



US00D819463S

(12) **United States Design Patent** (10) **Patent No.:** **US D819,463 S**
Akao et al. (45) **Date of Patent:** **** Jun. 5, 2018**

(54) **PROTECTOR TUBE FOR THERMOCOUPLE**

(71) Applicant: **Hitachi Kokusai Electric Inc.**, Tokyo (JP)

(72) Inventors: **Tokunobu Akao**, Toyama (JP); **Atushi Umekawa**, Tomaya (JP); **Masaaki Ueno**, Toyama (JP); **Tetsuya Kosugi**, Toyama (JP); **Hitoshi Murata**, Toyama (JP); **Masashi Sugishita**, Toyama (JP); **Kenji Shinozaki**, Toyama (JP)

(73) Assignee: **HITACHI KOKUSAI ELECTRIC INC.**, Tokyo (JP)

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

(21) Appl. No.: **29/590,877**

(22) Filed: **Jan. 13, 2017**

(30) **Foreign Application Priority Data**

Jul. 14, 2016 (JP) 015083/2016

(51) **LOC (11) 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

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

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

9,488,528 B2 * 11/2016 Schlipf G01K 1/14
9,791,328 B2 * 10/2017 Chu G01K 13/00
9,816,879 B2 * 11/2017 Sannier G01K 13/02

* cited by examiner

Primary Examiner — Antoine Duval Davis
(74) *Attorney, Agent, or Firm* — Fitch, Even, Tabin & Flannery, LLP

(57) **CLAIM**

We claim the ornamental design for a protector tube for thermocouple, as shown (and described).

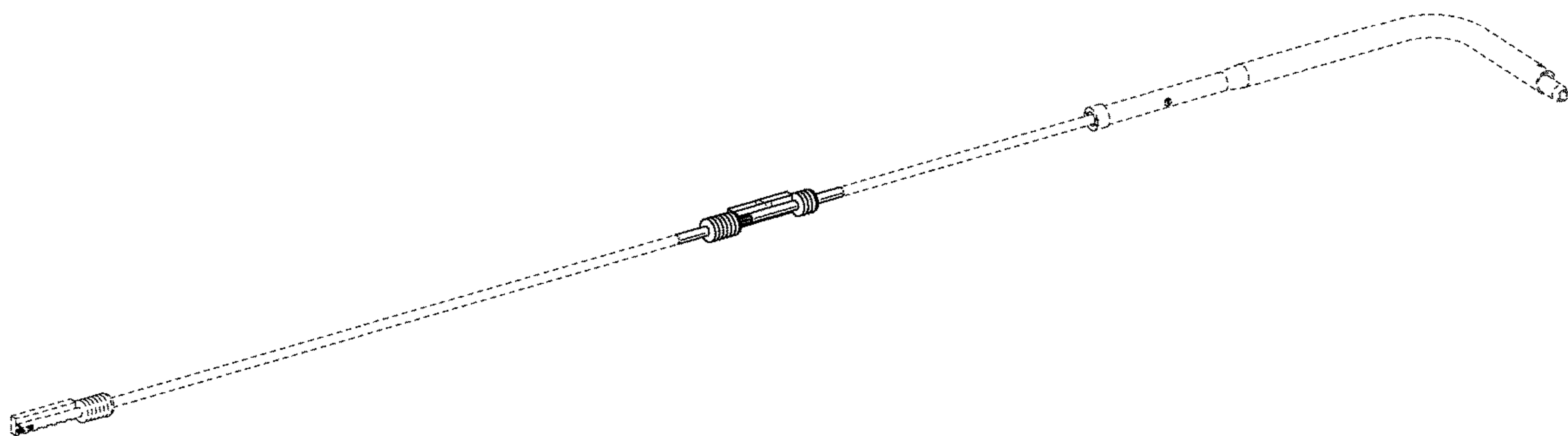
DESCRIPTION

FIG. 1 is a front, bottom and left side perspective view of a protector tube for thermocouple showing my 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 a cross-sectional view take along line 8-8 in FIG. 5 thereof; FIG. 9 is an enlarged portion view take along line 9-9 in FIG. 2; and, FIG. 10 is a cross-sectional view take along line 10-10 in FIG. 9.

The dashed-dot-dashed lines represent the boundary lines of the claimed design.

The broken lines shown in the drawings represent portions of the protector tube for thermocouple that form no part of the claimed design.

1 Claim, 4 Drawing Sheets



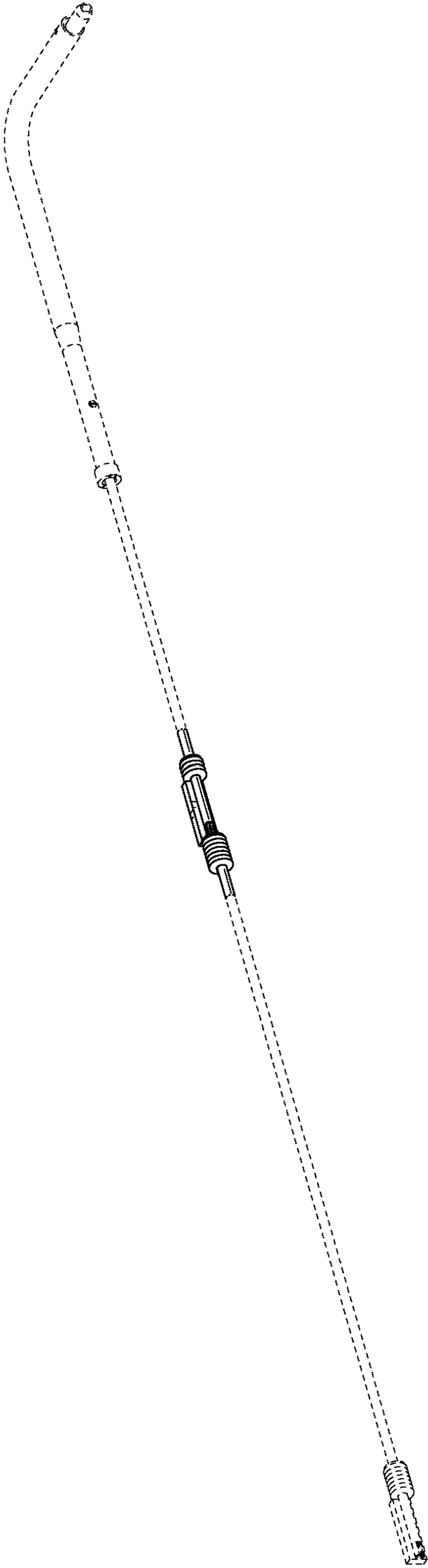


FIG. 1

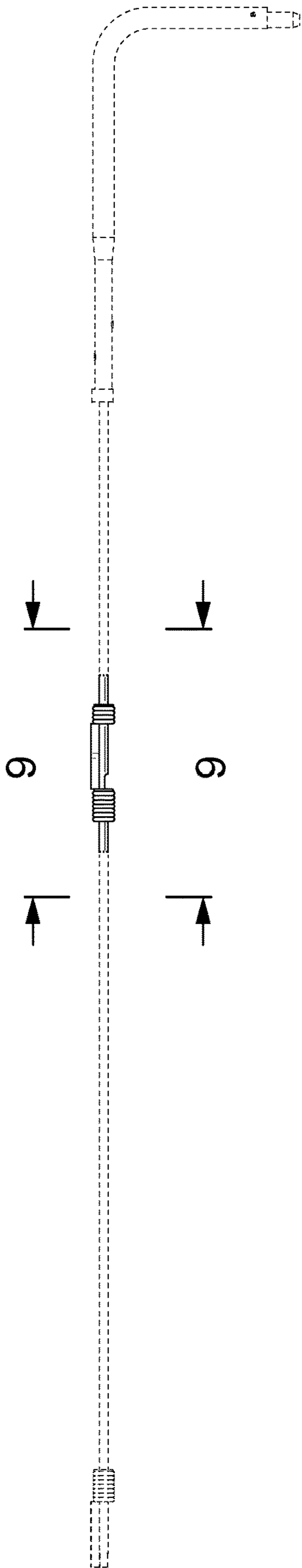


FIG. 2

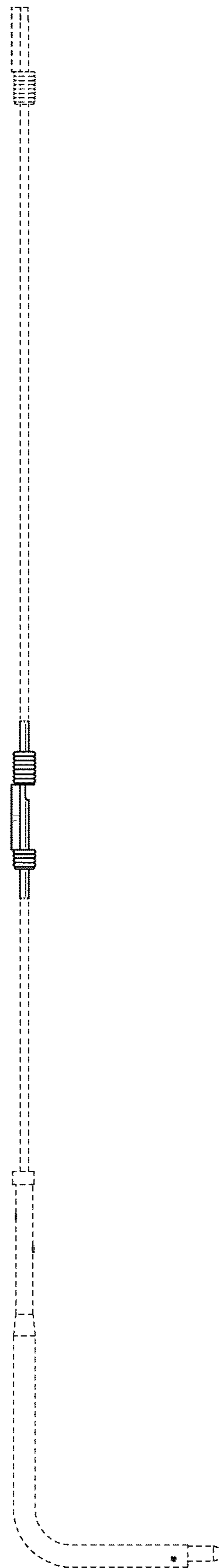


FIG. 3

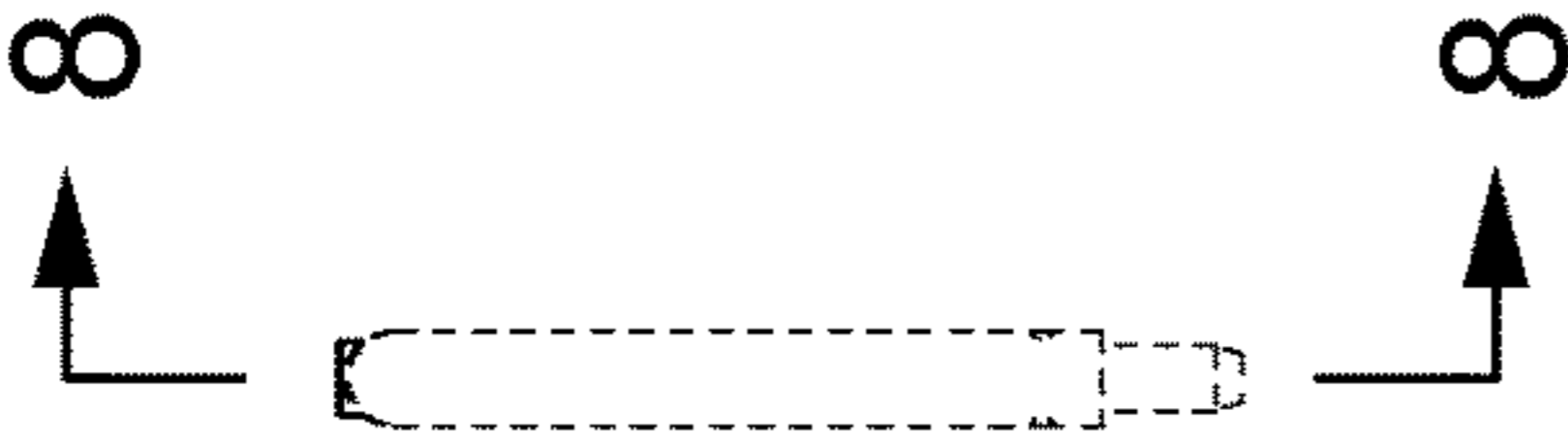


FIG. 4



FIG. 5



FIG. 6



FIG. 7

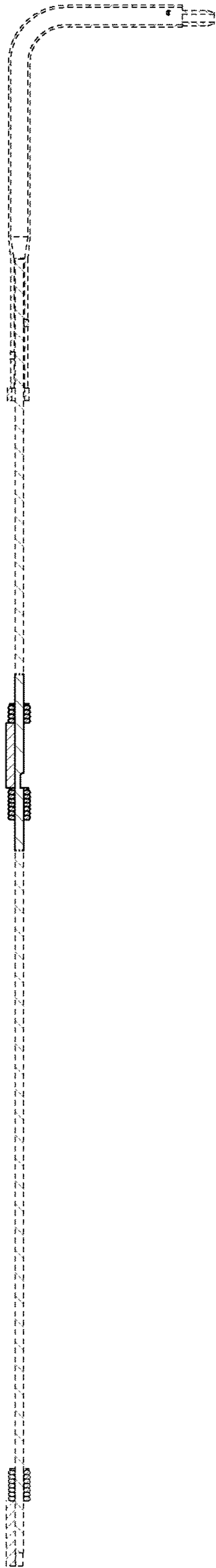


FIG. 8

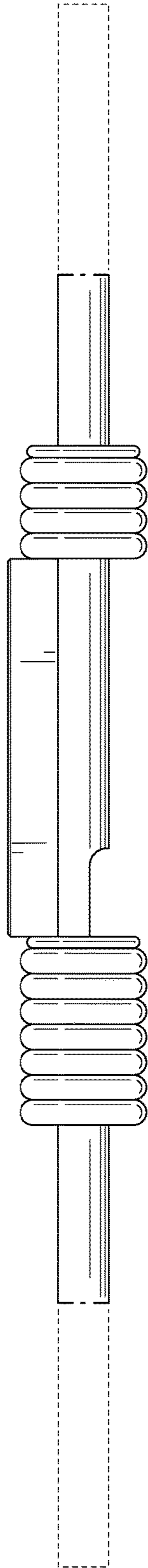


FIG. 9

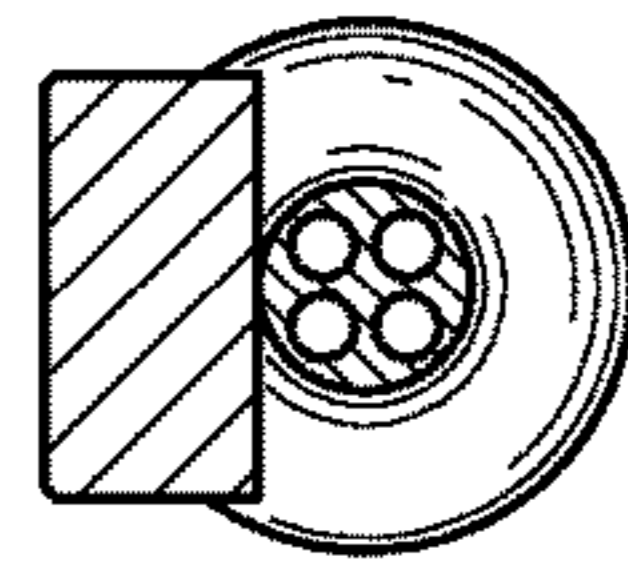


FIG. 10