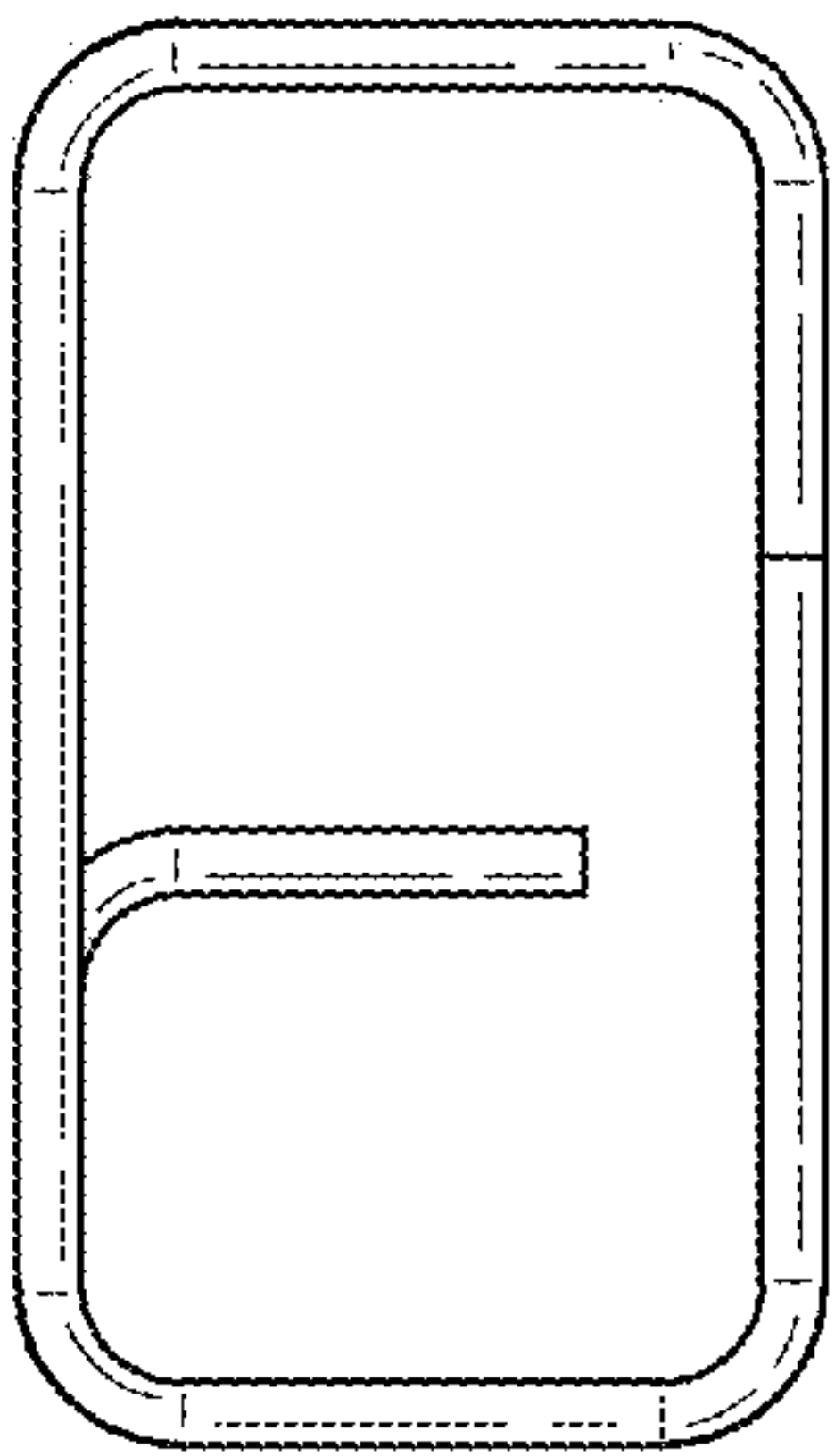


FIG. 5

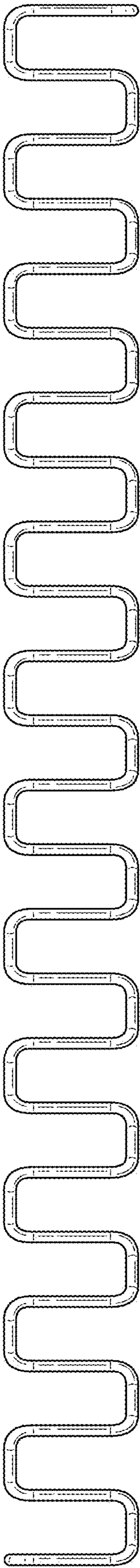


FIG. 6

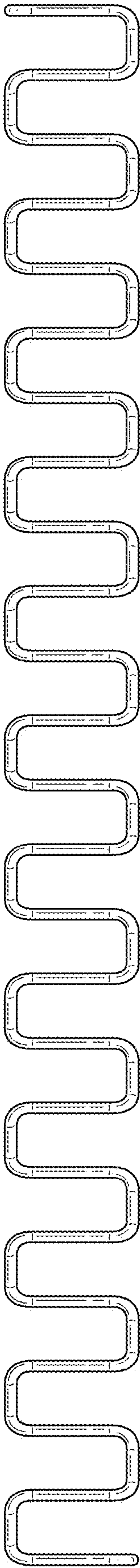


FIG. 7

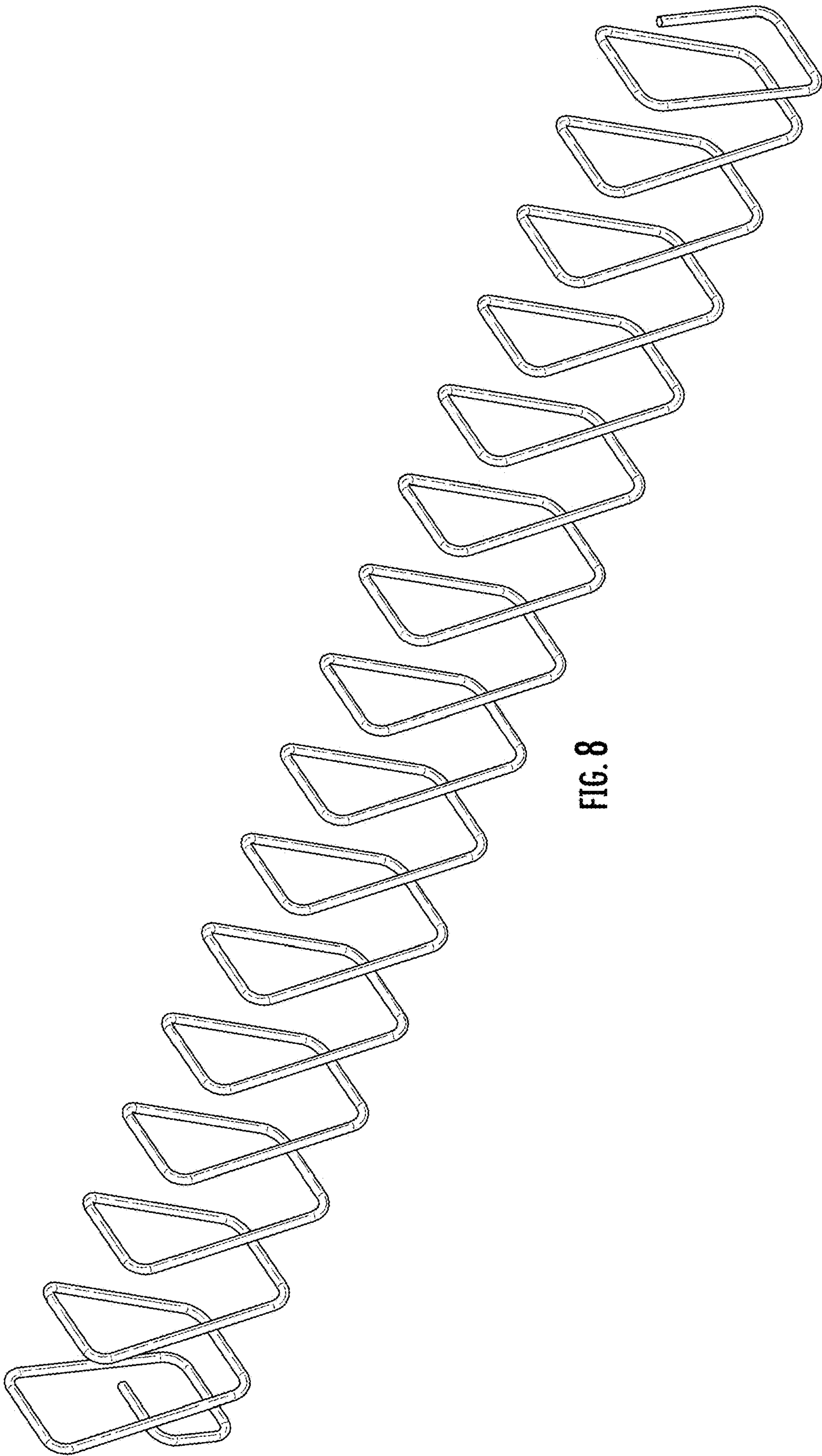


FIG. 8

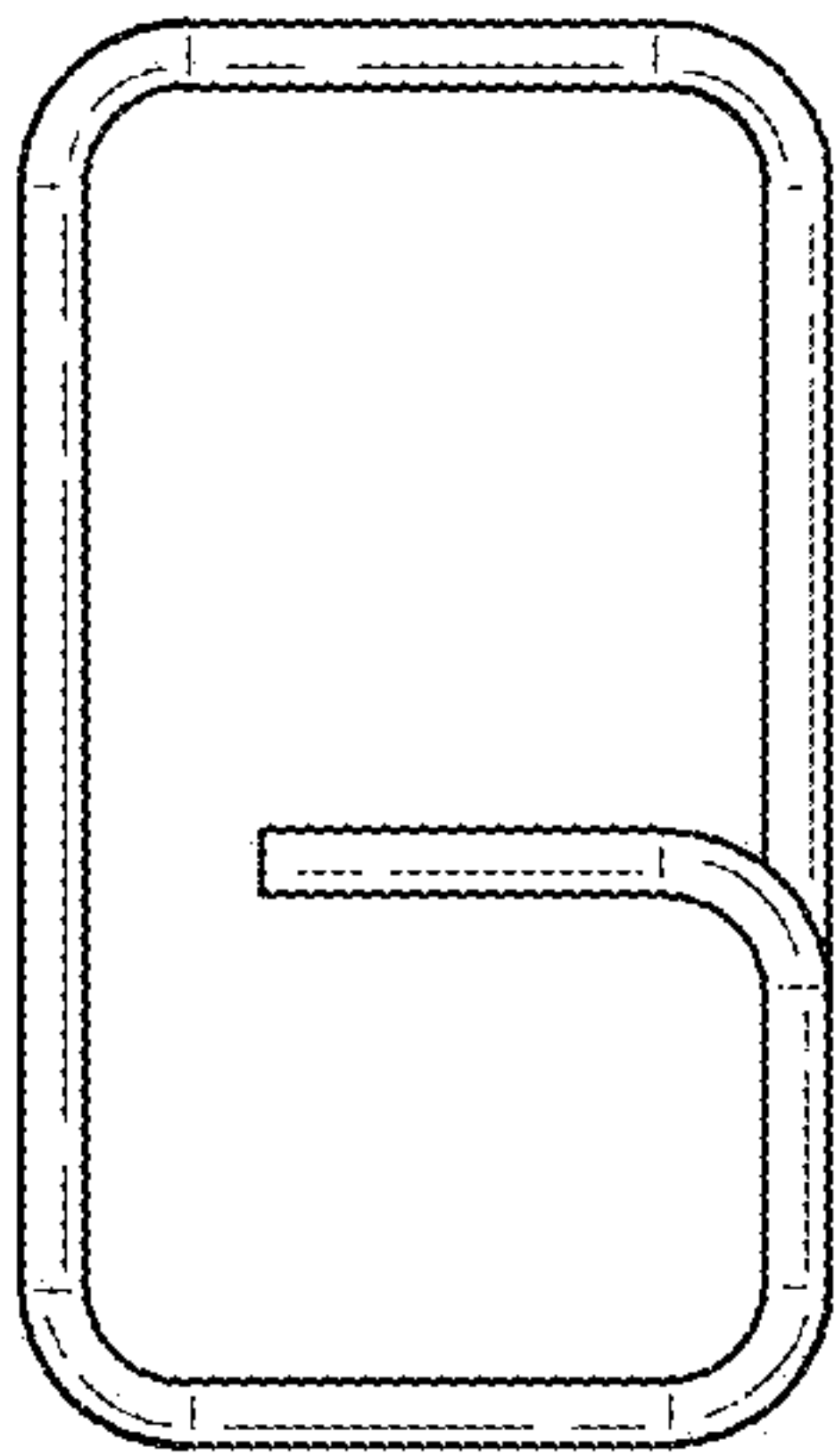


FIG. 9

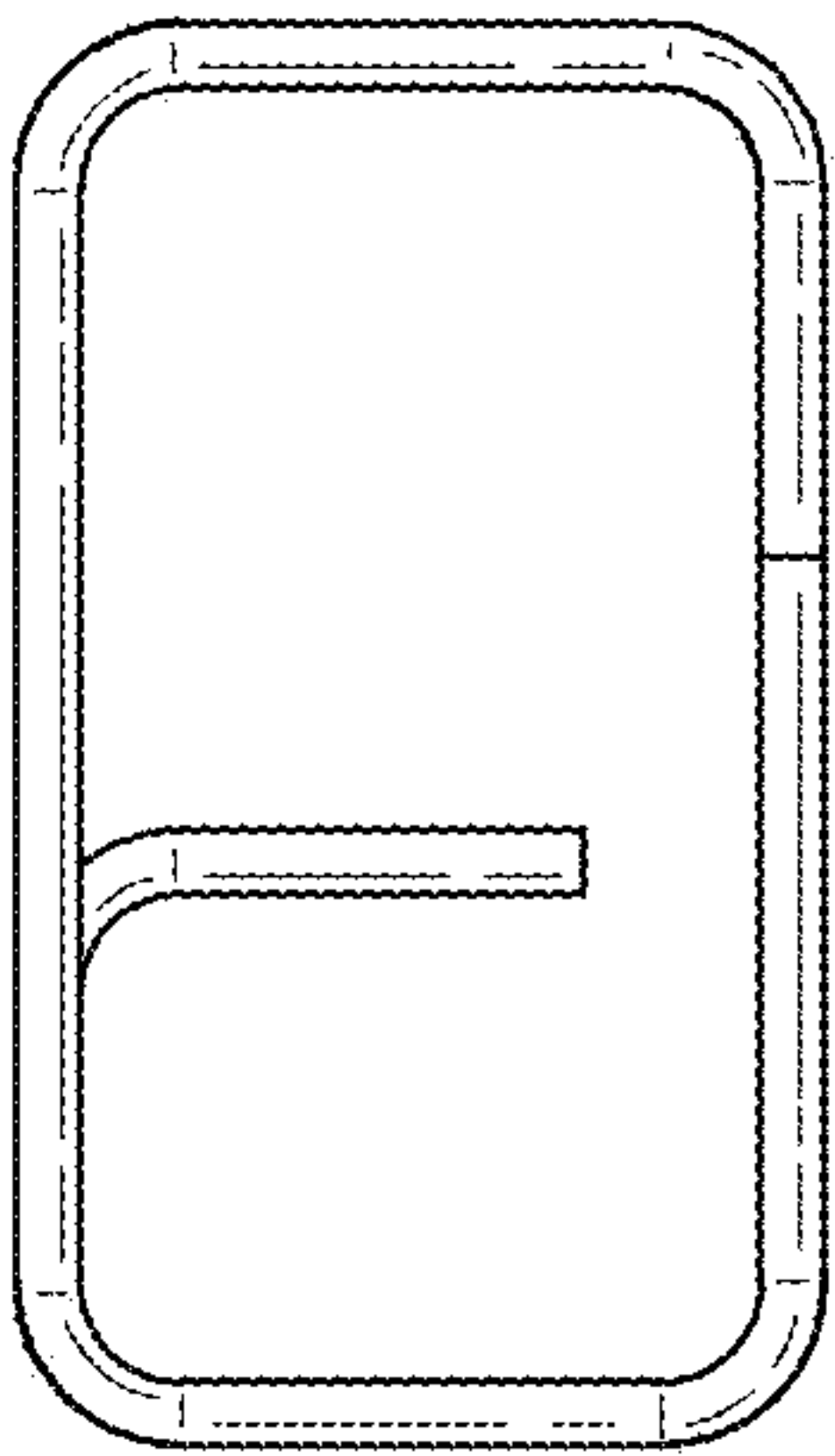


FIG. 10

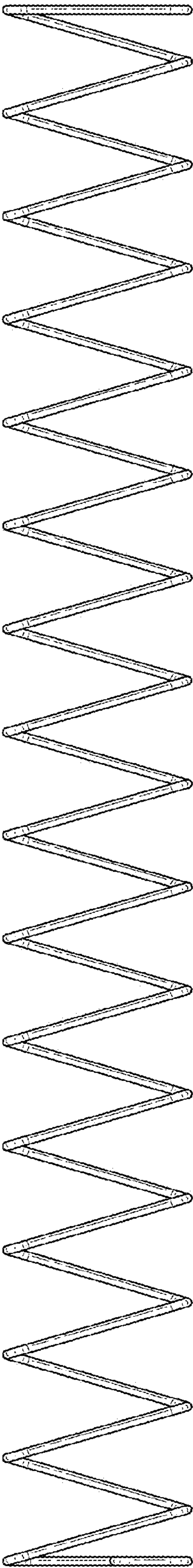


FIG. 11

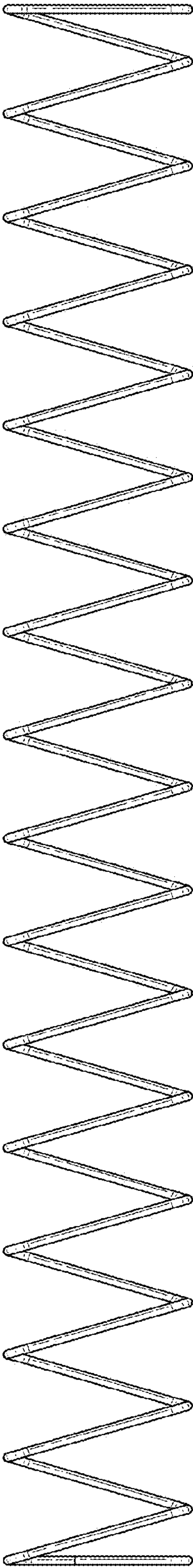


FIG. 12

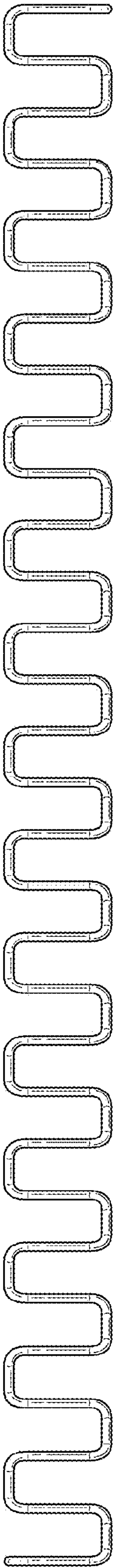


FIG. 13

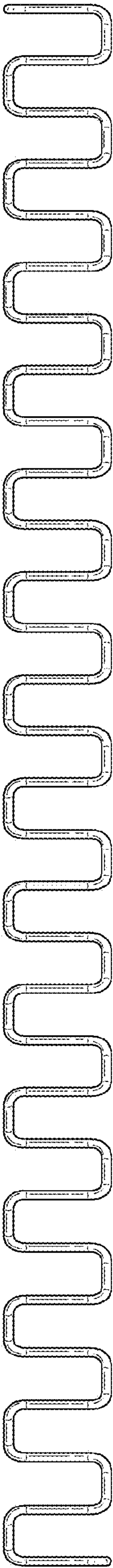


FIG. 14

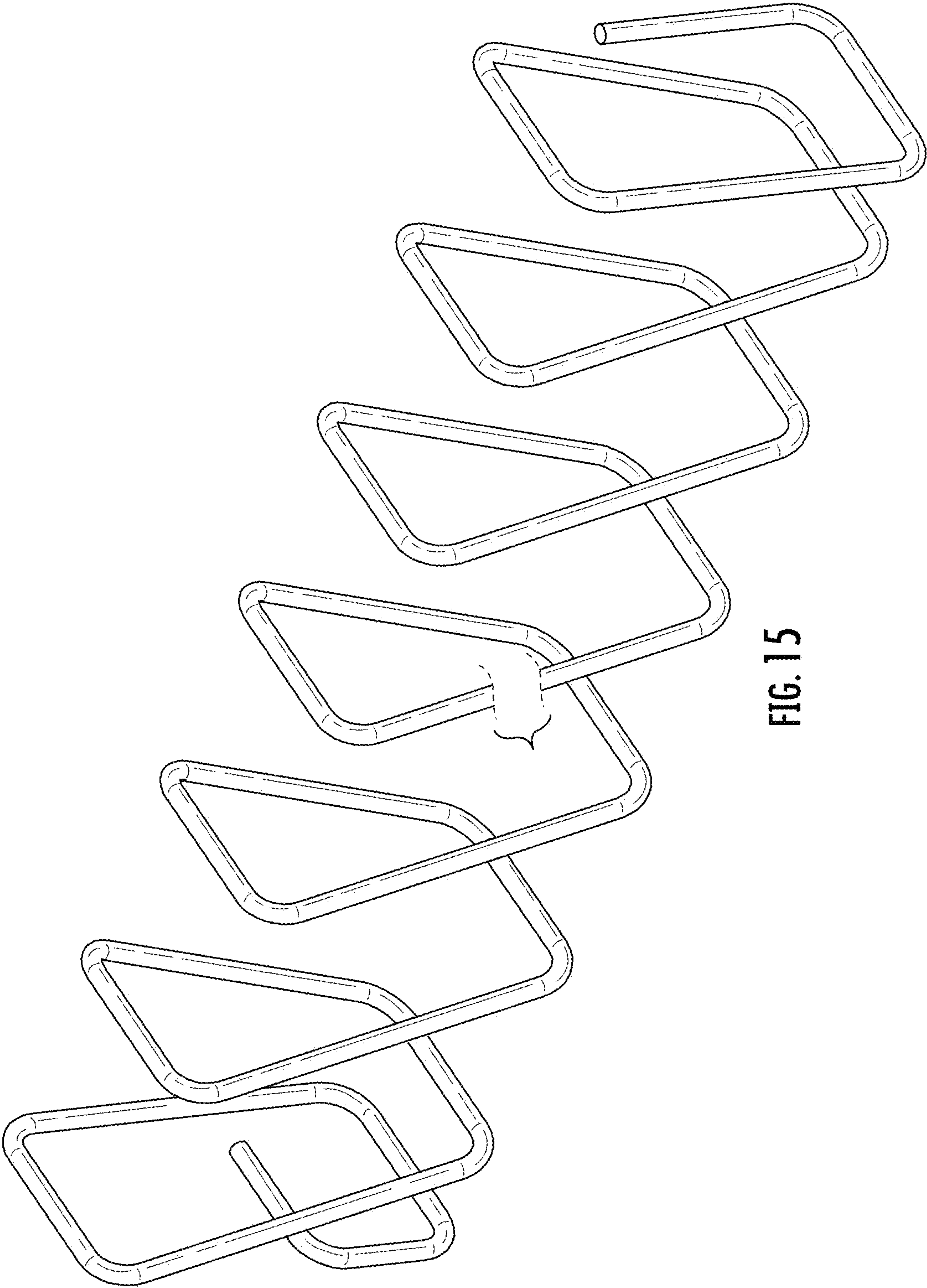


FIG. 15

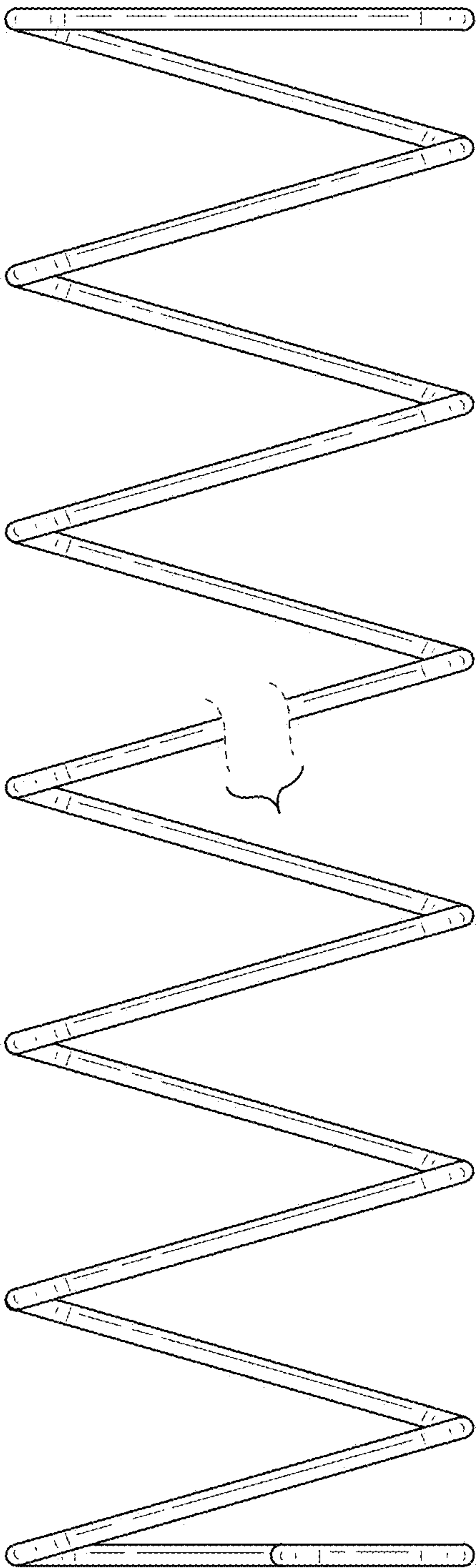


FIG. 16

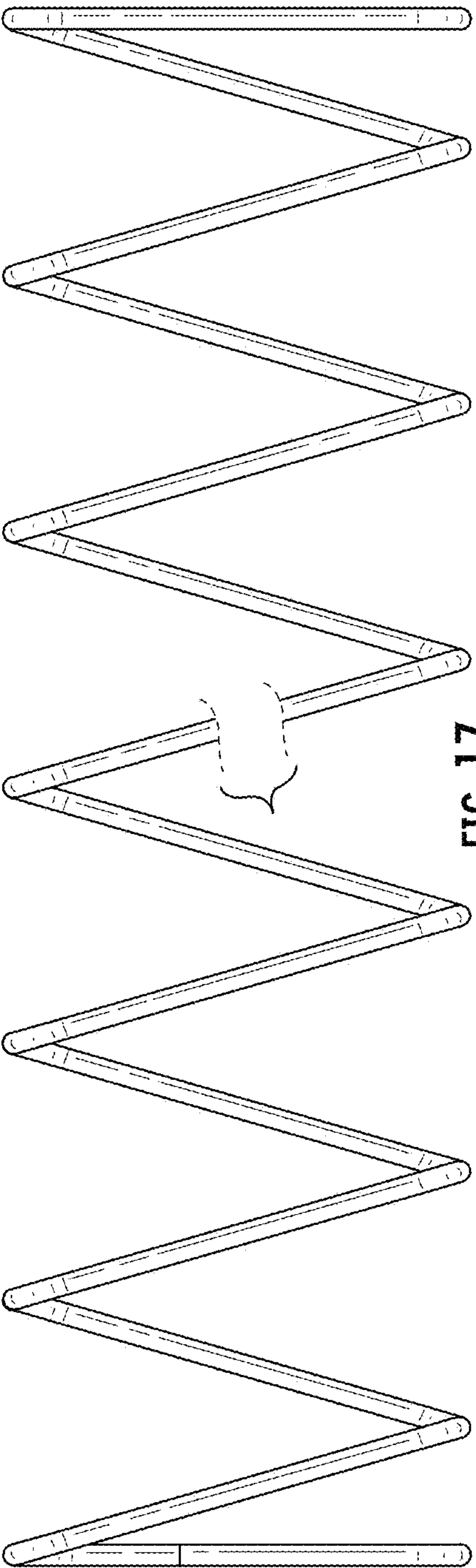


FIG. 17

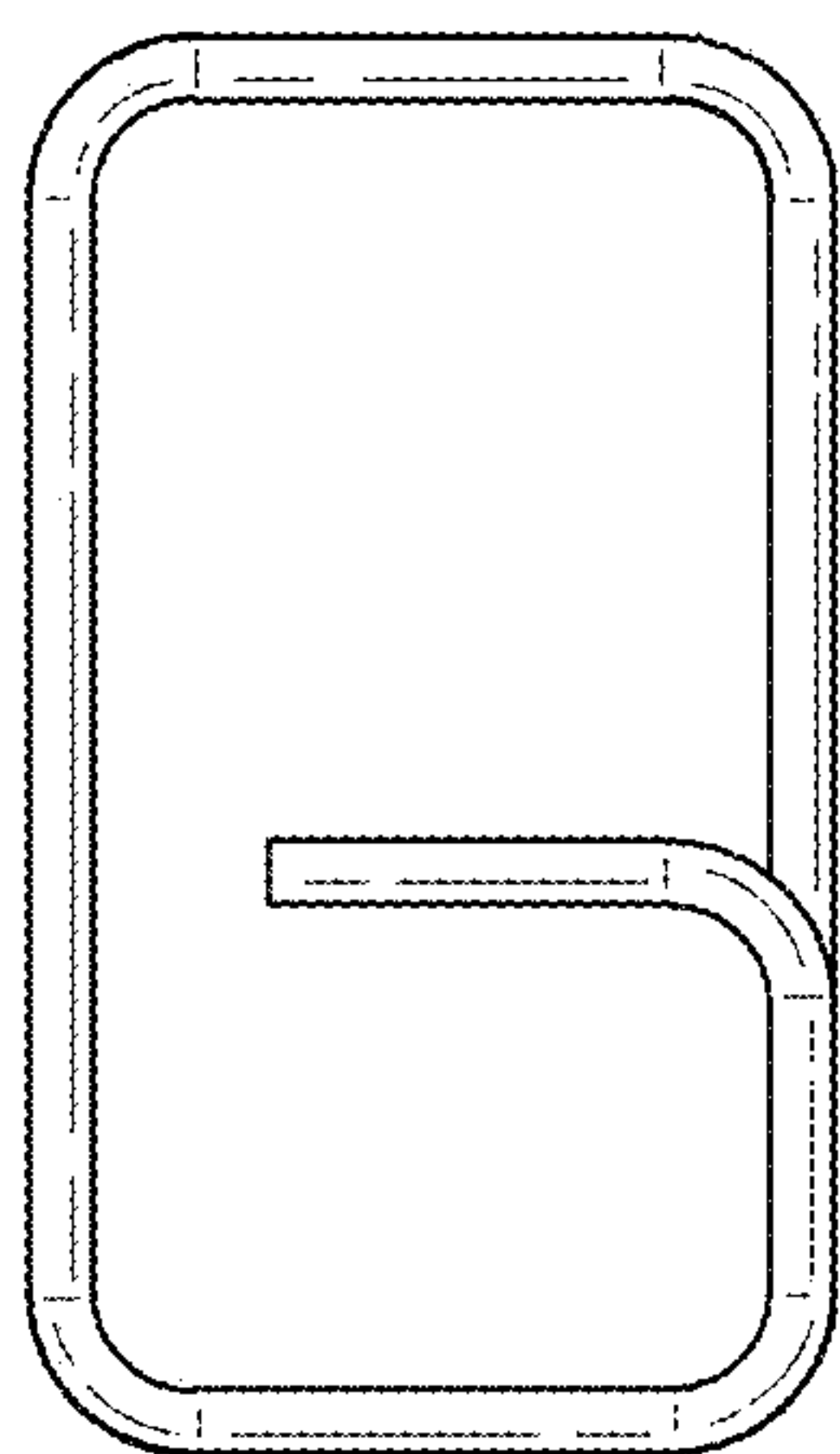


FIG. 18

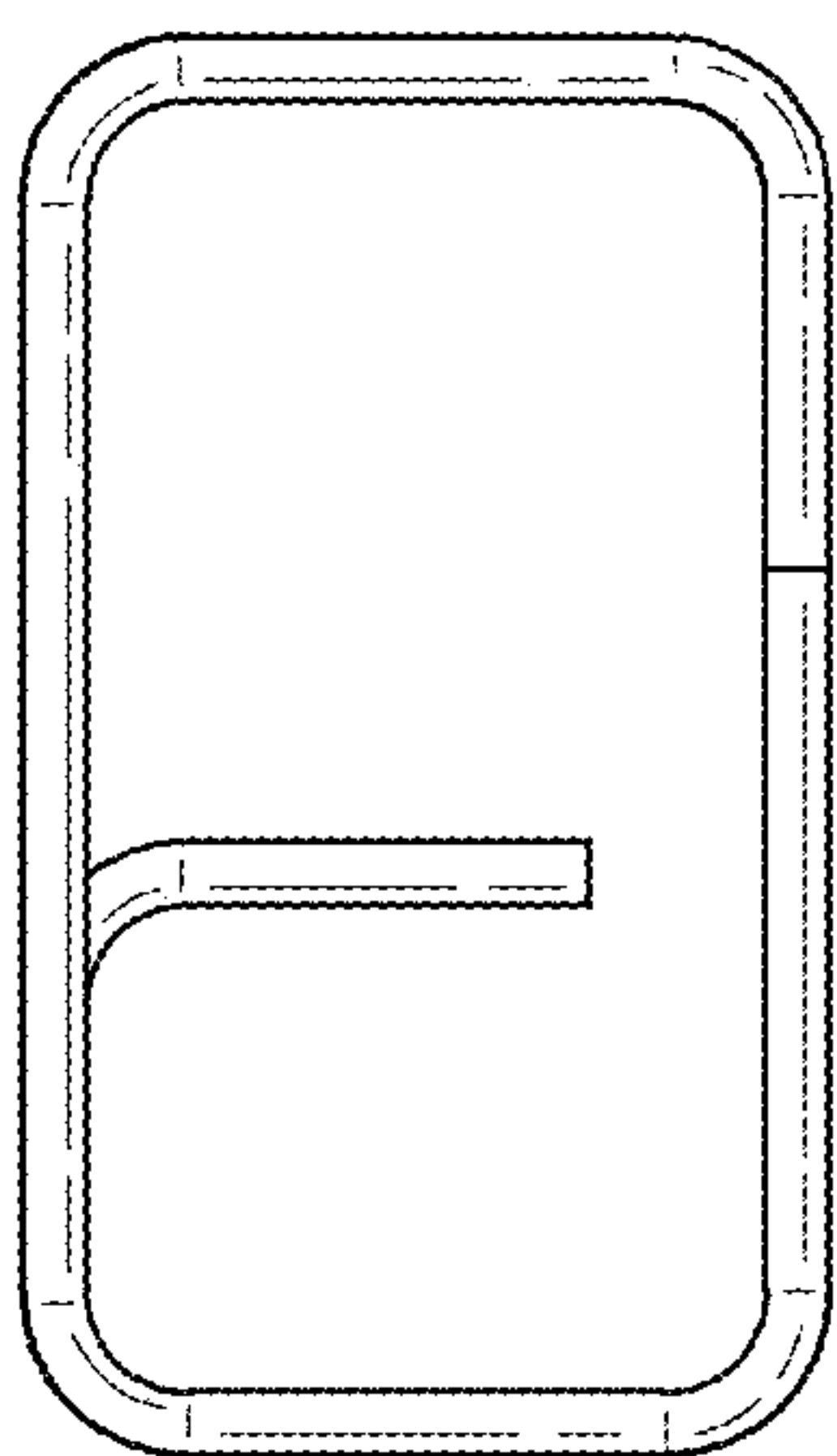


FIG. 19

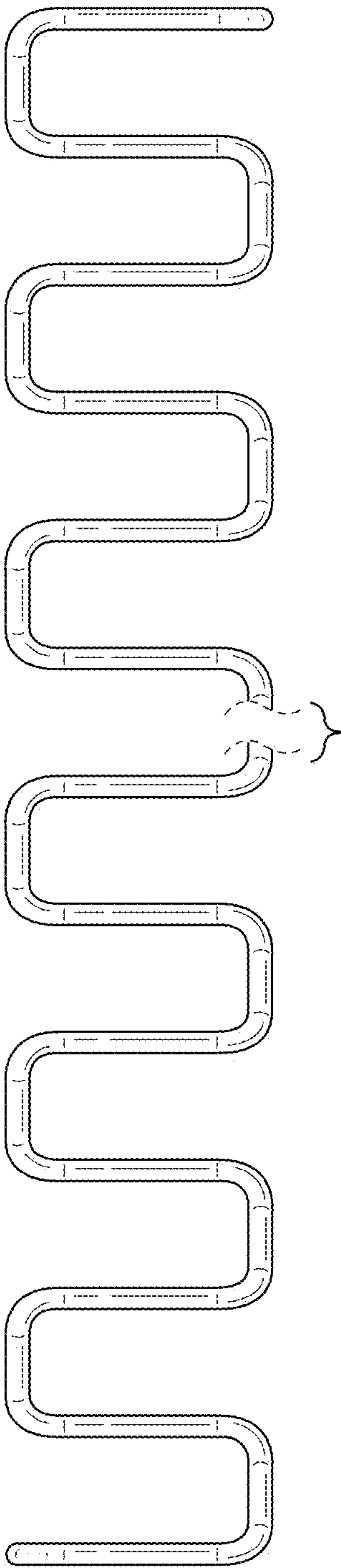


FIG. 20

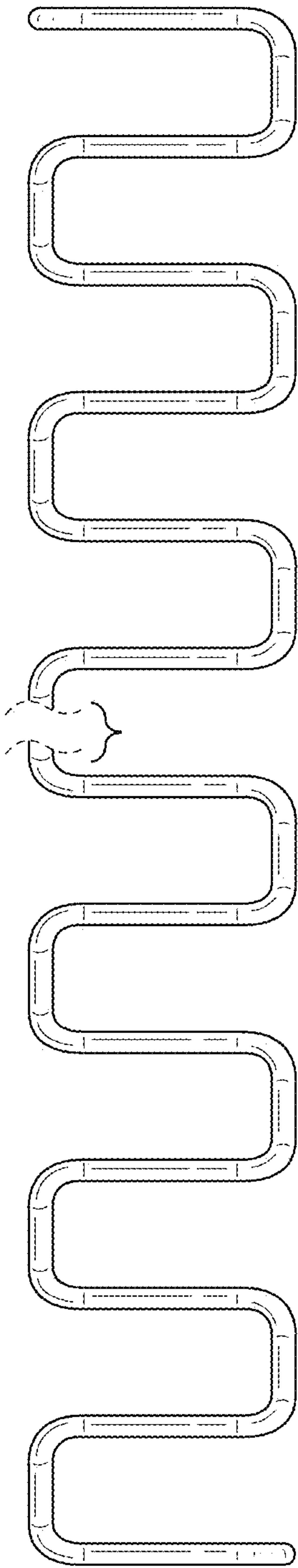


FIG. 21