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(12) **United States Design Patent** (10) **Patent No.:** **US D890,333 S**
Patel et al. (45) **Date of Patent:** **** Jul. 14, 2020**

(54) **HEART VALVE DOCKING COIL** 4,790,843 A 12/1988 Carpentier et al.
5,059,177 A 10/1991 Towne et al.
(71) Applicant: **Edwards Lifesciences Corporation,** 5,275,152 A * 1/1994 Krauter A61B 1/0052
Irvine, CA (US) 138/109
5,411,552 A 5/1995 Andersen et al.
(72) Inventors: **Darshin S. Patel,** San Juan Capistrano, 5,554,185 A 9/1996 Block et al.
CA (US); **Boaz Manash,** Givat Ada 5,658,253 A * 8/1997 Piontek A61M 25/0102
(IL); **Khen Perlmutter,** Binyamina 604/170.02
(IL); **Noa Axelrod,** Herzeliya (IL) 5,738,666 A * 4/1998 Watson A61B 1/00135
604/247

(Continued)

(73) Assignee: **Edwards Lifesciences Corporation,**
Irvine, CA (US)

FOREIGN PATENT DOCUMENTS

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

DE 19532846 A1 3/1997
DE 19907646 A1 8/2000

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Primary Examiner — David G Muller

Related U.S. Application Data

(74) *Attorney, Agent, or Firm* — Calfee, Halter &
Griswold, LLP; Hans P. Smith

(63) Continuation-in-part of application No. 15/682,287,
filed on Aug. 21, 2017, now Pat. No. 10,463,479.

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

(57) **CLAIM**

(52) **U.S. Cl.**
USPC **D24/128**

The ornamental design for a heart valve docking coil, as
shown and described.

(58) **Field of Classification Search**
USPC D24/127–131, 112–114, 133, 186;
606/181, 185; 604/264, 523–528, 272,
604/187, 158, 164.01–164.11, 181, 184,
604/227; 600/101, 139, 143;
128/200.24, 207.14, 207.15; 623/2.38
CPC A61F 2/2409; A61F 2/958; A61M 25/00;
A61M 39/00; A61M 27/00; A61M
25/0043; A61M 25/0067; A61M 25/0097
See application file for complete search history.

DESCRIPTION

FIG. 1 is a top perspective view of a heart valve docking
coil;
FIG. 2 is a bottom perspective view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is a right side elevation view thereof;
FIG. 6 is a left side elevation view thereof;
FIG. 7 is a front elevation view thereof; and,
FIG. 8 is a rear elevation view thereof.

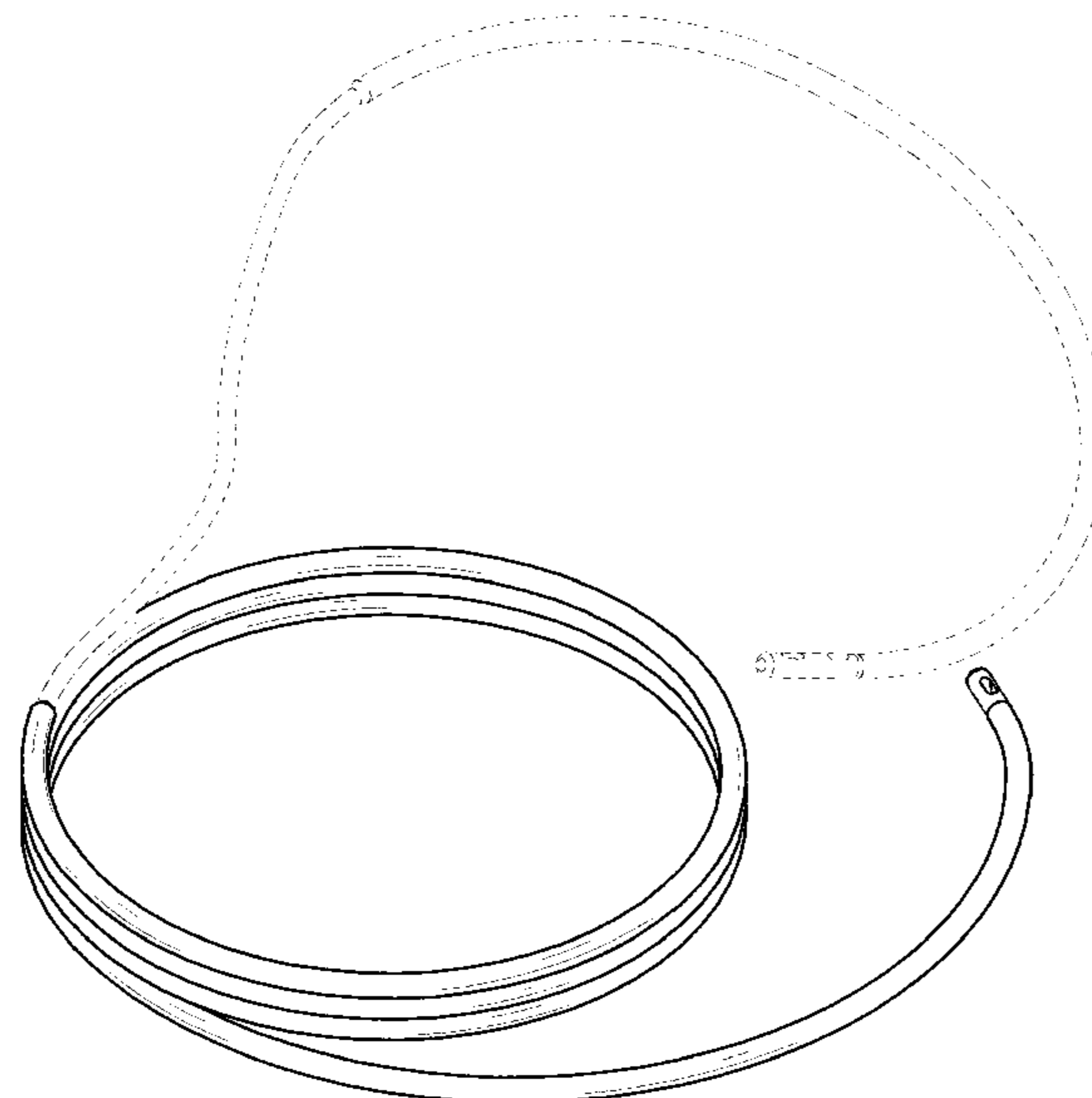
(56) **References Cited**

U.S. PATENT DOCUMENTS

4,035,849 A 7/1977 Angell et al.
4,781,704 A * 11/1988 Potter A61J 15/0003
604/105

The broken line showing of parts of the drawings is included
for the purpose of illustrating use and environment and
forms no part of the claimed design.

1 Claim, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS							
5,762,637	A *	6/1998	Berg	A61M 25/001	2002/0107535 A1	8/2002	Wei et al.
				604/264	2002/0151970 A1	10/2002	Garrison et al.
5,840,081	A	11/1998	Andersen et al.		2003/0225420 A1	12/2003	Wardle
6,168,614	B1	1/2001	Andersen et al.		2004/0111006 A1	6/2004	Alferness et al.
6,391,018	B1 *	5/2002	Tanaka	A61M 25/0041	2004/0193260 A1	9/2004	Alferness et al.
				604/164.13	2004/0260389 A1	12/2004	Case et al.
6,405,414	B1 *	6/2002	Byrnes	A61M 25/00	2005/0096736 A1	5/2005	Osse et al.
				24/339	2005/0119682 A1	6/2005	Nguyen et al.
6,419,696	B1	7/2002	Ortiz et al.		2005/0119735 A1	6/2005	Spence et al.
6,425,916	B1	7/2002	Garrison et al.		2005/0137691 A1	6/2005	Salahieh et al.
6,432,134	B1	8/2002	Anson et al.		2005/0182486 A1	8/2005	Gabbay
6,458,153	B1	10/2002	Bailey et al.		2005/0203614 A1	9/2005	Forster et al.
6,527,979	B2	3/2003	Constantz et al.		2005/0203617 A1	9/2005	Forster et al.
6,582,462	B1	6/2003	Andersen et al.		2006/0025857 A1	2/2006	Bergheim et al.
6,652,578	B2	11/2003	Bailey et al.		2006/0195134 A1	8/2006	Crittenden
6,730,121	B2	5/2004	Ortiz et al.		2006/0229561 A1	10/2006	Huszar
6,797,002	B2	9/2004	Spence et al.		2007/0010877 A1	1/2007	Salahieh et al.
6,908,481	B2	6/2005	Cribier		2007/0027533 A1	2/2007	Douk
7,018,408	B2	3/2006	Bailey et al.		2007/0203575 A1	8/2007	Forster et al.
7,037,334	B1	5/2006	Hlavka et al.		2007/0265700 A1	11/2007	Eliassen et al.
7,077,861	B2	7/2006	Spence		2007/0293808 A1	12/2007	Williams et al.
7,101,395	B2	9/2006	Tremulis et al.		2008/0033542 A1	2/2008	Antonsson et al.
7,125,421	B2	10/2006	Tremulis et al.		2008/0077235 A1	3/2008	Kirson
7,314,485	B2	1/2008	Mathis		2008/0125853 A1	5/2008	Bailey et al.
7,377,941	B2	5/2008	Rhee et al.		2008/0172034 A1	7/2008	Patton
7,445,632	B2	11/2008	McGuckin, Jr. et al.		2008/0172035 A1	7/2008	Starksen et al.
7,585,321	B2	9/2009	Cribier		2008/0208330 A1	8/2008	Keranen
7,618,446	B2	11/2009	Andersen et al.		2009/0192601 A1	7/2009	Rafiee et al.
7,637,946	B2	12/2009	Solem et al.		2009/0319037 A1	12/2009	Rowe et al.
7,708,775	B2	5/2010	Rowe et al.		2010/0036484 A1	2/2010	Hariton et al.
7,737,060	B2	6/2010	Strickler et al.		2010/0145440 A1	6/2010	Keranen
7,740,614	B2 *	6/2010	Murashita	A61M 5/158	2010/0312333 A1	12/2010	Navia et al.
				604/164.01	2010/0318184 A1	12/2010	Spence
7,785,366	B2	8/2010	Maurer et al.		2010/0318184 A1	12/2010	Spence
7,857,770	B2 *	12/2010	Raulerson	A61M 25/0105	2012/0059458 A1	3/2012	Buchbinder et al.
				600/585	2012/0123529 A1	5/2012	Levi et al.
7,942,927	B2	5/2011	Kaye et al.		2012/0197379 A1	8/2012	Laske et al.
7,951,195	B2	5/2011	Antonsson et al.		2012/0283820 A1	11/2012	Tseng et al.
8,128,691	B2	3/2012	Keranen		2013/0006352 A1	1/2013	Yaron
8,142,492	B2	3/2012	Forster et al.		2013/0190865 A1	7/2013	Anderson
8,182,529	B2	5/2012	Gordon et al.		2013/0304197 A1	11/2013	Buchbinder et al.
8,236,049	B2	8/2012	Rowe et al.		2014/0074299 A1	3/2014	Endou et al.
8,323,335	B2	12/2012	Rowe et al.		2014/0081394 A1	3/2014	Keranen et al.
8,360,988	B2 *	1/2013	Bobo, Sr.	A61M 25/0097	2014/0172070 A1	6/2014	Seguin
				600/561	2014/0214159 A1	7/2014	Vidlund et al.
8,377,115	B2	2/2013	Thompson		2014/0324163 A1	10/2014	Keranen et al.
8,388,680	B2	3/2013	Starksen et al.		2014/0358222 A1	12/2014	Gorman, III et al.
8,398,708	B2	3/2013	Meiri et al.		2014/0379074 A1	12/2014	Spence et al.
8,449,605	B2	5/2013	Lichtenstein et al.		2015/0025623 A1	1/2015	Granada et al.
8,449,606	B2	5/2013	Eliassen et al.		2015/0039082 A1	2/2015	Keranen
8,454,683	B2	6/2013	Rafiee et al.		2015/0230921 A1	8/2015	Chau et al.
8,657,872	B2	2/2014	Seguin		2015/0245910 A1	9/2015	Righini et al.
8,663,322	B2	3/2014	Keranen		2015/0282931 A1	10/2015	Brunnett et al.
8,672,998	B2	3/2014	Lichtenstein et al.		2015/0335428 A1	11/2015	Keranen
8,685,086	B2	4/2014	Navia et al.		2015/0335430 A1	11/2015	Loulmet et al.
8,734,507	B2	5/2014	Keranen		2015/0374493 A1	12/2015	Yaron et al.
8,801,776	B2	8/2014	House et al.		2016/0015514 A1	1/2016	Lashinski et al.
8,864,823	B2	10/2014	Cartledge et al.		2016/0074165 A1	3/2016	Spence et al.
8,931,637	B2 *	1/2015	Deeds	A61M 25/002	2016/0095705 A1	4/2016	Keranen et al.
				206/364	2016/0143732 A1	5/2016	Glimsdale
9,078,747	B2	7/2015	Conklin		2016/0184095 A1	6/2016	Spence et al.
9,095,434	B2	8/2015	Rowe		2016/0199177 A1	7/2016	Spence et al.
9,096,368	B2 *	8/2015	Wu	A61F 2/0095	2016/0228247 A1	8/2016	Maimon et al.
9,119,718	B2	9/2015	Keranen		2016/0256276 A1	9/2016	Yaron
9,192,471	B2	11/2015	Boiling		2016/0346080 A1	12/2016	Righini et al.
9,237,886	B2	1/2016	Seguin et al.		2017/0007399 A1	1/2017	Keranen
9,314,335	B2	4/2016	Konno		2017/0007402 A1	1/2017	Zerkowski et al.
9,364,326	B2	6/2016	Yaron		2017/0217385 A1	8/2017	Rinkleff et al.
9,463,268	B2	10/2016	Spence		2017/0266005 A1	9/2017	McGuckin, Jr.
9,474,599	B2	10/2016	Keranen		2017/0273788 A1	9/2017	O'Carroll et al.
9,597,205	B2	3/2017	Tuval		2017/0273789 A1	9/2017	Yaron et al.
9,622,863	B2	4/2017	Karapetian et al.		2017/0281337 A1	10/2017	Campbell
D809,136	S *	1/2018	Kirwan, Jr.	D24/127	2017/0281337 A1	10/2017	Campbell
2002/0032481	A1	3/2002	Gabbay		2018/0000580 A1	1/2018	Wallace et al.
					2018/0085217 A1	3/2018	Lashinski et al.
					2018/0206074 A1	7/2018	Tanasa et al.
					2018/0289481 A1	10/2018	Dolan
					2018/0303606 A1	10/2018	Rothstein et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2018/0318073 A1 11/2018 Tseng et al.
2018/0318080 A1 11/2018 Quill et al.

FOREIGN PATENT DOCUMENTS

EP 0592410 B1 10/1995
EP 0850607 A1 7/1998
EP 1432369 A1 6/2004
EP 1521550 A2 4/2005
EP 1296618 B1 1/2008
EP 1827314 B1 12/2010
EP 2620125 A1 7/2013
EP 2726018 A2 5/2014
EP 2806829 A2 12/2014
WO 9117720 A1 11/1991
WO 0149213 A2 7/2001
WO 0154625 A1 8/2001
WO 0247575 A2 6/2002
WO 03020179 A1 3/2003

WO 03028558 A2 4/2003
WO 2005084595 A1 9/2005
WO 2005102015 A2 11/2005
WO 2006011127 A2 2/2006
WO 2005102015 A3 4/2007
WO 2007067942 A1 6/2007
WO 2009155561 A2 12/2009
WO 2010121076 A2 10/2010
WO 2012027116 A1 3/2012
WO 2012063228 A1 5/2012
WO 2013110722 A2 8/2013
WO 2013114214 A2 8/2013
WO 2015023579 A1 2/2015
WO 2015023862 A2 2/2015
WO 2015127264 A1 8/2015
WO 2015198125 A1 12/2015
WO 2016038017 A1 3/2016
WO 2016040881 A1 3/2016
WO 2016101529 A1 6/2016
WO 2016130820 A1 8/2016
WO 2017103833 A1 6/2017

* cited by examiner

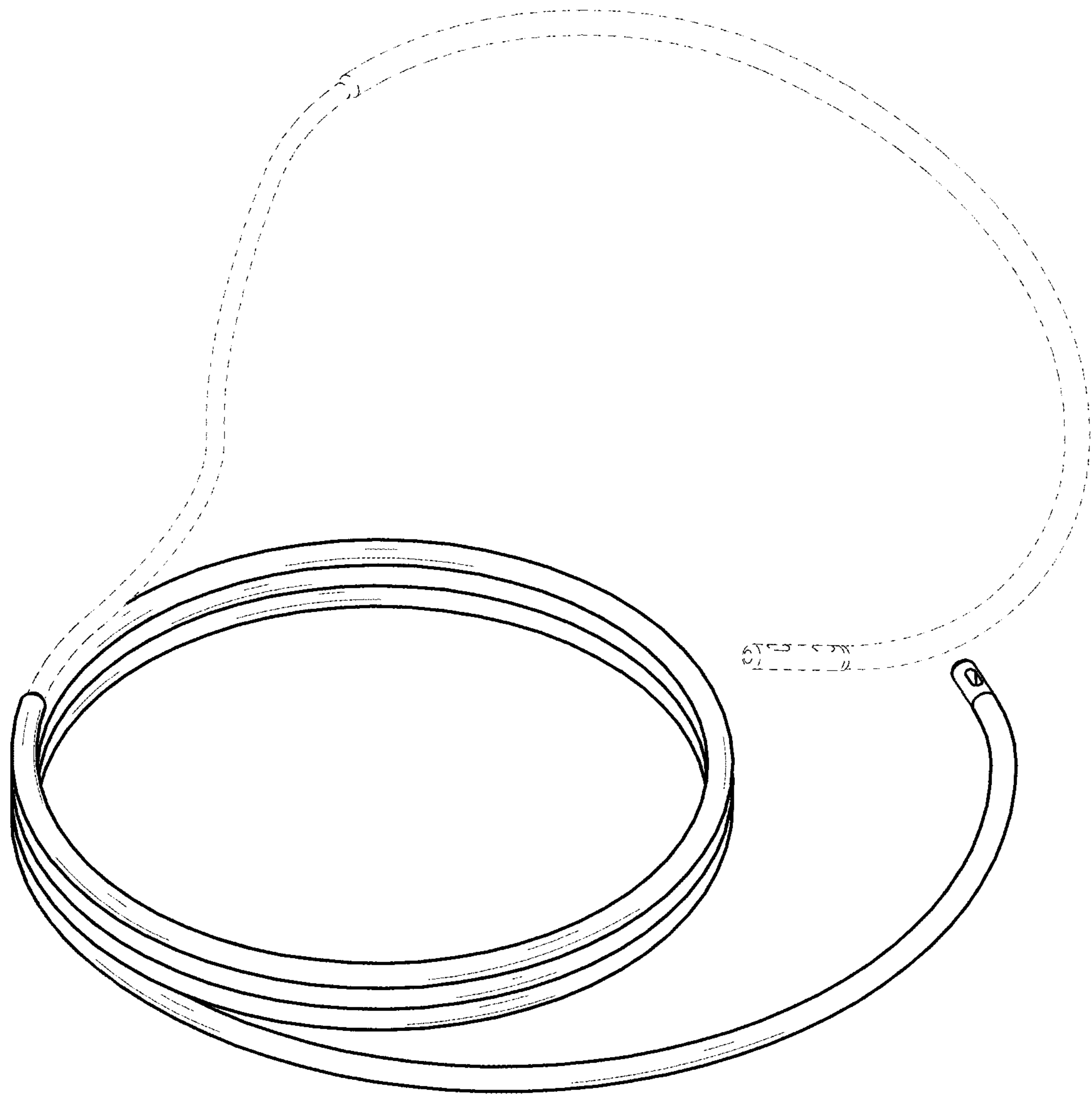


Fig. 1

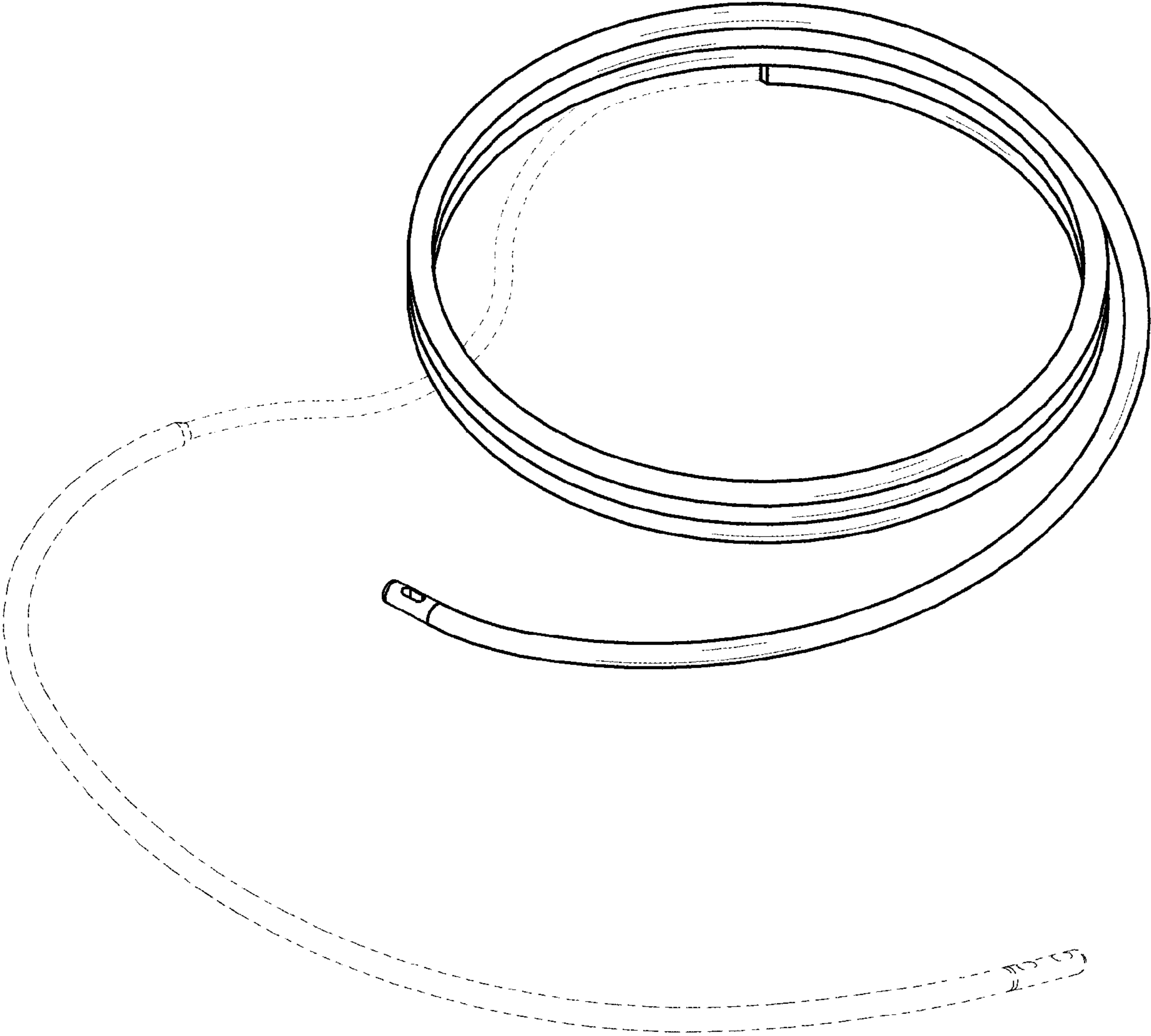


Fig. 2

Fig. 3

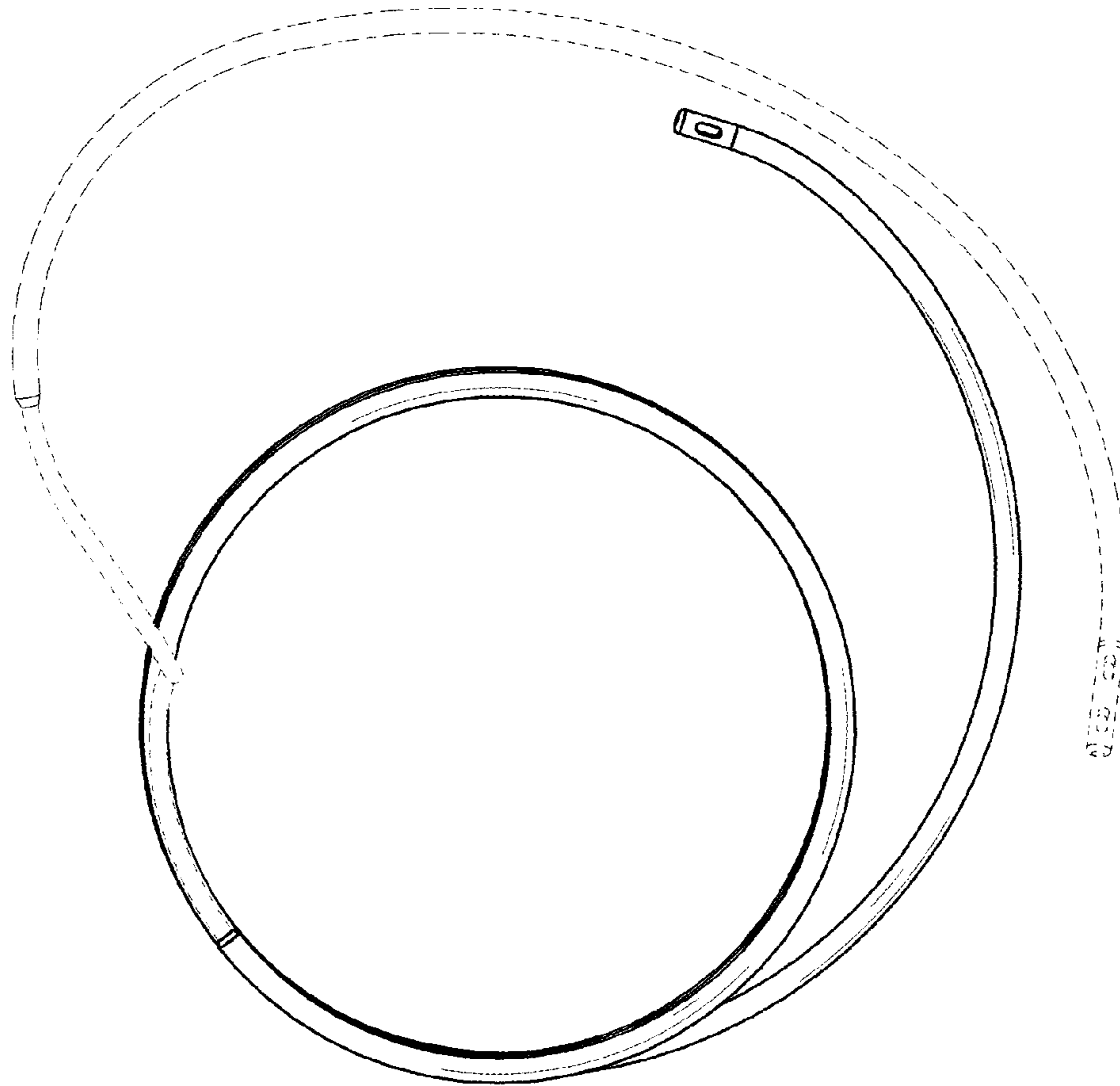
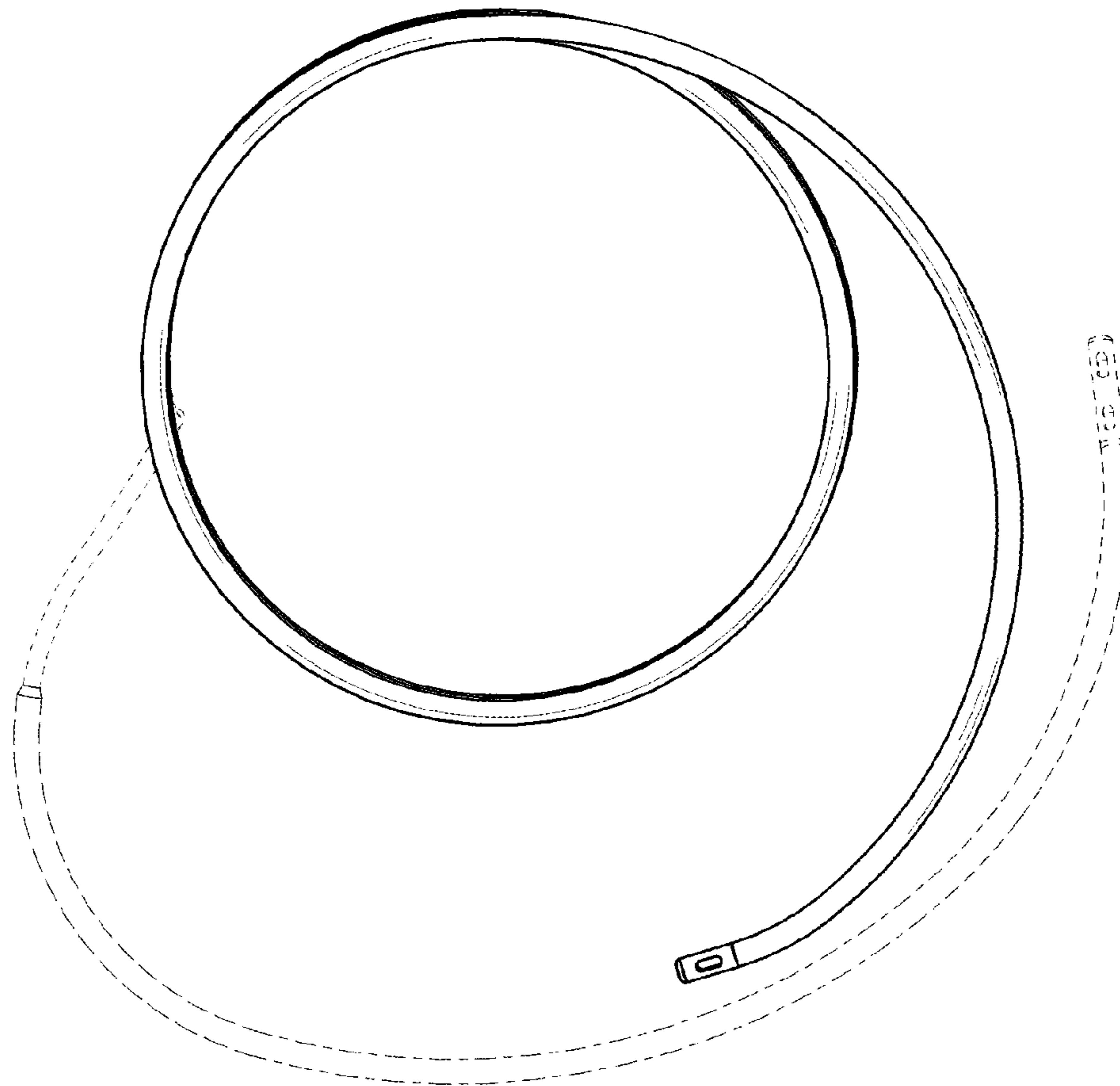


Fig. 4



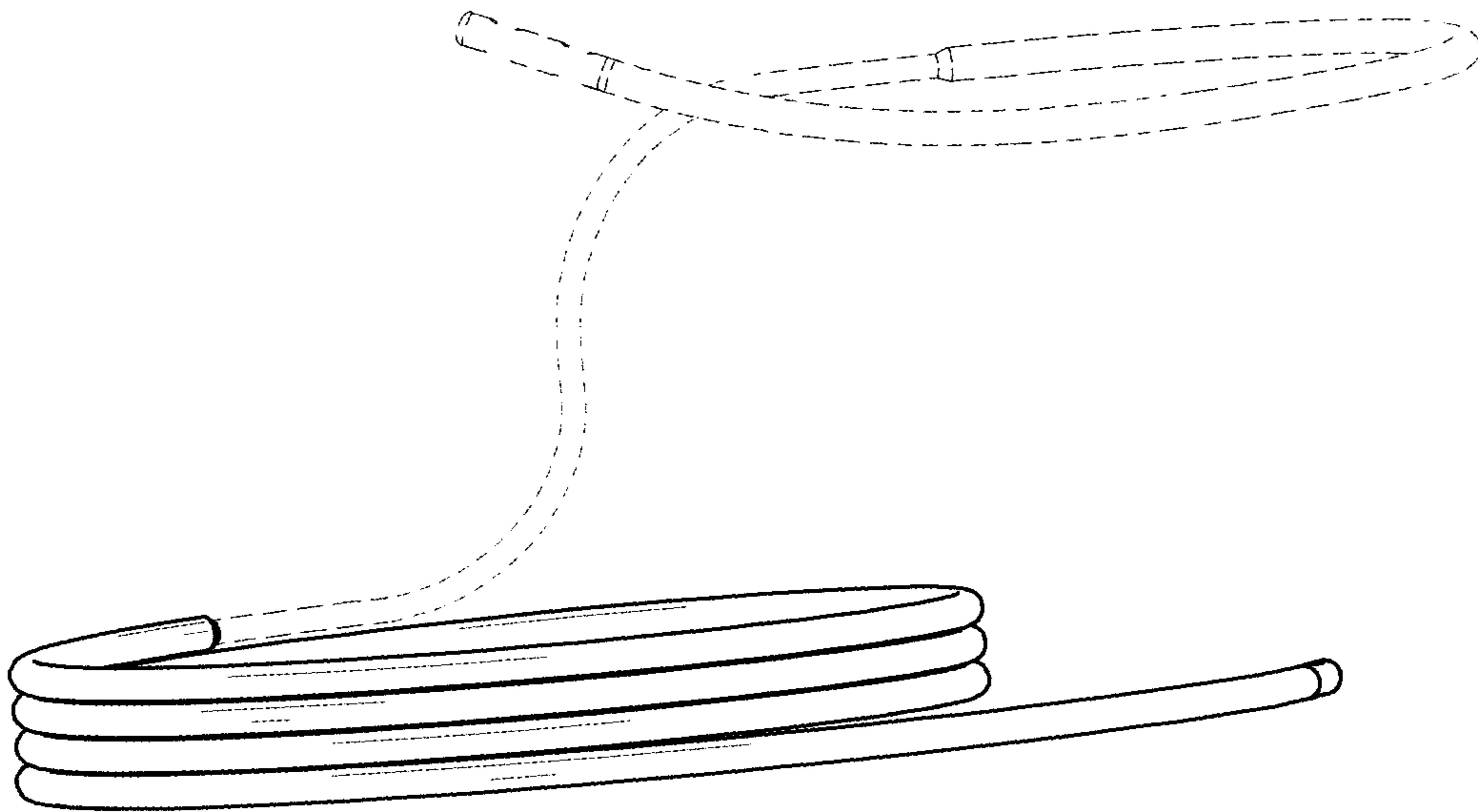


Fig. 5

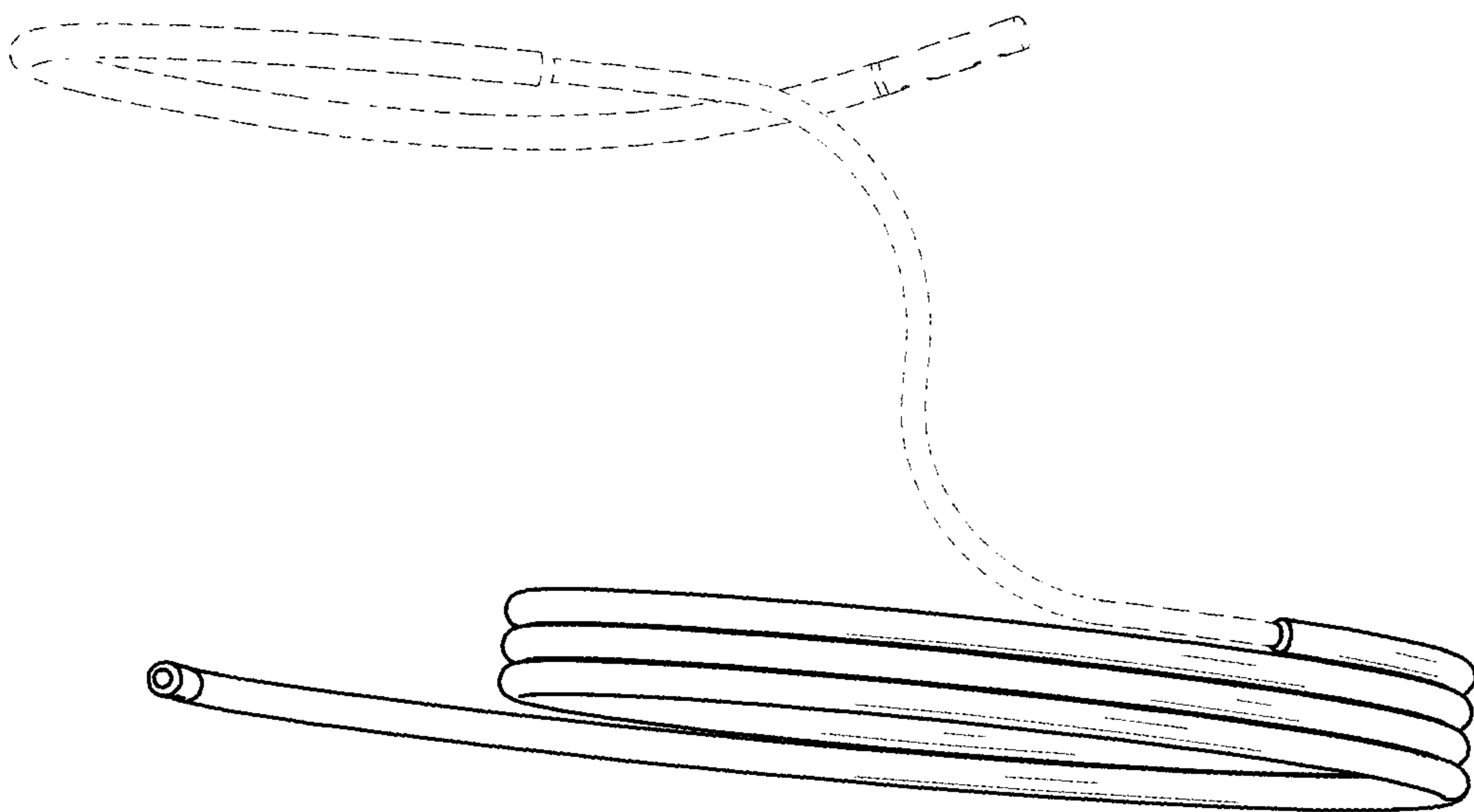


Fig. 6

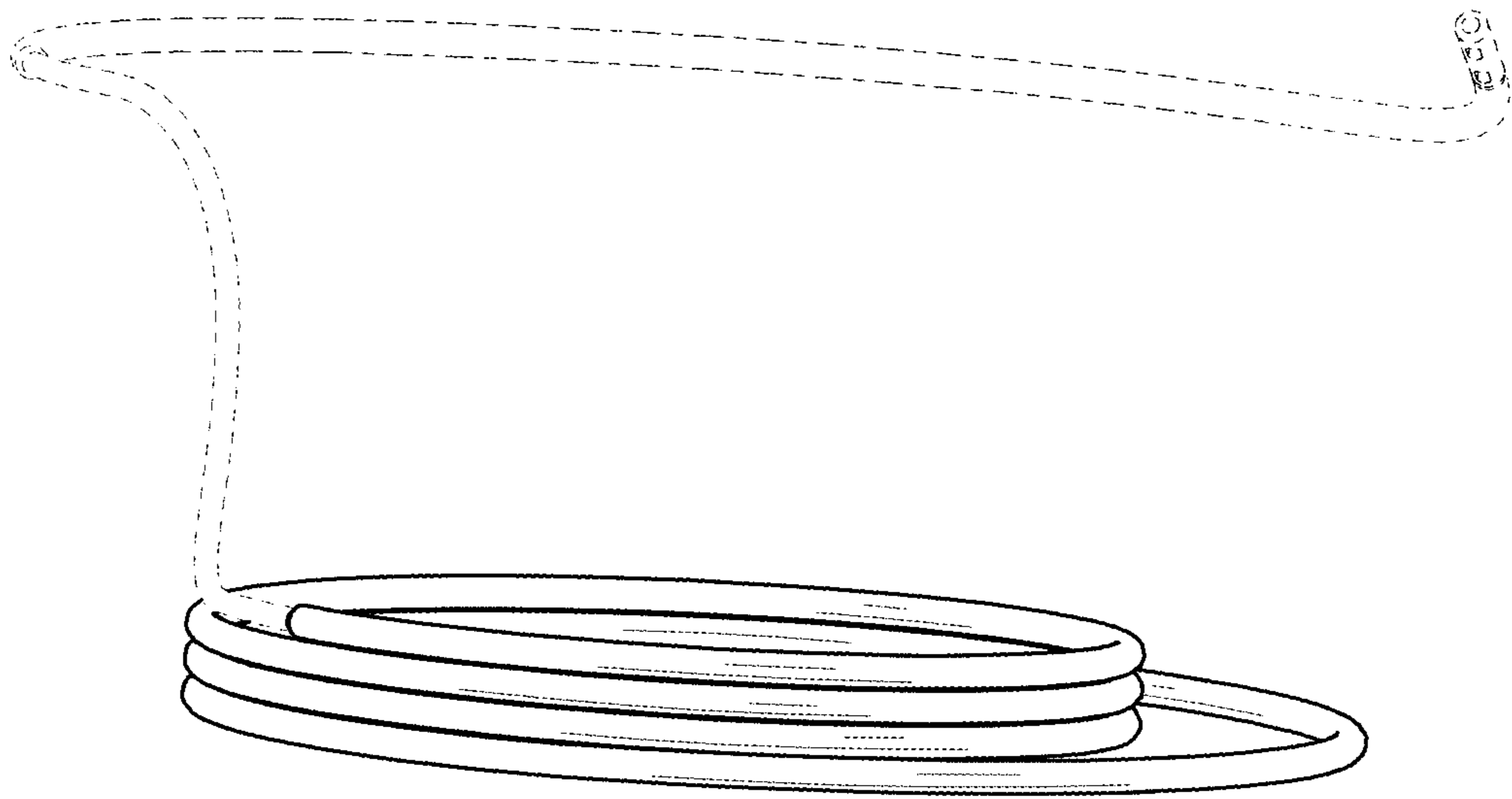


Fig. 7

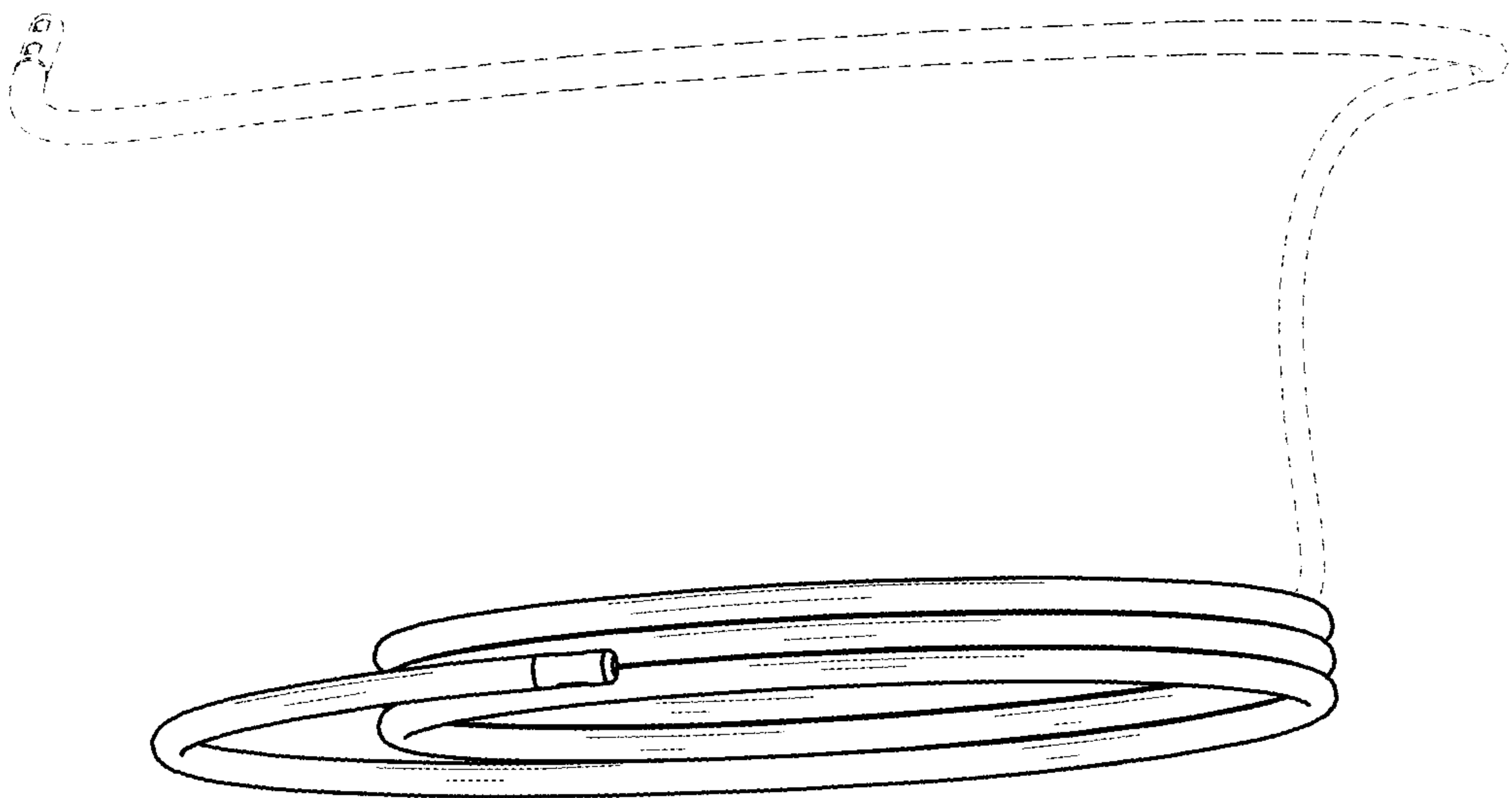


Fig. 8