



US00D976129S

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

(10) **Patent No.:** **US D976,129 S**  
(45) **Date of Patent:** **\*\* Jan. 24, 2023**

(54) **TEMPERATURE SENSOR**

**DESCRIPTION**

(71) Applicant: **KOKUSAI ELECTRIC CORPORATION**, Tokyo (JP)  
(72) Inventors: **Tokunobu Akao**, Toyama (JP); **Tetsuya Kosugi**, Toyama (JP)  
(73) Assignee: **KOKUSAI ELECTRIC CORPORATION**, Tokyo (JP)  
(\*\*) Term: **15 Years**  
(21) Appl. No.: **29/773,791**  
(22) Filed: **Mar. 11, 2021**  
(30) **Foreign Application Priority Data**  
Sep. 15, 2020 (JP) ..... 2020019645 D  
(51) **LOC (14) Cl.** ..... **10-04**  
(52) **U.S. Cl.**  
USPC ..... **D10/60**  
(58) **Field of Classification Search**  
USPC ..... D10/49, 50, 51, 52, 53, 54, 55, 56, 60  
(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

9,488,528 B2 \* 11/2016 Schlipf ..... G01K 7/02  
D780,606 S 3/2017 Osaka et al.  
(Continued)

**FOREIGN PATENT DOCUMENTS**

JP 1534939 S 10/2015

*Primary Examiner* — Antoine Duval Davis

(74) *Attorney, Agent, or Firm* — Fitch, Even, Tabin & Flannery, LLP

(57) **CLAIM**

The ornamental design for a temperature sensor, as shown and described.

FIG. 1 is an enlarged perspective view of a front, top and right side view of a temperature sensor showing our new design;  
FIG. 2 is a front elevational view thereof;  
FIG. 3 is a rear elevational view thereof;  
FIG. 4 is a left side elevational view thereof;  
FIG. 5 is a right side elevational view thereof;  
FIG. 6 is a top plan view thereof;  
FIG. 7 is a bottom plan view thereof.  
FIG. 8 is an enlarged portion left side elevational view thereof;  
FIG. 9 is an enlarged portion right side elevational view thereof;  
FIG. 10 is an enlarged portion view taken along line 10-10 in FIG. 2 thereof;  
FIG. 11 is an enlarged portion view taken along line 11-11 in FIG. 2 thereof;  
FIG. 12 is an enlarged portion view taken along line 12-12 in FIG. 2 thereof;  
FIG. 13 is an enlarged portion view taken along line 13-13 in FIG. 2 thereof;  
FIG. 14 is an enlarged portion view taken along line 14-14 in FIG. 6 thereof;  
FIG. 15 is an enlarged portion view taken along line 15-15 in FIG. 6 thereof;  
FIG. 16 is an enlarged portion view taken along line 16-16 in FIG. 6 thereof;  
FIG. 17 is an enlarged portion view taken along line 17-17 in FIG. 6 thereof;  
FIG. 18 is an enlarged cross sectional taken along line 18-18 in FIG. 11 thereof;  
FIG. 19 is an enlarged cross sectional taken along line 19-19 in FIG. 11 thereof;  
FIG. 20 is an enlarged perspective view taken along line 20-20 in FIG. 11 thereof;  
FIG. 21 is an enlarged cross sectional taken along line 21-21 in FIG. 11 thereof;  
FIG. 22 is an enlarged cross sectional taken along line 22-22 in FIG. 11 thereof;  
FIG. 23 is an enlarged perspective view taken along line 23-23 in FIG. 11 thereof;

(Continued)



FIG. 24 is an enlarged cross sectional taken along line 24-24 in FIG. 11 thereof;  
FIG. 25 is an enlarged cross sectional taken along line 25-25 in FIG. 11 thereof;  
FIG. 26 is an enlarged perspective view taken along line 26-26 in FIG. 11 thereof;  
FIG. 27 is an enlarged cross sectional taken along line 27-27 in FIG. 12 thereof;  
FIG. 28 is an enlarged cross sectional taken along line 28-28 in FIG. 12 thereof;  
FIG. 29 is an enlarged perspective view taken along line 29-29 in FIG. 12 thereof;  
FIG. 30 is an enlarged cross sectional taken along line 30-30 in FIG. 13 thereof;  
FIG. 31 is an enlarged cross sectional taken along line 31-31 in FIG. 13 thereof;  
FIG. 32 is an enlarged perspective view taken along line 32-32 in FIG. 13 thereof;  
FIG. 33 is an enlarged cross sectional taken along line 33-33 in FIG. 13 thereof;  
FIG. 34 is an enlarged cross sectional taken along line 34-34 in FIG. 13 thereof; and,  
FIG. 35 is an enlarged perspective view taken along line 35-35 in FIG. 13.

The broken lines shown in the drawings represent portions of the temperature sensor that form no part of the claimed design.

**1 Claim, 18 Drawing Sheets**

(58) **Field of Classification Search**

CPC ..... G01K 7/02; G01K 7/023; G01K 7/026;  
G01K 7/028; G01K 7/04; G01K 7/06;  
G01K 7/08; G01K 7/10; G01K 7/12;  
G01K 7/13; G01K 7/14; G01K 1/12;  
G01K 1/08; G01K 1/125; G01K 1/10;  
G01K 1/105; C23C 16/52; H01L 21/22;  
H01L 21/31

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

9,791,328	B2 *	10/2017	Chu	.....	G01K 1/024
D803,075	S *	11/2017	Akao	.....	D10/60
9,816,879	B2 *	11/2017	Sannier	.....	G01K 13/02
D818,850	S *	5/2018	Akao	.....	D10/52
D819,463	S *	6/2018	Akao	.....	D10/60

\* cited by examiner

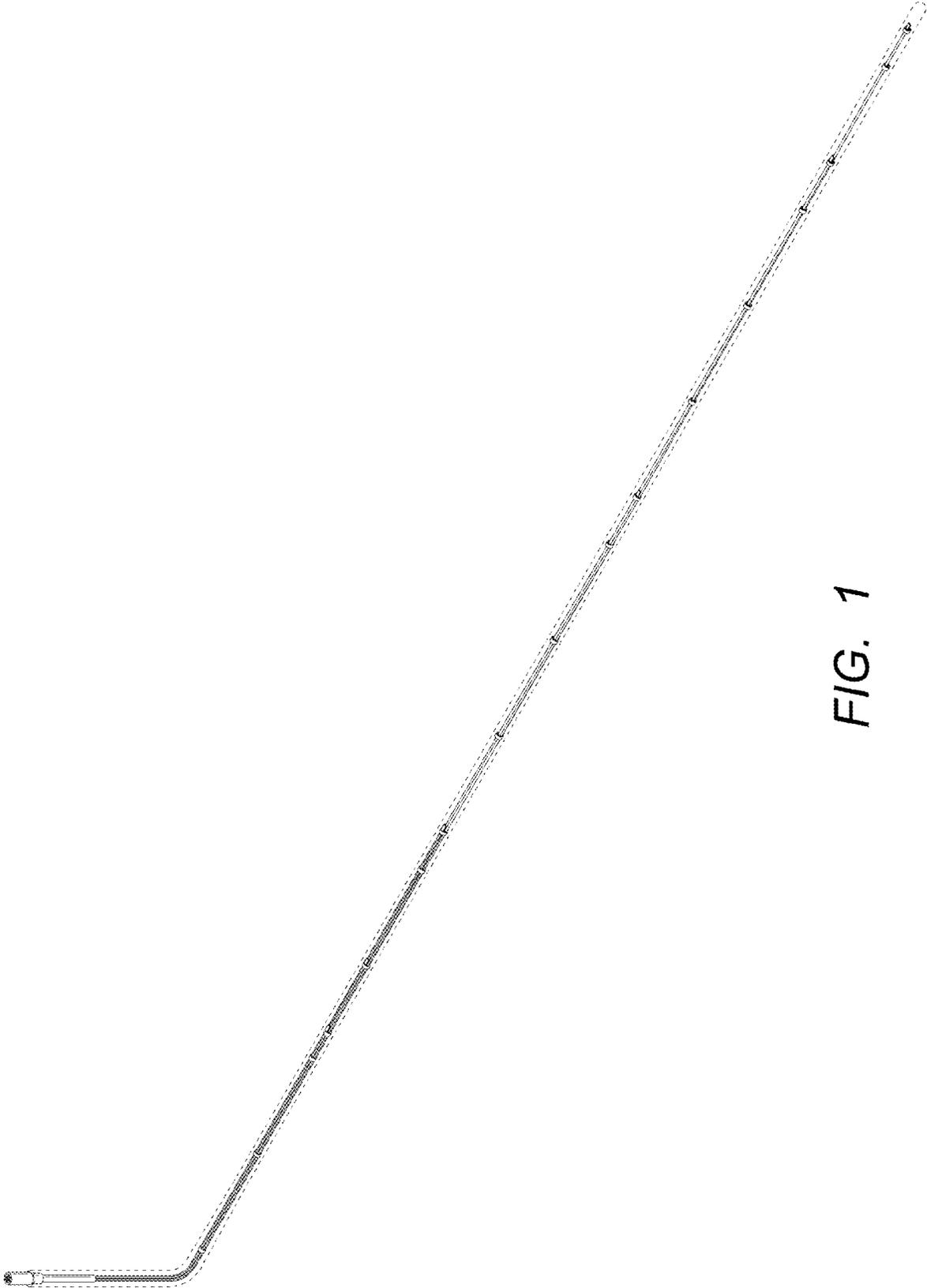


FIG. 1

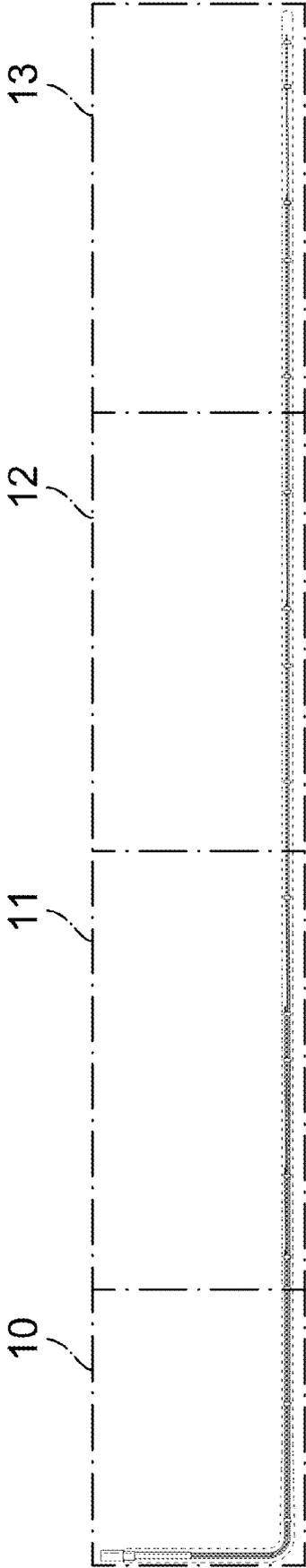


FIG. 2

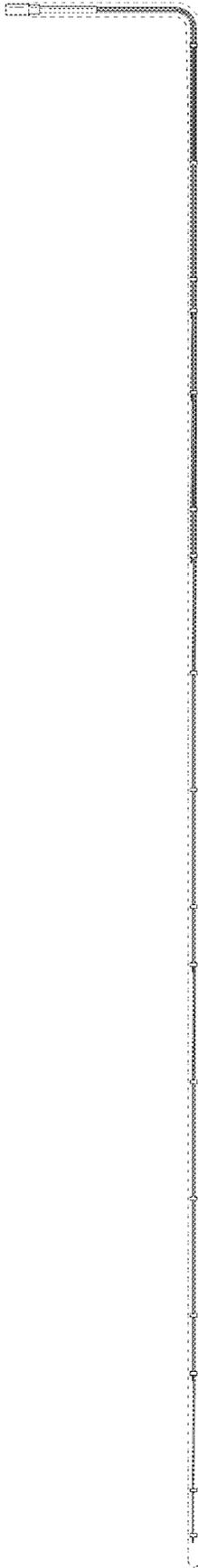


FIG. 3



FIG. 4      FIG. 5



FIG. 6

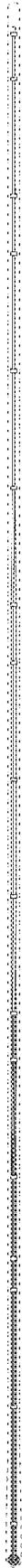


FIG. 7

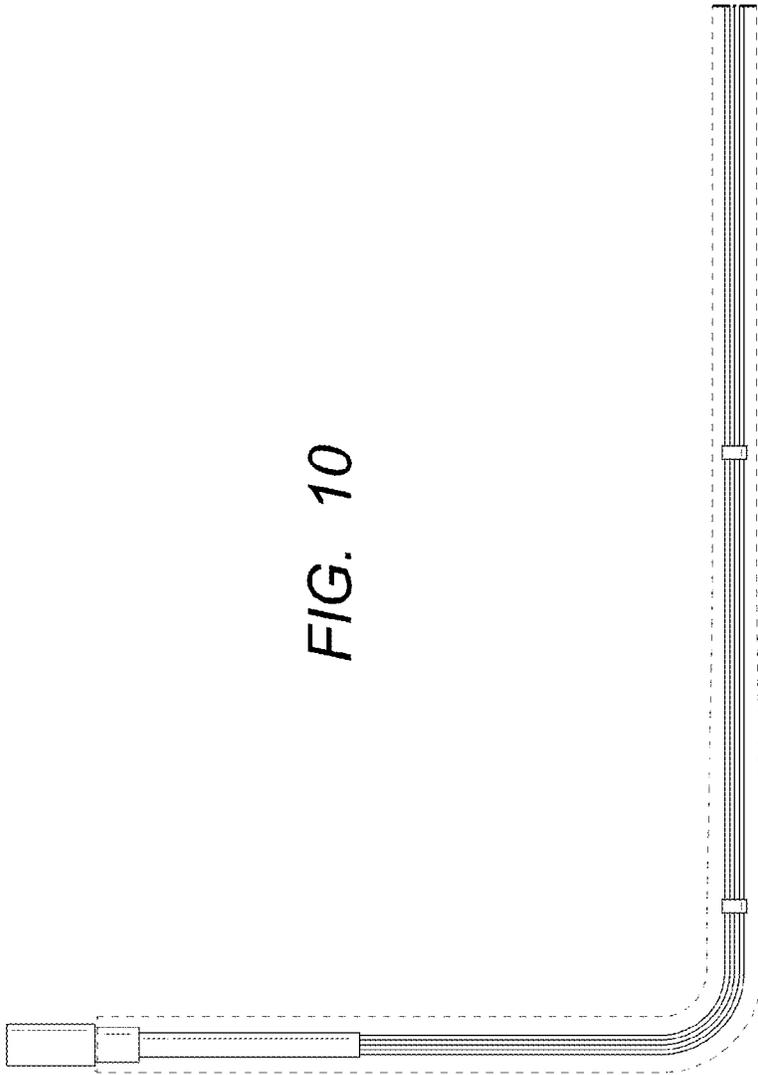


FIG. 10

FIG. 9

FIG. 8

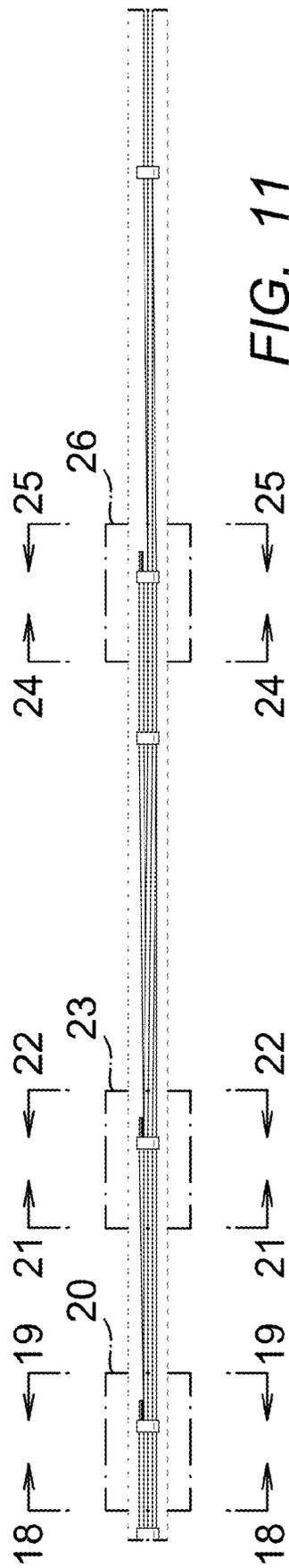


FIG. 11

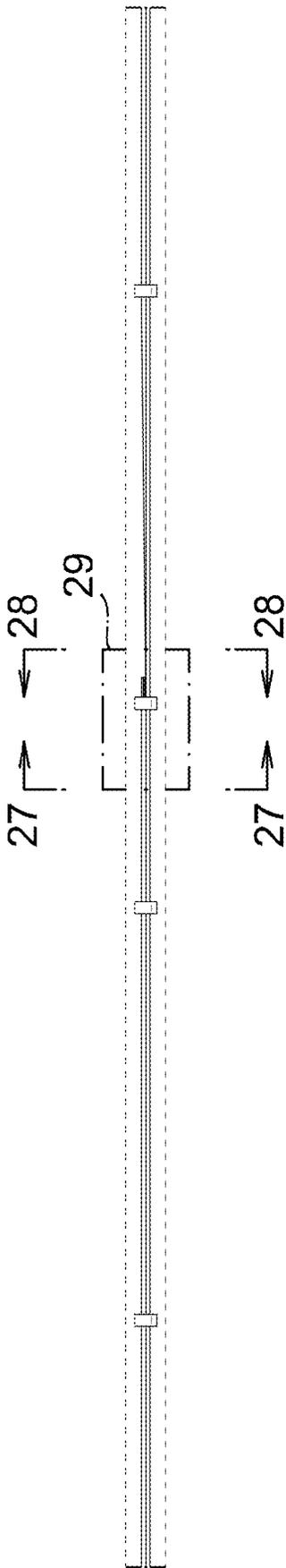


FIG. 12

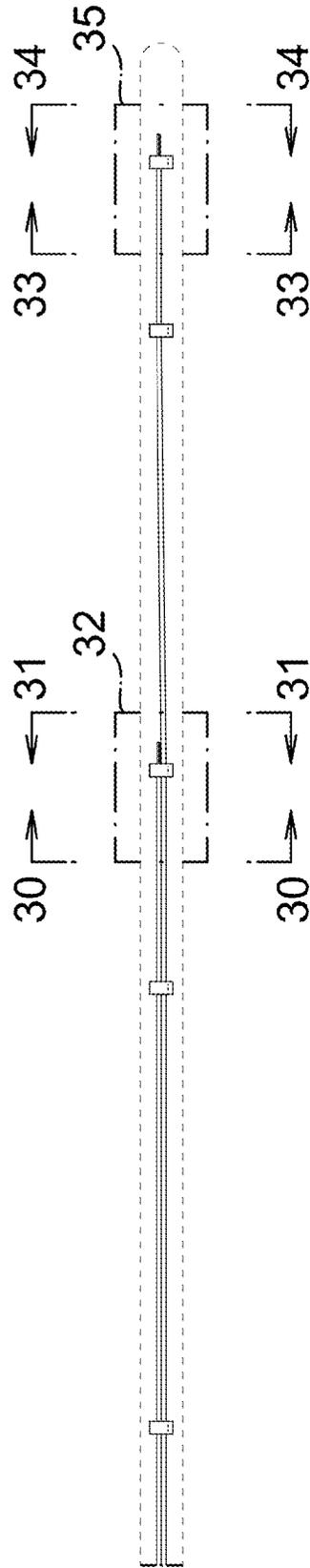


FIG. 13

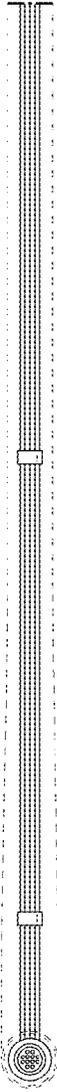


FIG. 14



FIG. 15



FIG. 16

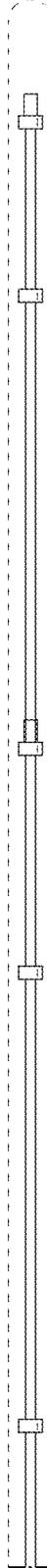


FIG. 17

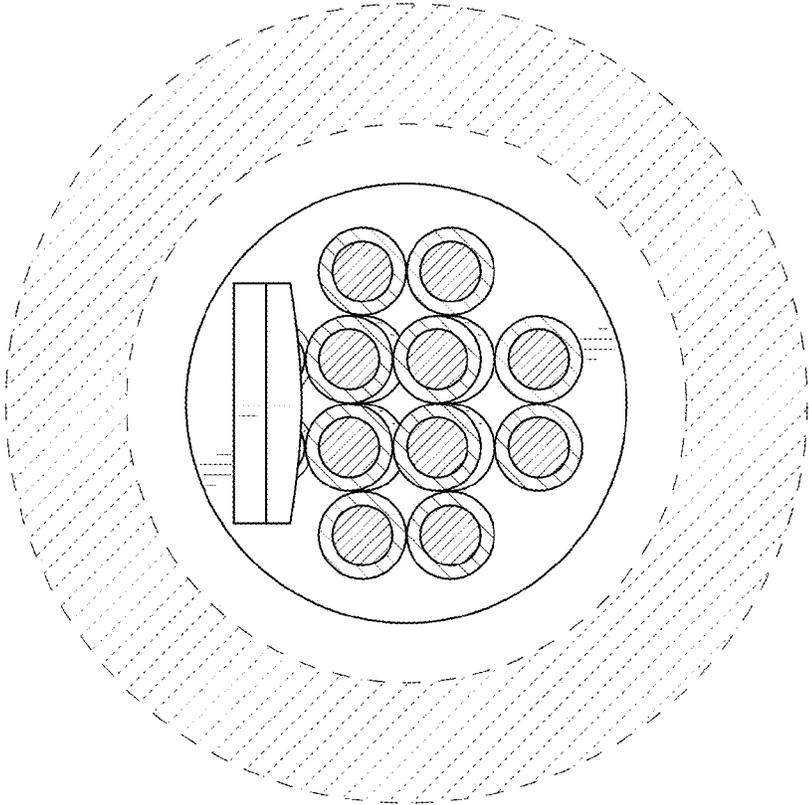


FIG. 19

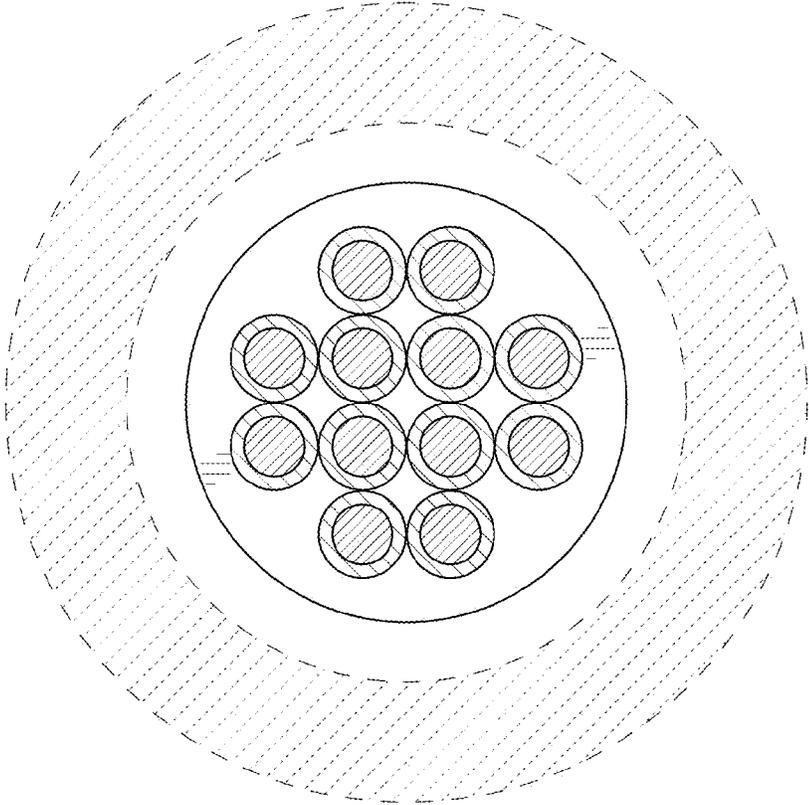


FIG. 18

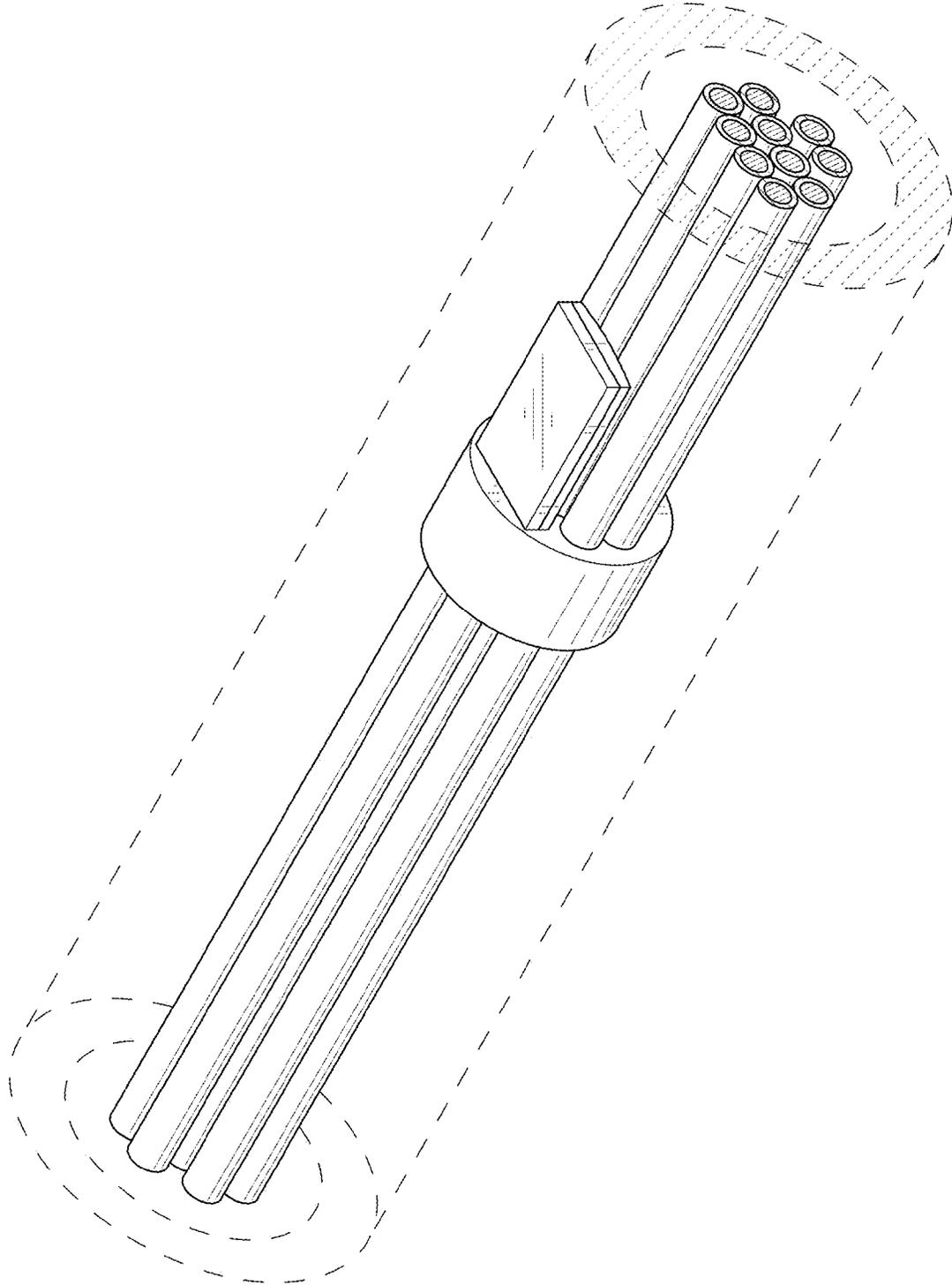


FIG. 20

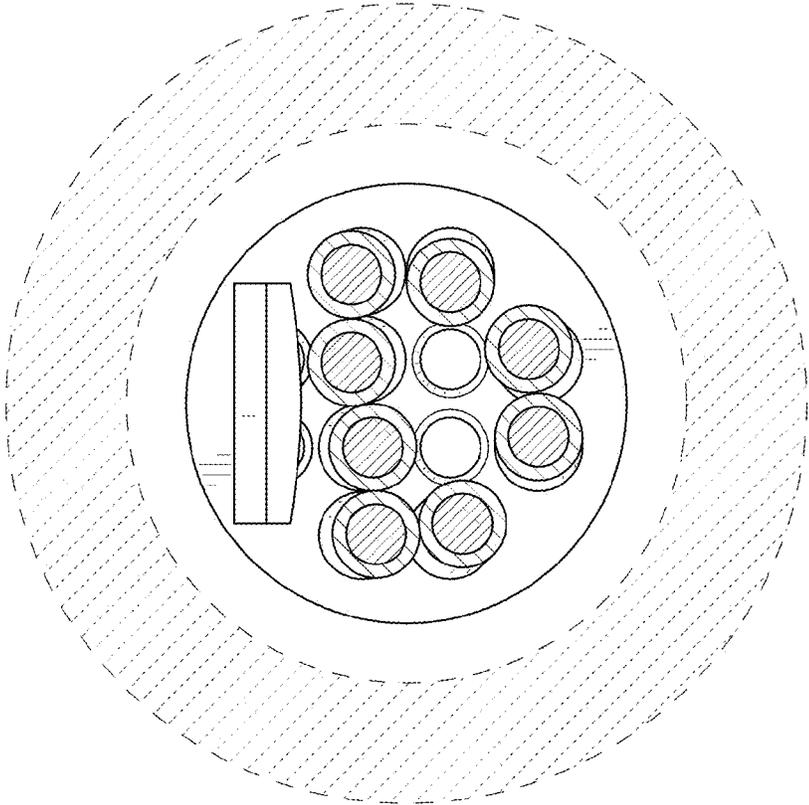


FIG. 22

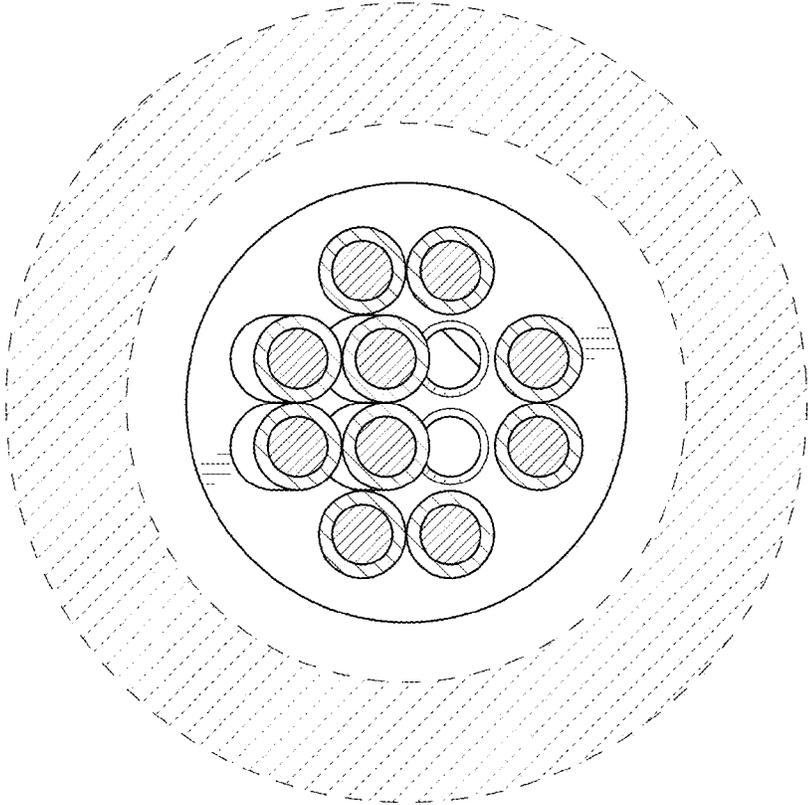


FIG. 21

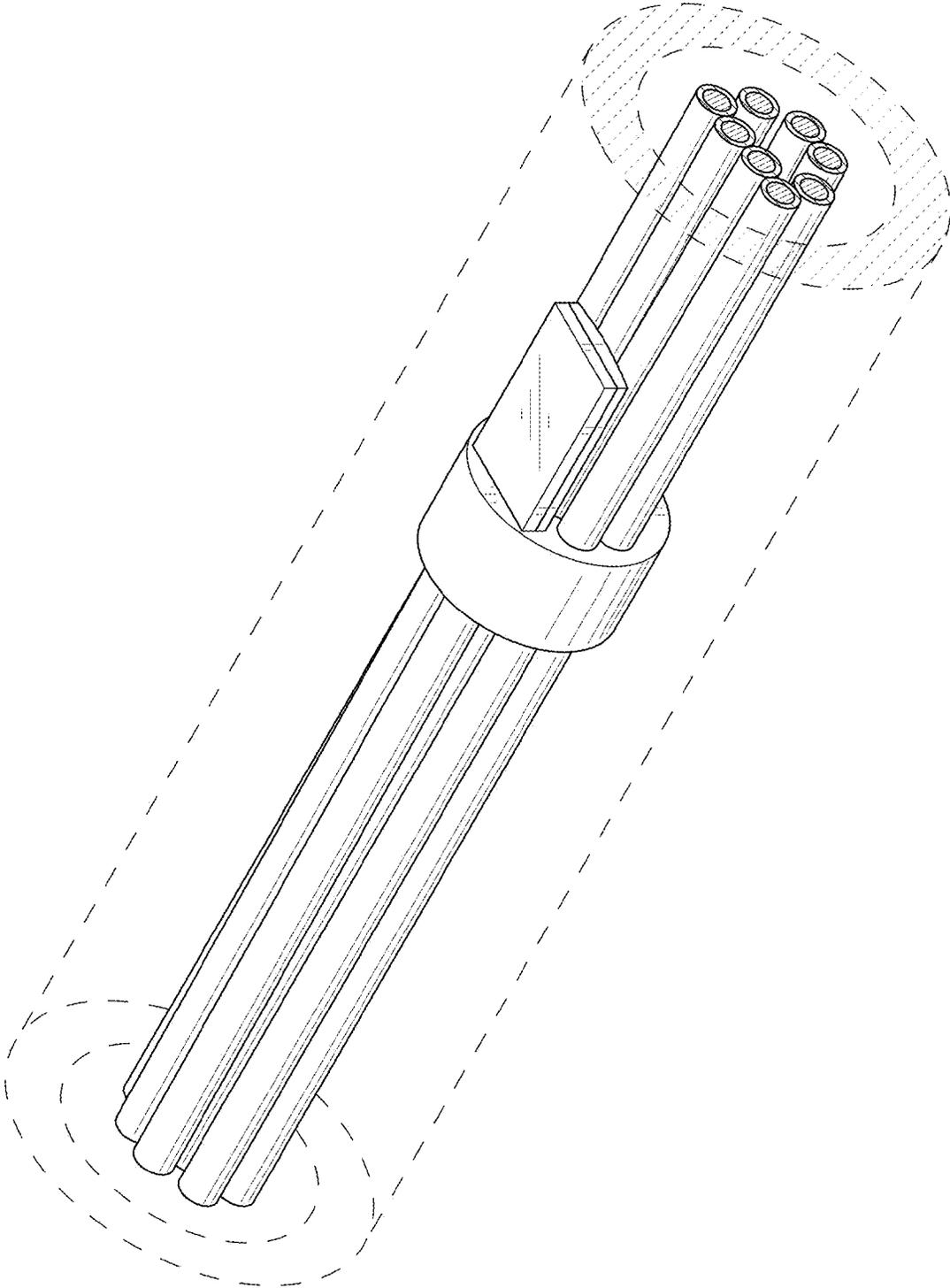


FIG. 23

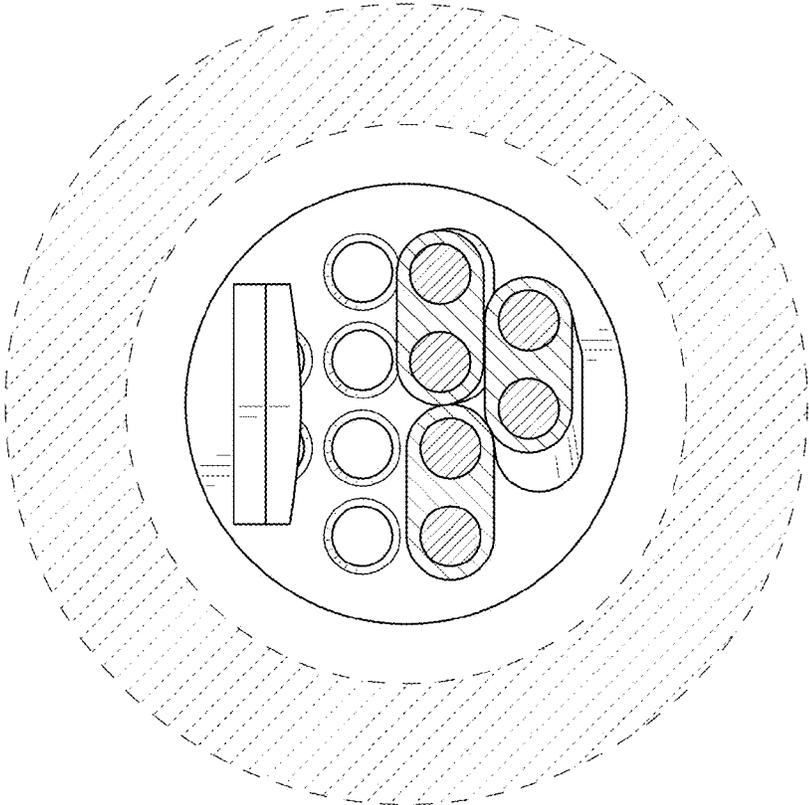


FIG. 25

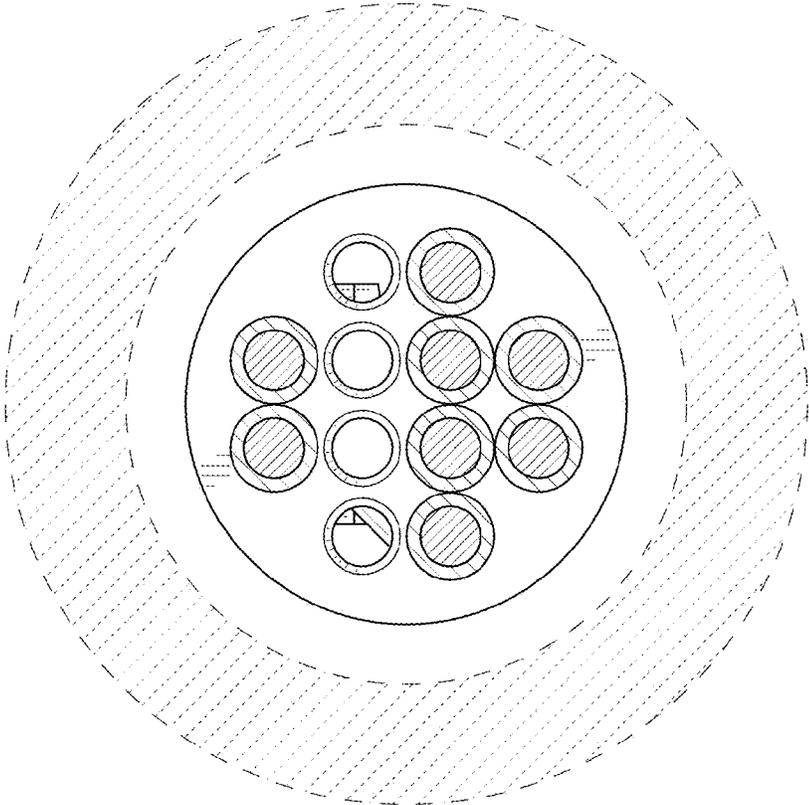


FIG. 24

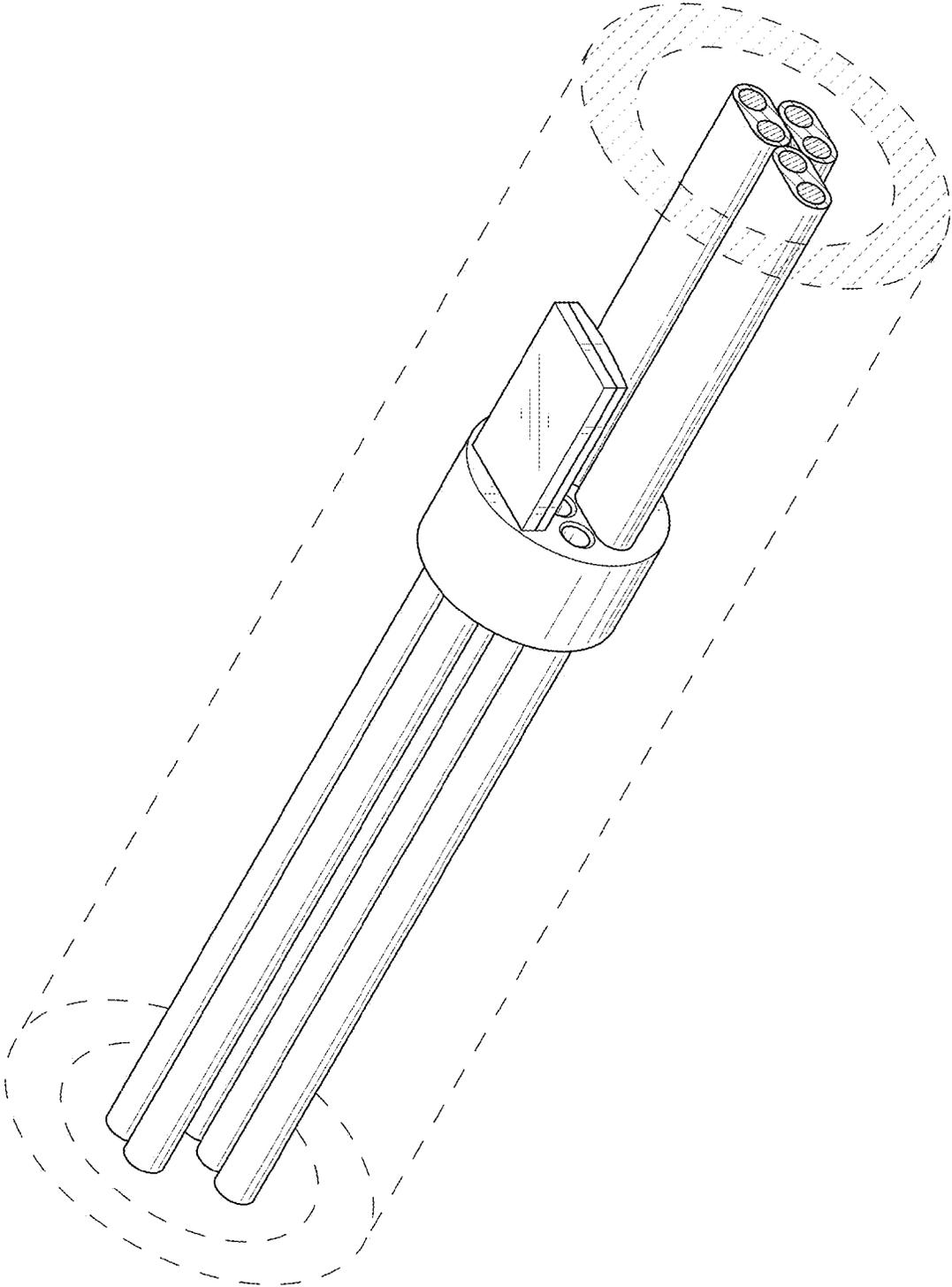


FIG. 26

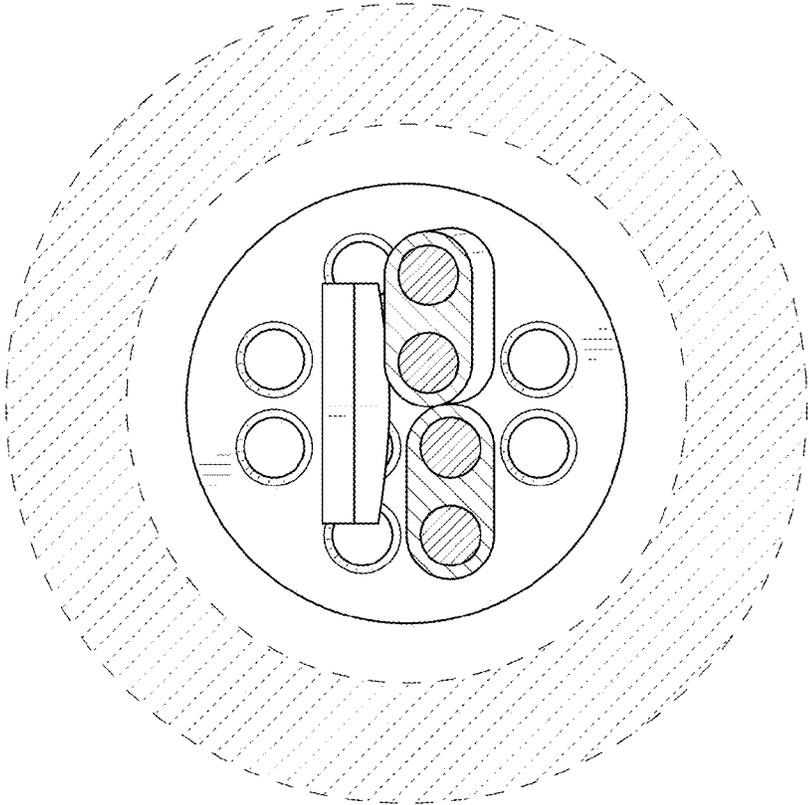


FIG. 28

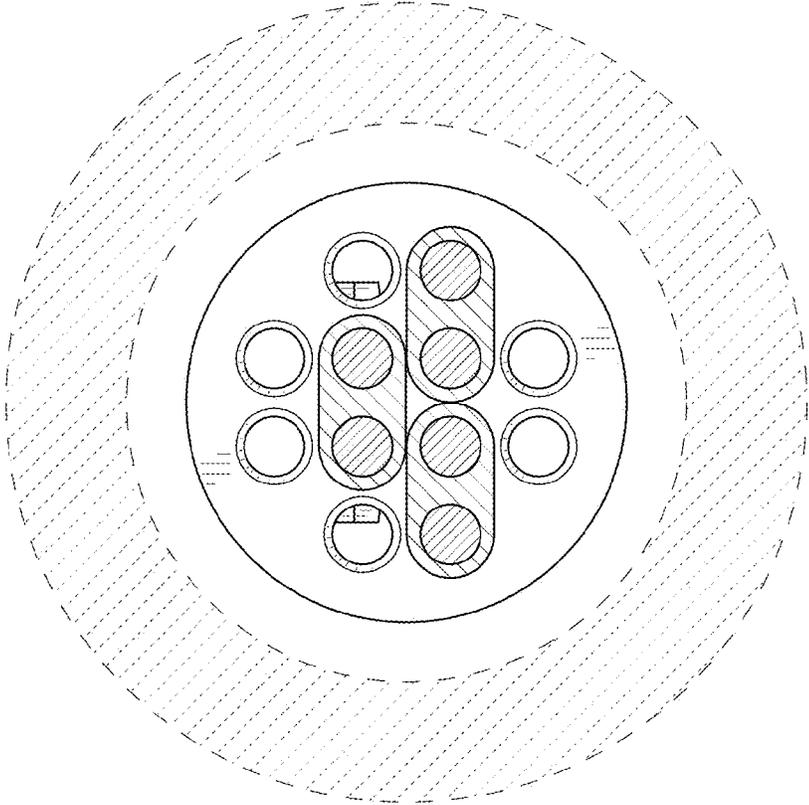


FIG. 27

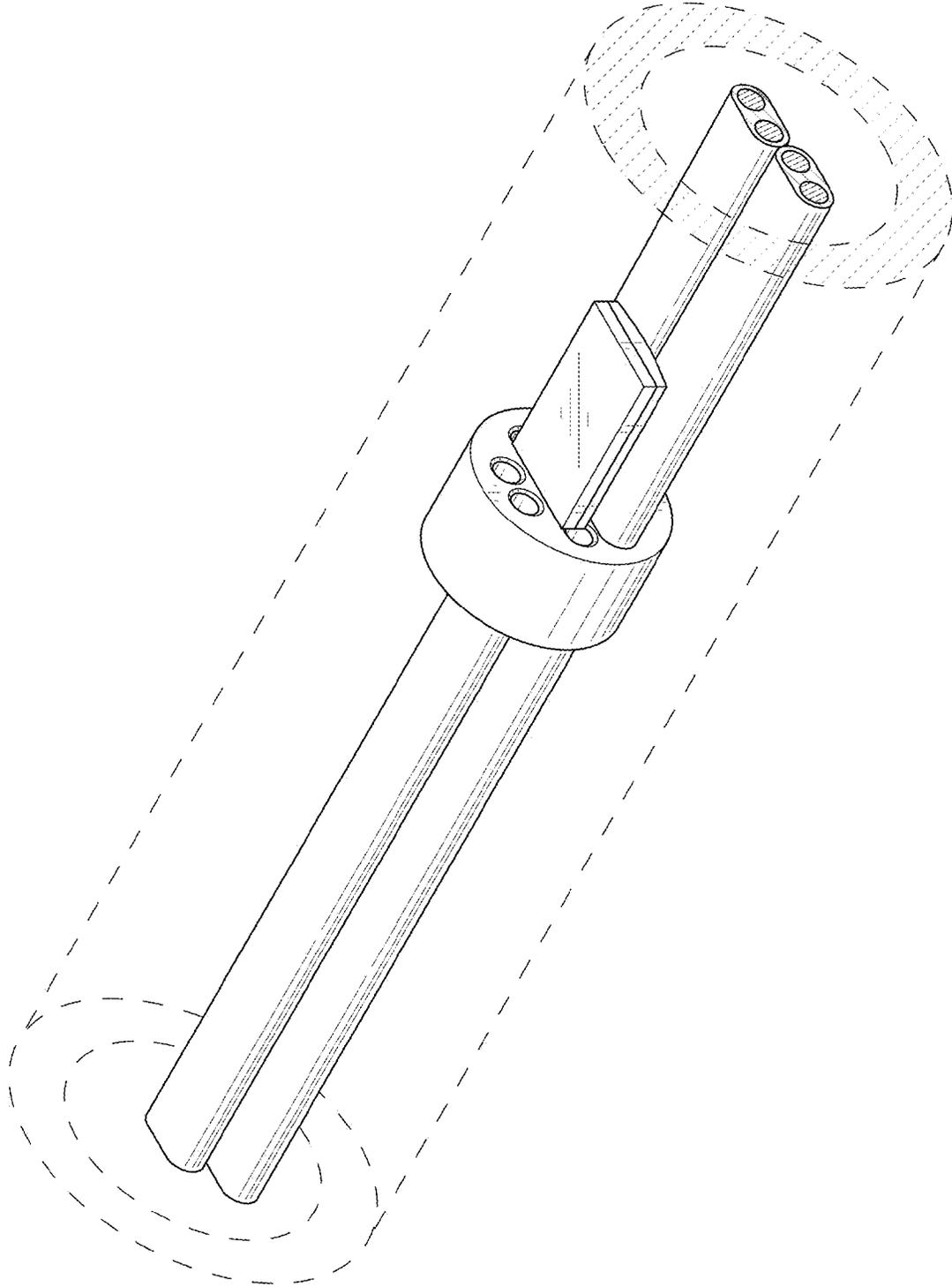


FIG. 29

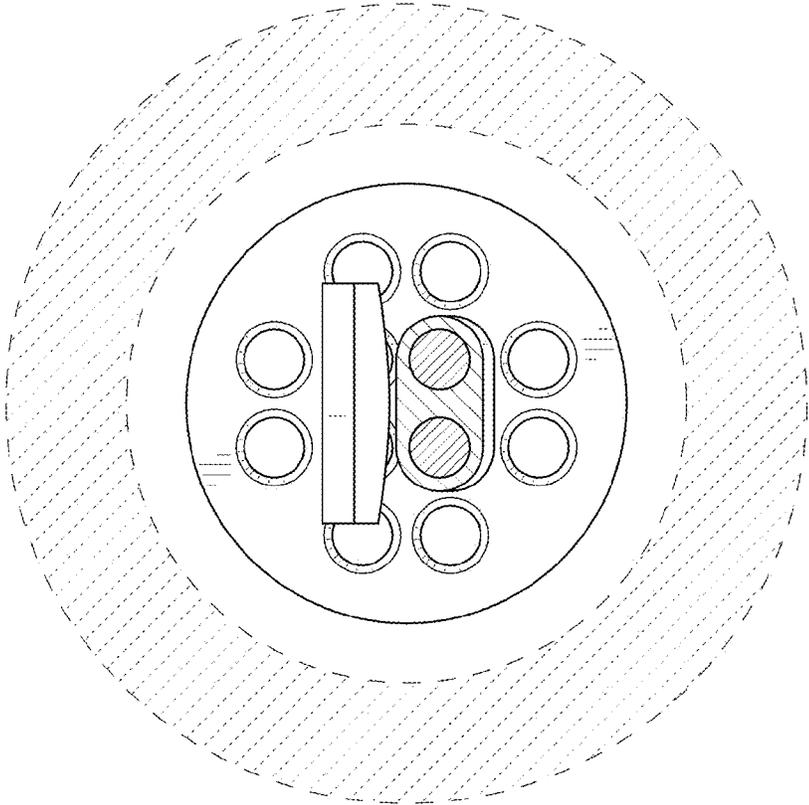


FIG. 31

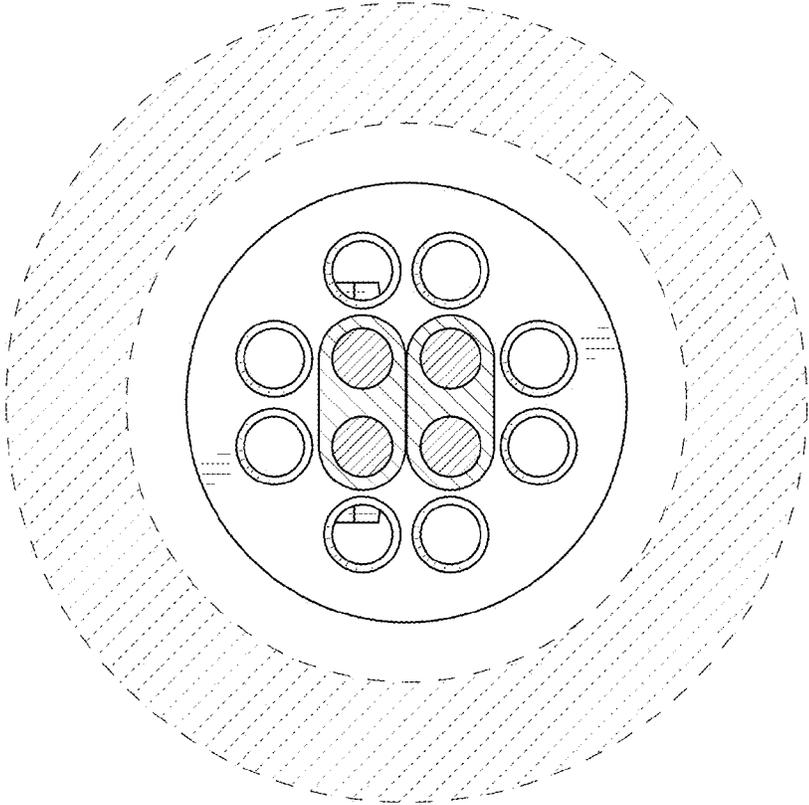


FIG. 30

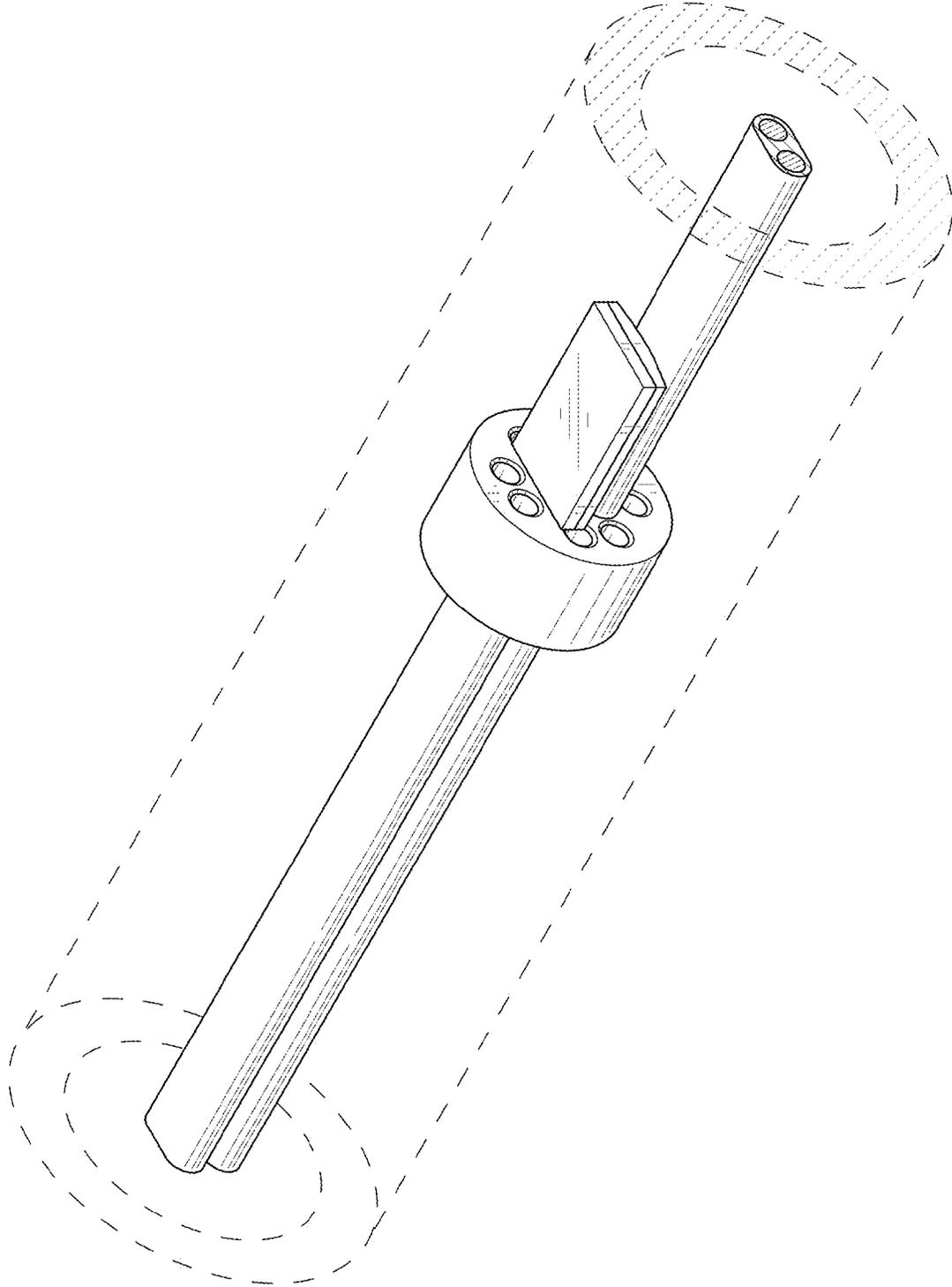


FIG. 32

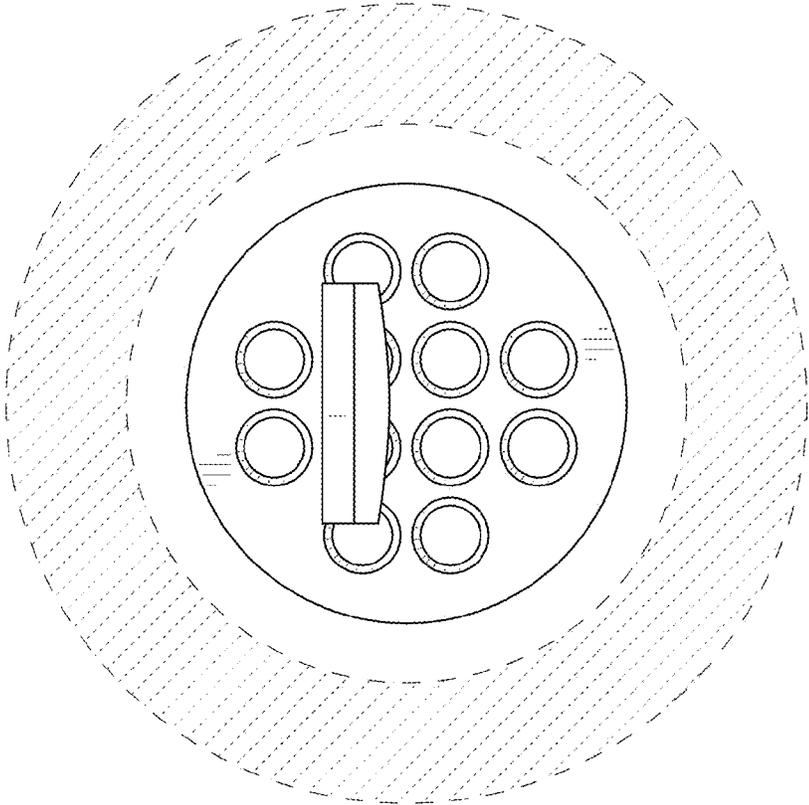


FIG. 34

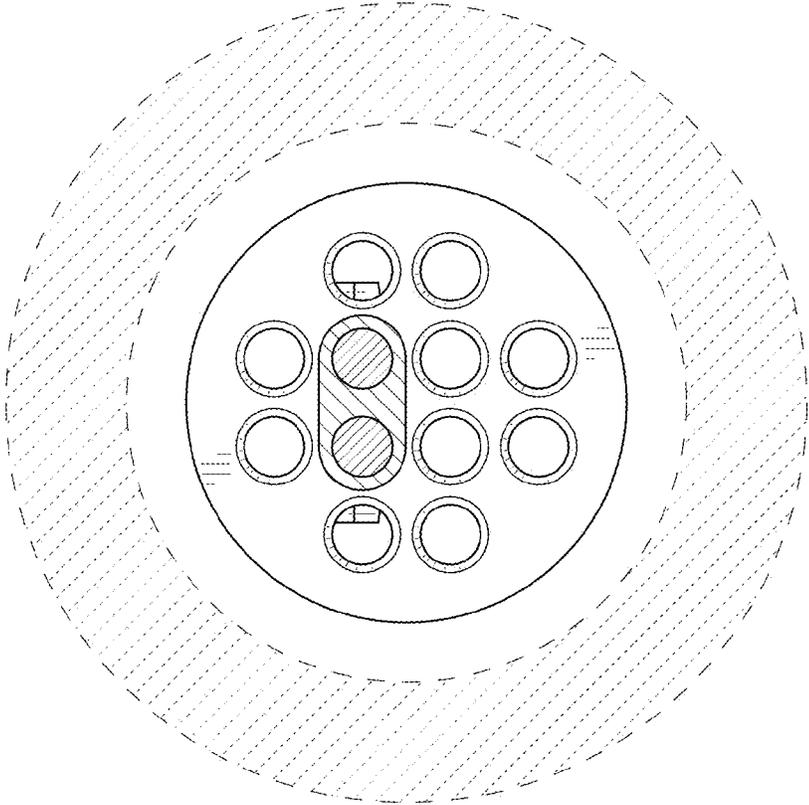


FIG. 33

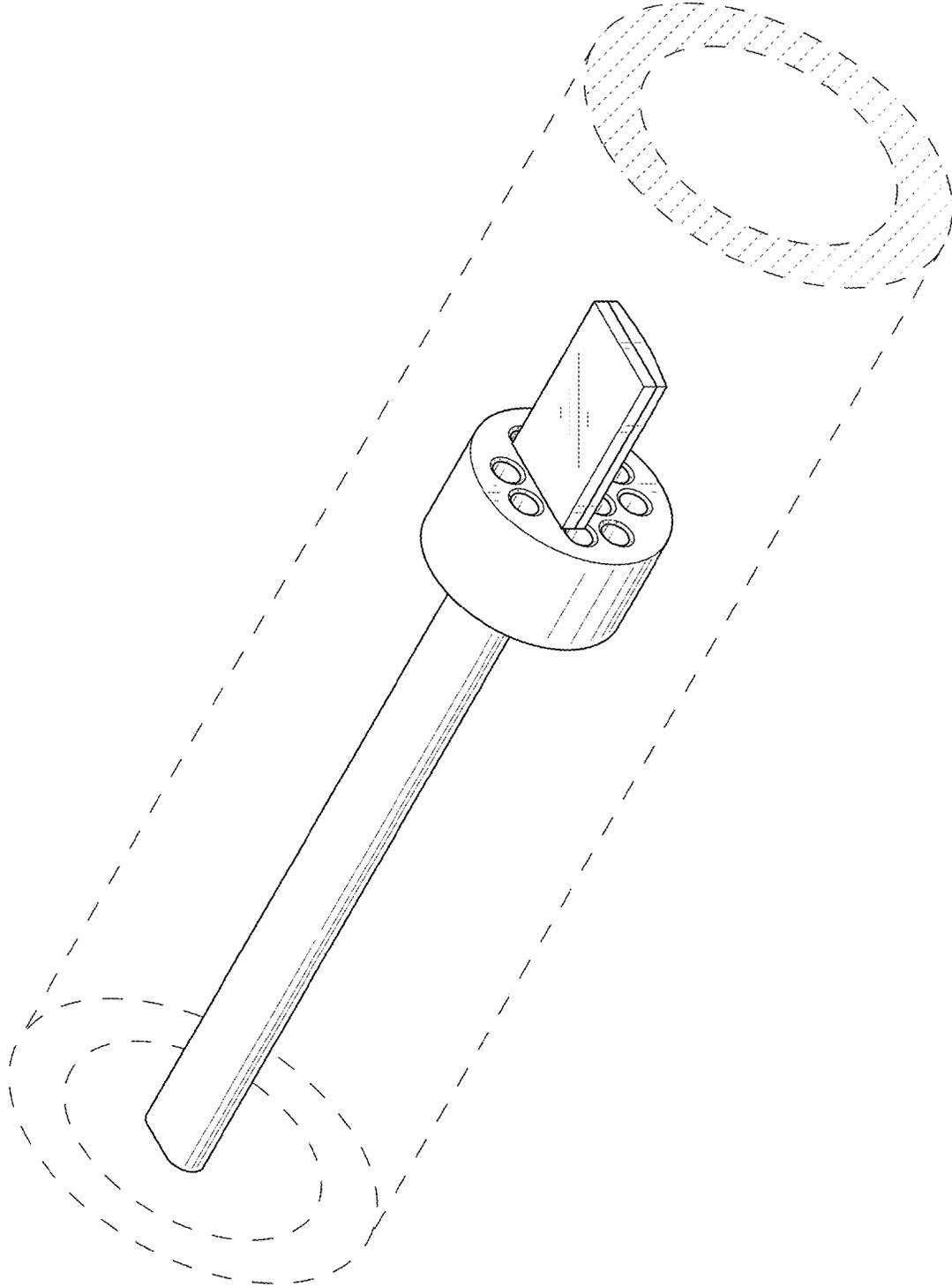


FIG. 35