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

(10) **Patent No.:** **US D843,547 S**

(45) **Date of Patent:** **** Mar. 19, 2019**

- (54) **ION GENERATING MODULE**
- (71) Applicant: **SMC CORPORATION**, Chiyoda-Ku (JP)
- (72) Inventors: **Takayuki Toshida**, Tsukubamirai (JP);
Tomokazu Hariya, Tsukubamirai (JP);
Naoto Sasada, Tsukubamirai (JP)
- (73) Assignee: **SMC CORPORATION**, Chiyoda-ku (JP)
- (**) Term: **15 Years**
- (21) Appl. No.: **29/574,907**
- (22) Filed: **Aug. 19, 2016**
- (30) **Foreign Application Priority Data**

Feb. 19, 2016 (CN) 2016 3 0047744

- (51) **LOC (11) Cl.** **23-01**
- (52) **U.S. Cl.**
USPC **D23/207**
- (58) **Field of Classification Search**
USPC D23/207, 213, 300, 314, 325, 332-336,
D23/342, 351, 352, 355-369, 370,
D23/386-388; D14/168
CPC A62B 21/00; B01D 46/0002; B01D 46/10;
F02M 35/04; F24F 13/20; H05F 3/04;
H01T 23/00; B03C 3/383
See application file for complete search history.

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* cited by examiner

Primary Examiner — Brandon M Rosati
Assistant Examiner — John A Voytek
(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **CLAIM**

The ornamental design for an ion generating module, as shown and described.

DESCRIPTION

FIG. 1 is a front, top, left side perspective view of an ion generating module according to a first embodiment of our design;

FIG. 2 is a right side elevational view thereof;

FIG. 3 is a left side elevational view thereof;

FIG. 4 is a top elevational view thereof;

FIG. 5 is a bottom elevational view thereof;

FIG. 6 is a back elevational view thereof;

FIG. 7 is a front elevational view thereof;

FIG. 8 is an enlarged view along lines B-B' of FIG. 6;

FIG. 9 is an enlarged view along lines C-C' of FIG. 7;

FIG. 10 is an enlarged cross-sectional view along lines A-A' of FIG. 2;

FIG. 11 is a front, bottom, left side perspective view thereof;

FIG. 12 is a front, top, left side perspective view of an ion generating module according to a second embodiment of our design;

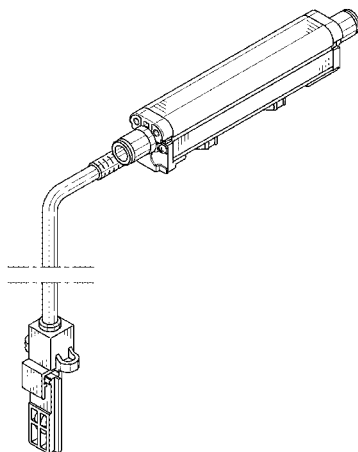


FIG. 13 is a right side elevational view thereof;
FIG. 14 is a left side elevational view thereof;
FIG. 15 is a top elevational view thereof;
FIG. 16 is a bottom elevational view thereof;
FIG. 17 is a back elevational view thereof;
FIG. 18 is a front elevational view thereof;
FIG. 19 is an enlarged view along lines B-B' of FIG. 17;
FIG. 20 is an enlarged view along lines C-C' of FIG. 18;
FIG. 21 is a front, bottom, left side perspective view thereof;
FIG. 22 is an enlarged cross-sectional view along lines A-A' of FIG. 13;
FIG. 23 is a front, top, left side perspective view of an ion generating module according to a third embodiment of our design;
FIG. 24 is a right side elevational view thereof;
FIG. 25 is a left side elevational view thereof;
FIG. 26 is a top elevational view thereof;
FIG. 27 is a bottom elevational view thereof;
FIG. 28 is a back elevational view thereof;
FIG. 29 is a front elevational view thereof;
FIG. 30 is an enlarged right side elevational view thereof;
FIG. 31 is an enlarged left side elevational view thereof;
FIG. 32 is an enlarged top elevational view thereof;
FIG. 33 is an enlarged bottom elevational view thereof;
FIG. 34 is an enlarged back elevational view thereof;
FIG. 35 is an enlarged front elevational view thereof;
FIG. 36 is an enlarged view along lines B-B' of FIG. 34;
FIG. 37 is an enlarged view along lines C-C' of FIG. 35;
FIG. 38 is a front, bottom, left side perspective view thereof;
FIG. 39 is an enlarged cross-sectional view along lines A-A' of FIG. 30;
FIG. 40 is a front, top, left side perspective view of an ion generating module according to a fourth embodiment of our design;
FIG. 41 is a right side elevational view thereof;
FIG. 42 is a left side elevational view thereof;
FIG. 43 is a top elevational view thereof;
FIG. 44 is a bottom elevational view thereof;
FIG. 45 is a back elevational view thereof;
FIG. 46 is a front elevational view thereof;
FIG. 47 is an enlarged right side elevational view thereof;
FIG. 48 is an enlarged left side elevational view thereof;
FIG. 49 is an enlarged top elevational view thereof;
FIG. 50 is an enlarged bottom elevational view thereof;
FIG. 51 is an enlarged back elevational view thereof;
FIG. 52 is an enlarged front elevational view thereof;
FIG. 53 is an enlarged view along lines B-B' of FIG. 51;
FIG. 54 is an enlarged view along lines C-C' of FIG. 52;
FIG. 55 is a front, bottom, left side perspective view thereof;
FIG. 56 is an enlarged cross-sectional view along lines A-A' of FIG. 47;
FIG. 57 is a front, top, left side perspective view of an ion generating module according to a fifth embodiment of our design;
FIG. 58 is a right side elevational view thereof;
FIG. 59 is a left side elevational view thereof;
FIG. 60 is a top elevational view thereof;
FIG. 61 is a bottom elevational view thereof;
FIG. 62 is a back elevational view thereof;
FIG. 63 is a front elevational view thereof;
FIG. 64 is an enlarged back elevational view between lines B-B' of FIG. 62;
FIG. 65 is an enlarged front elevational view between lines C-C' of FIG. 63;
FIG. 66 is a front, bottom, left side perspective view thereof;

FIG. 67 is an enlarged cross-sectional view along lines A-A' of FIG. 58;
FIG. 68 is a front, top, left side perspective view of an ion generating module according to a sixth embodiment of our design;
FIG. 69 is a right side elevational view thereof;
FIG. 70 is a left side elevational view thereof;
FIG. 71 is a top elevational view thereof;
FIG. 72 is a bottom elevational view thereof;
FIG. 73 is a back elevational view thereof;
FIG. 74 is a front elevational view thereof;
FIG. 75 is an enlarged back elevational view between lines B-B' of FIG. 73;
FIG. 76 is an enlarged front elevational view between lines C-C' of FIG. 74;
FIG. 77 is a front, bottom, left side perspective view thereof;
FIG. 78 is an enlarged cross-sectional view along line A-A' of FIG. 69;
FIG. 79 is a front, top, left side perspective view of an ion generating module according to a seventh embodiment of our design;
FIG. 80 is a right side elevational view thereof;
FIG. 81 is a left side elevational view thereof;
FIG. 82 is a top elevational view thereof;
FIG. 83 is a bottom elevational view thereof;
FIG. 84 is a back elevational view thereof;
FIG. 85 is a front elevational view thereof;
FIG. 86 is an enlarged right side elevational view thereof;
FIG. 87 is an enlarged left side elevational view thereof;
FIG. 88 is an enlarged top elevational view thereof;
FIG. 89 is an enlarged bottom elevational view thereof;
FIG. 90 is an enlarged back elevational view thereof;
FIG. 91 is an enlarged front elevational view thereof;
FIG. 92 is an enlarged back elevational view between lines B-B' of FIG. 90;
FIG. 93 is an enlarged front elevational view between lines C-C' of FIG. 91;
FIG. 94 is a front, bottom, left side perspective view thereof;
FIG. 95 is an enlarged cross-sectional view along lines A-A' of FIG. 86;
FIG. 96 is a front, top, left side perspective view of an ion generating module according to an eighth embodiment of our design;
FIG. 97 is a right side elevational view thereof;
FIG. 98 is a left side elevational view thereof;
FIG. 99 is a top elevational view thereof;
FIG. 100 is a bottom elevational view thereof;
FIG. 101 is a back elevational view thereof;
FIG. 102 is a front elevational view thereof;
FIG. 103 is an enlarged right side elevational view thereof;
FIG. 104 is an enlarged left side elevational view thereof;
FIG. 105 is an enlarged top elevational view thereof;
FIG. 106 is an enlarged bottom elevational view thereof;
FIG. 107 is an enlarged back elevational view thereof;
FIG. 108 is an enlarged front elevational view thereof;
FIG. 109 is an enlarged back elevational view between lines B-B' of FIG. 107;
FIG. 110 is an enlarged front elevational view between lines C-C' of FIG. 108;
FIG. 111 is a front, bottom, left side perspective view thereof; and,
FIG. 112 is an enlarged cross-sectional view along lines A-A' of FIG. 103.
The ion generating module is shown with a symbolic break (or breaks) in its length, represented by uneven dashed lines,

to represent that the length is not limited to the specific length shown. The uneven dashed lines represent boundary lines between claimed and unclaimed subject matter and form no part of the claimed design. Likewise, unclaimed subject matter between the uneven dashed boundary lines forms no part of the claimed design.

1 Claim, 112 Drawing Sheets

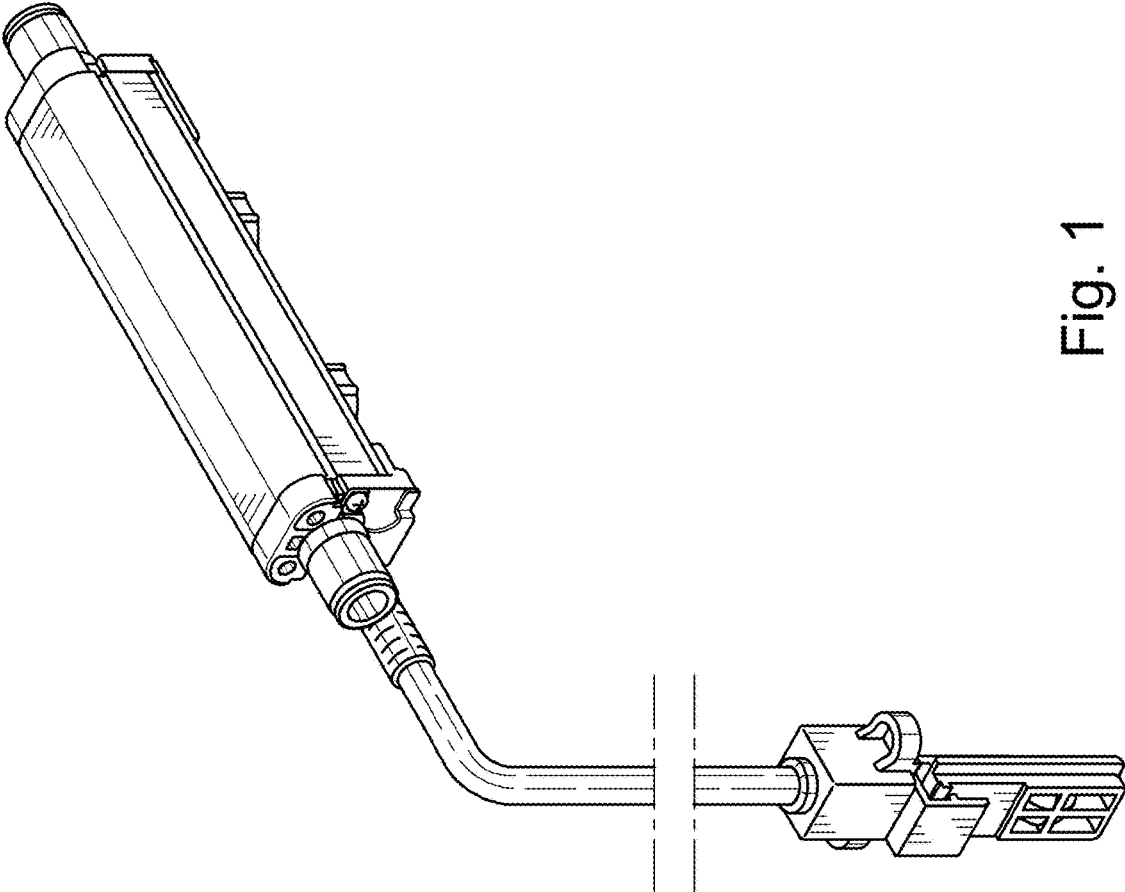


Fig. 1

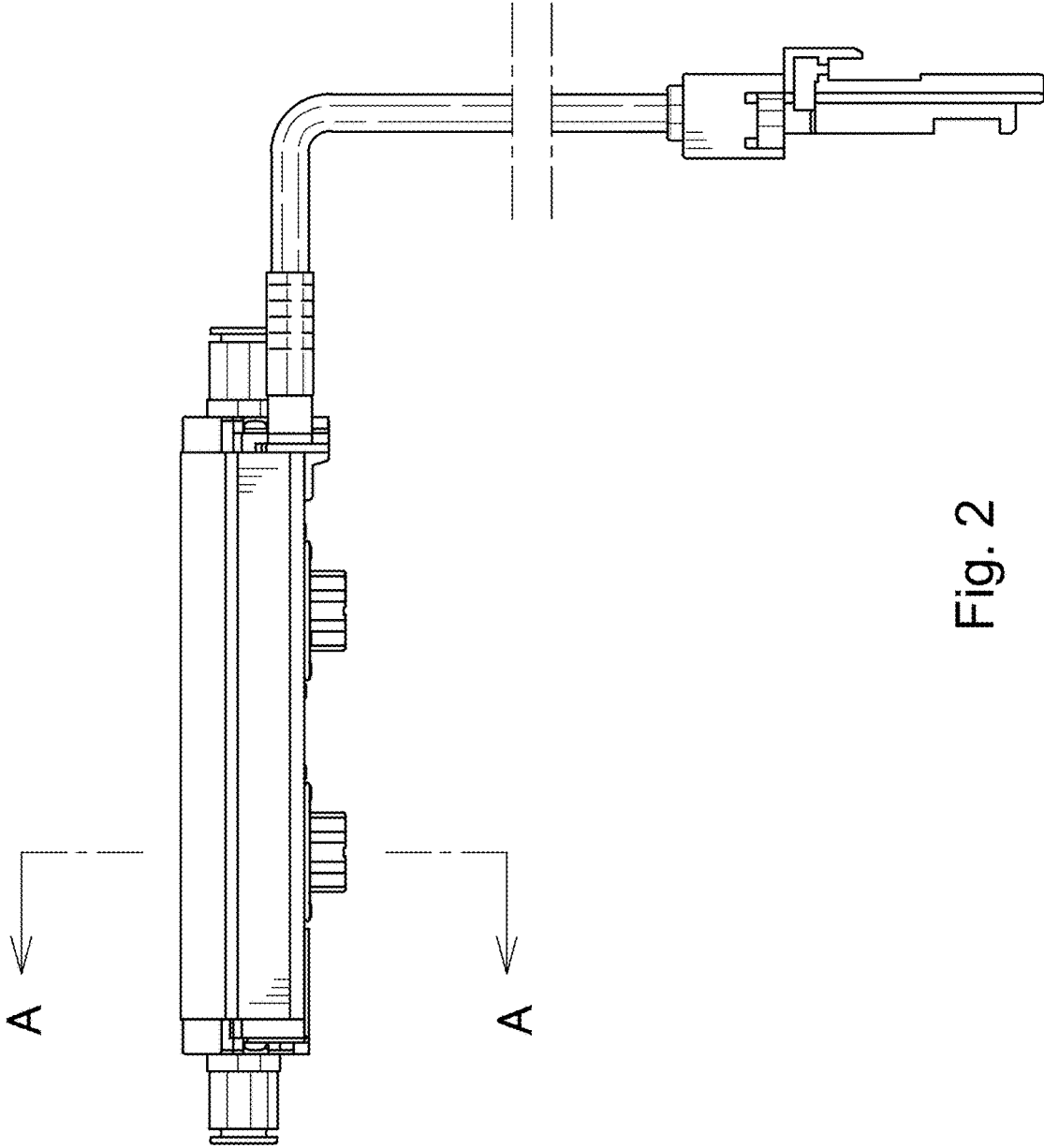


Fig. 2

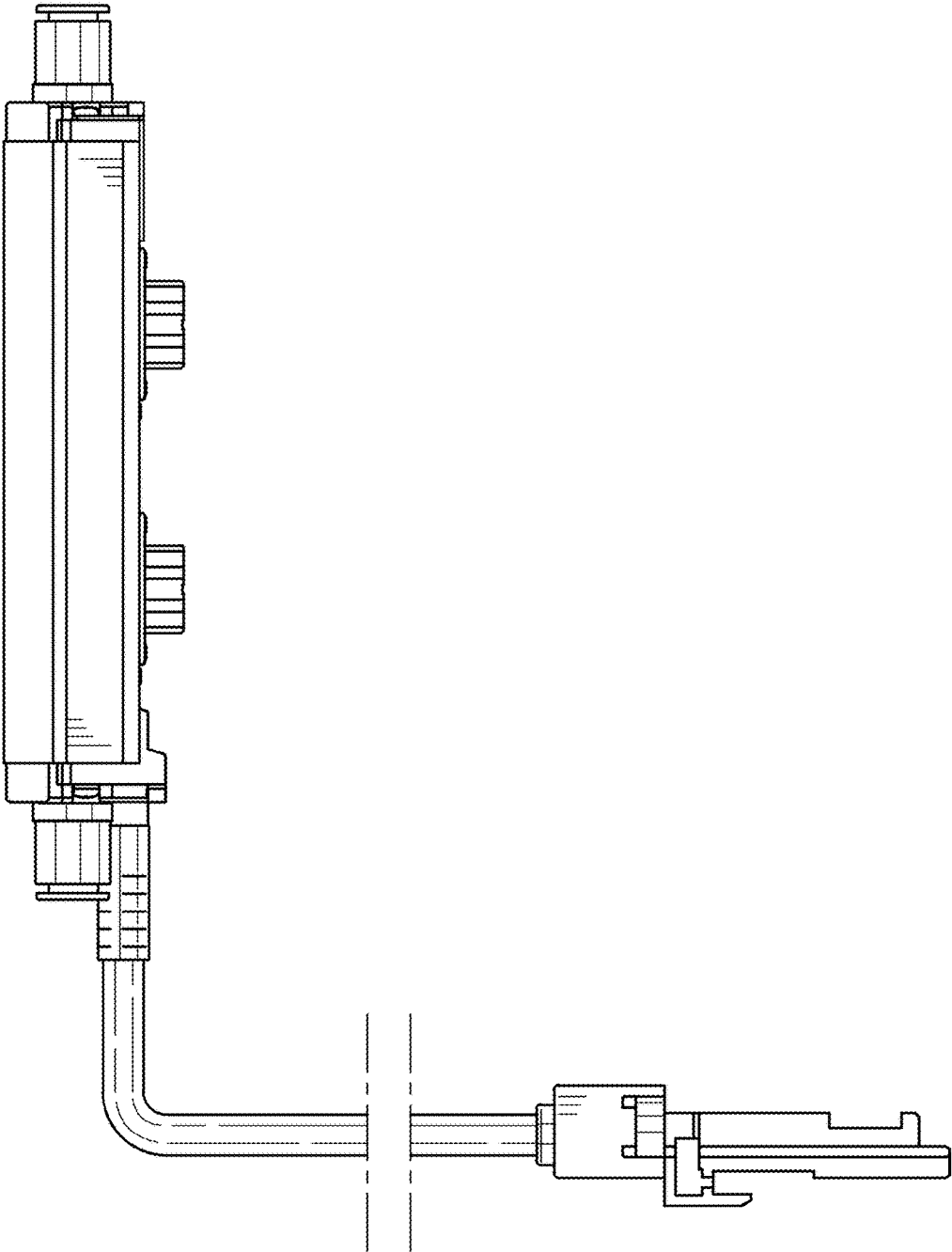


Fig. 3

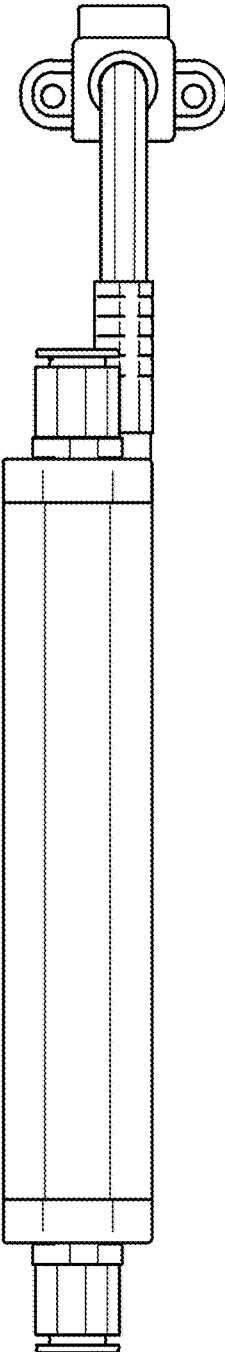


Fig. 4

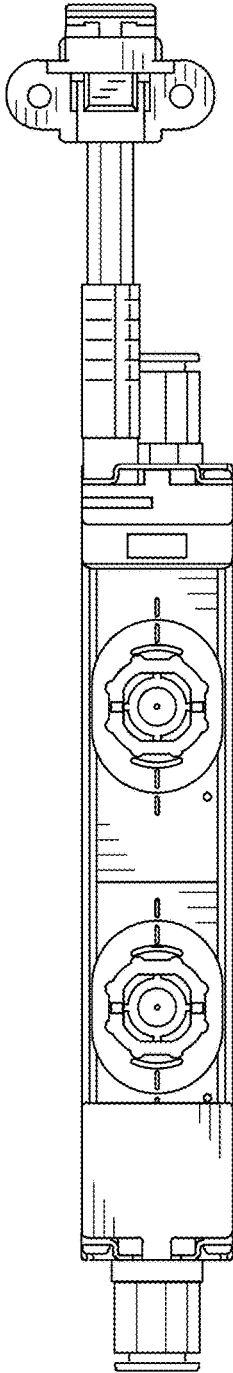


Fig. 5

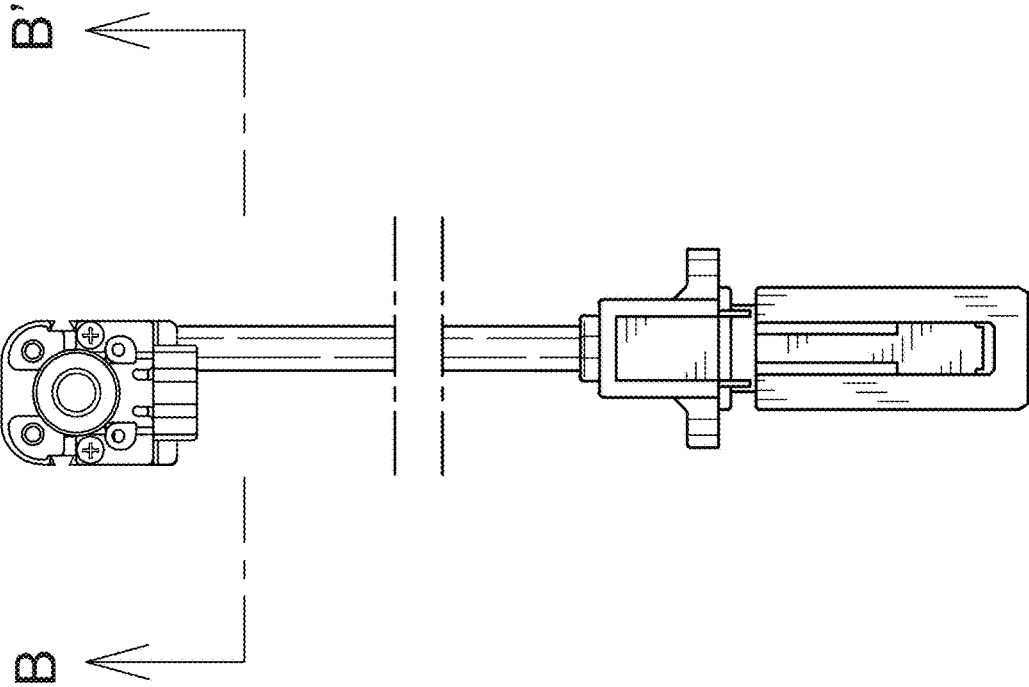


Fig. 6

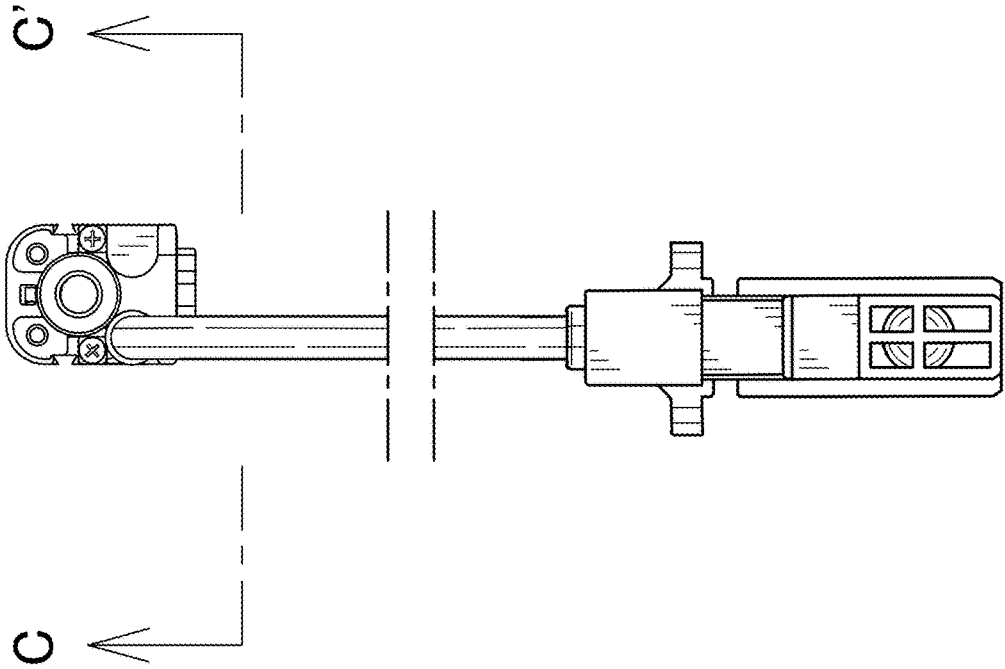


Fig. 7

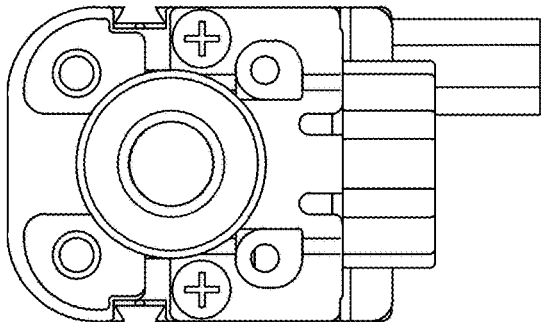


Fig. 8

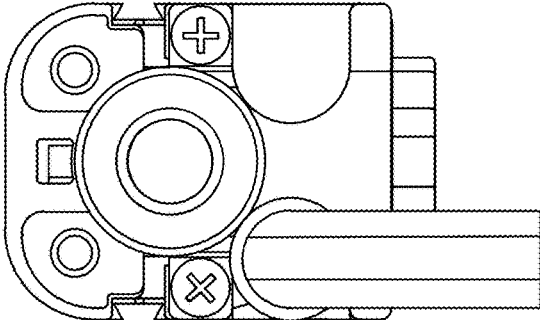


Fig. 9

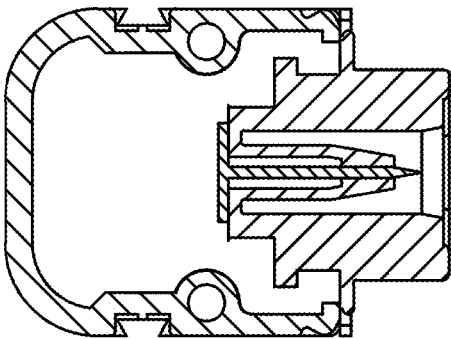


Fig. 10

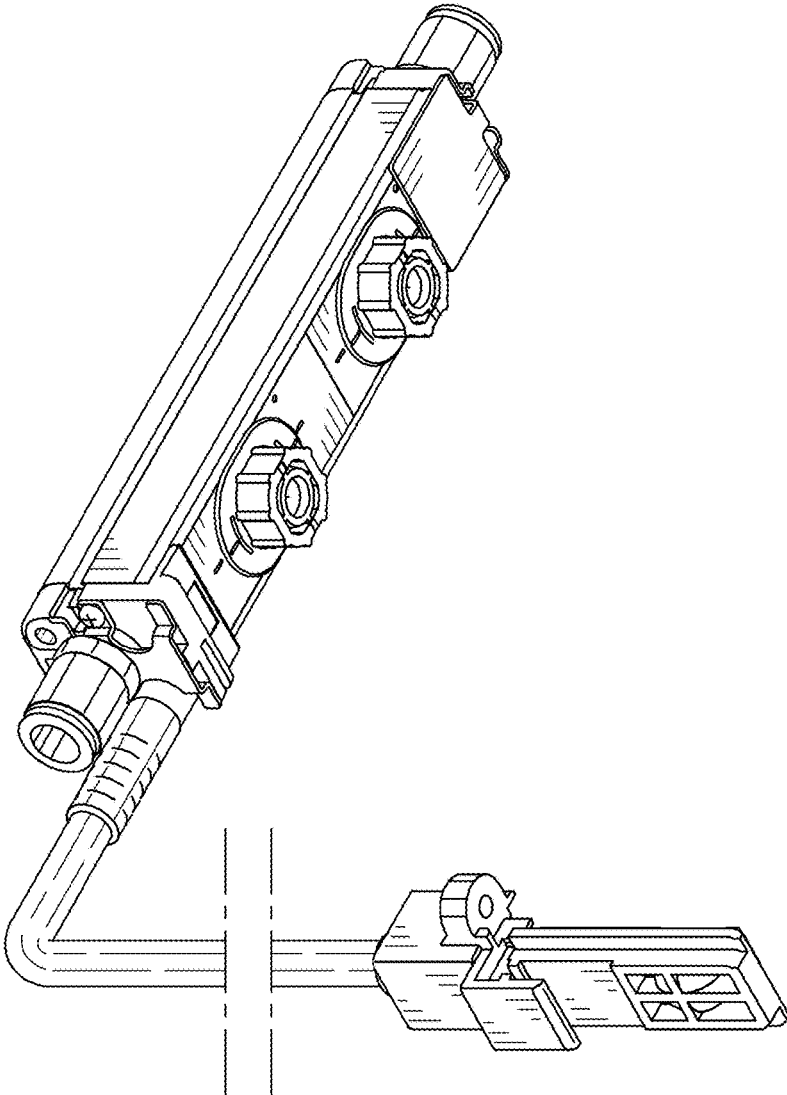


Fig. 11

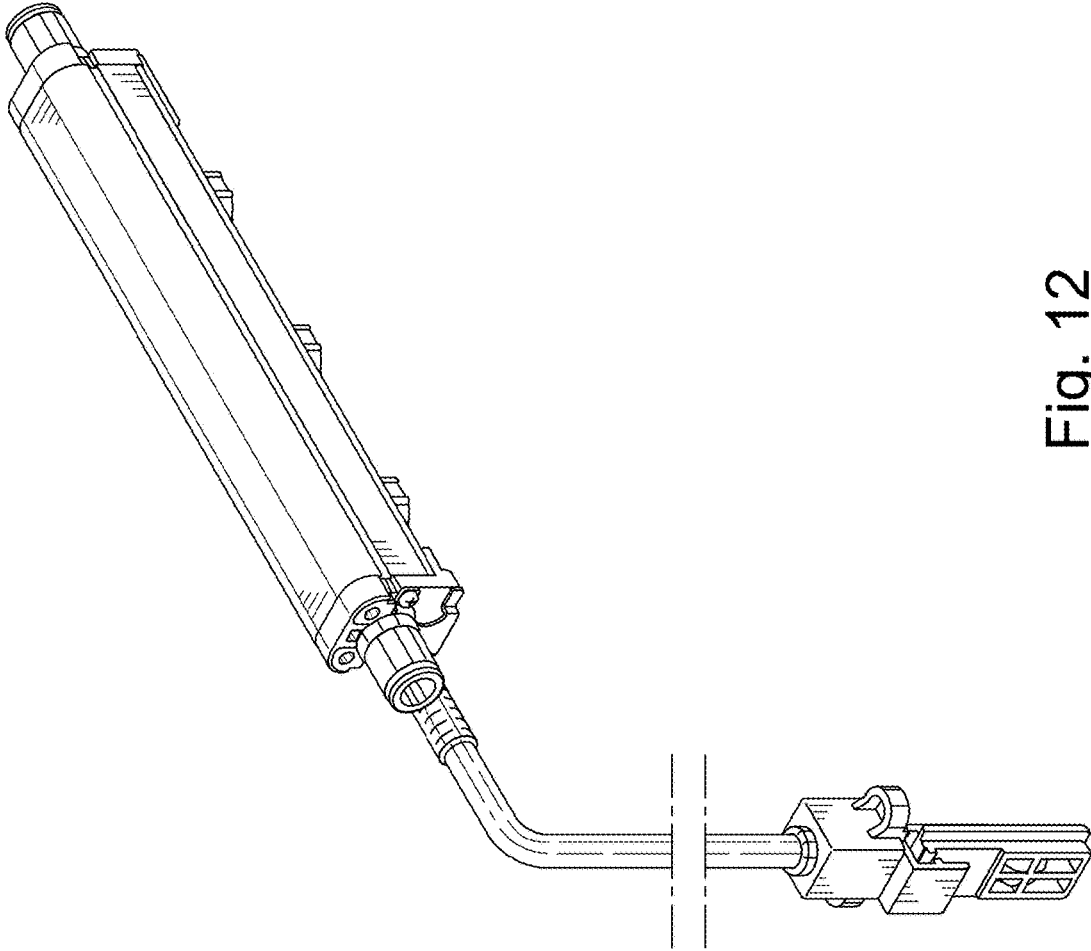


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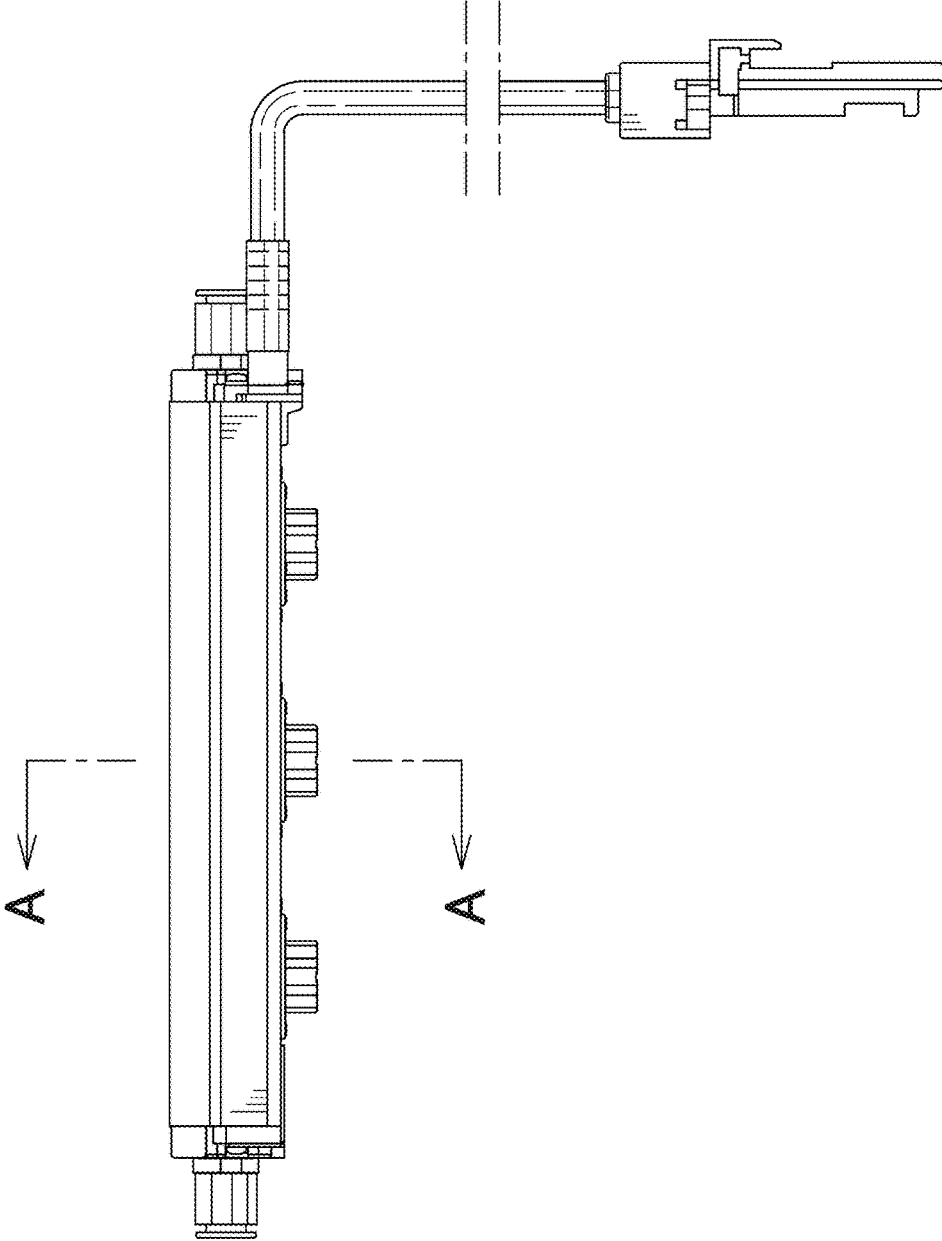


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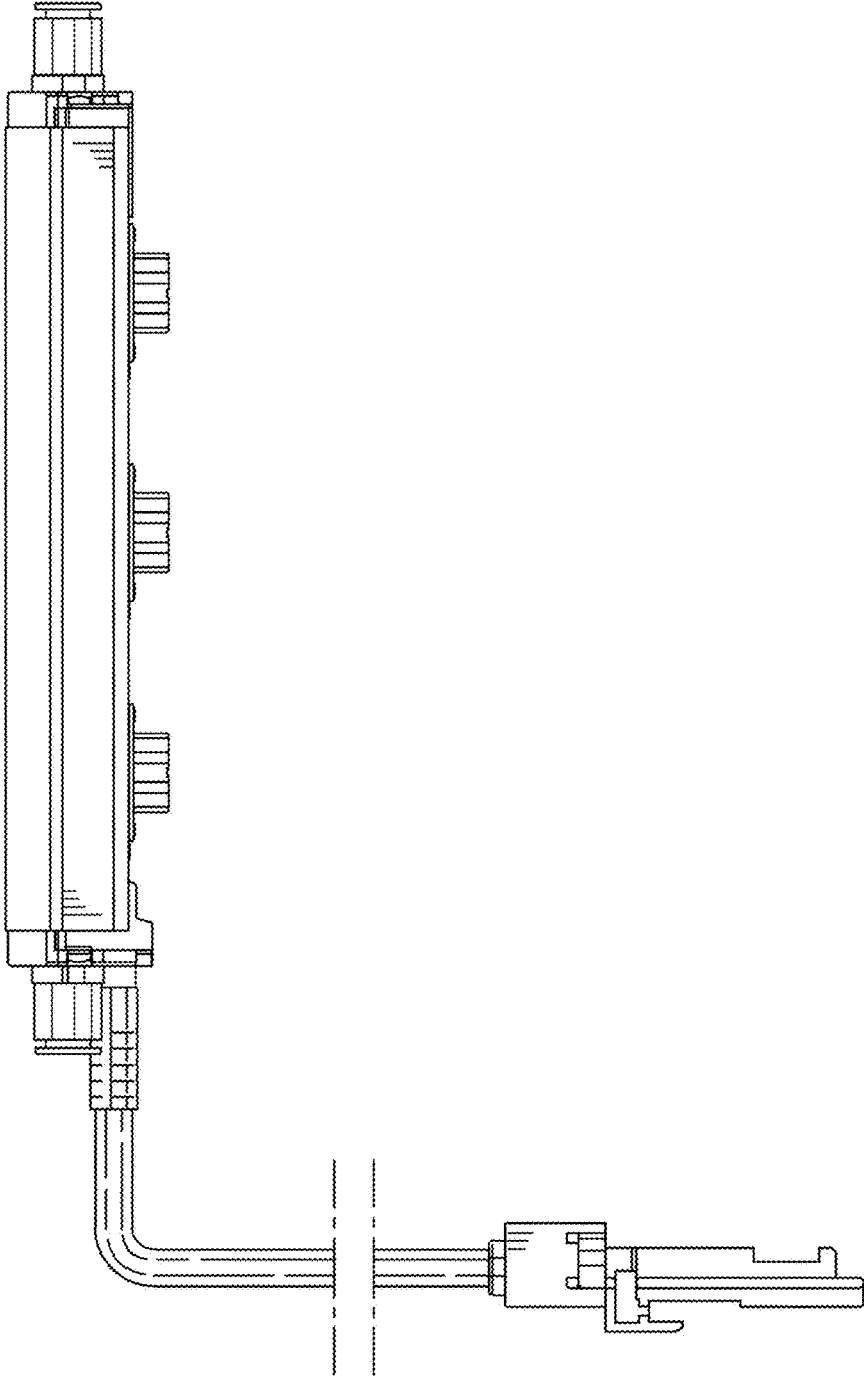


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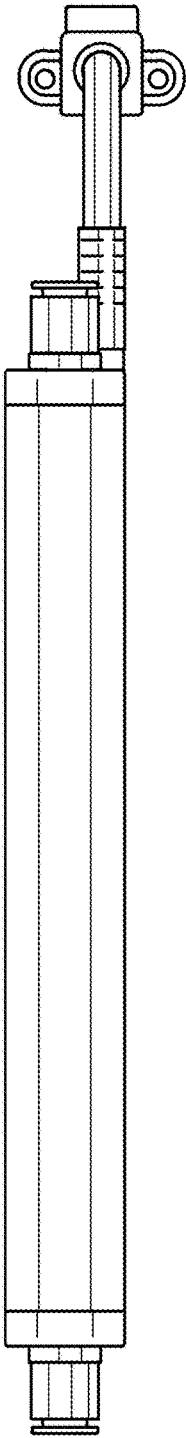


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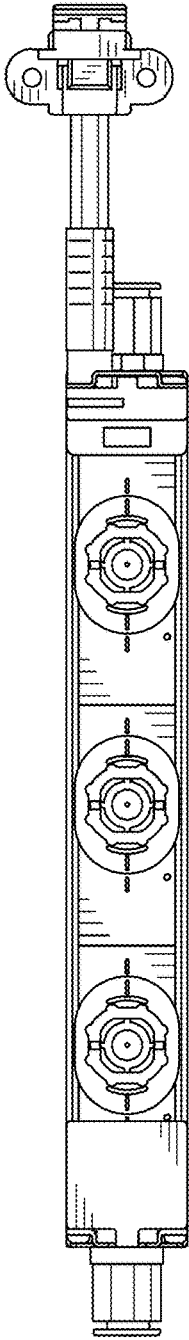


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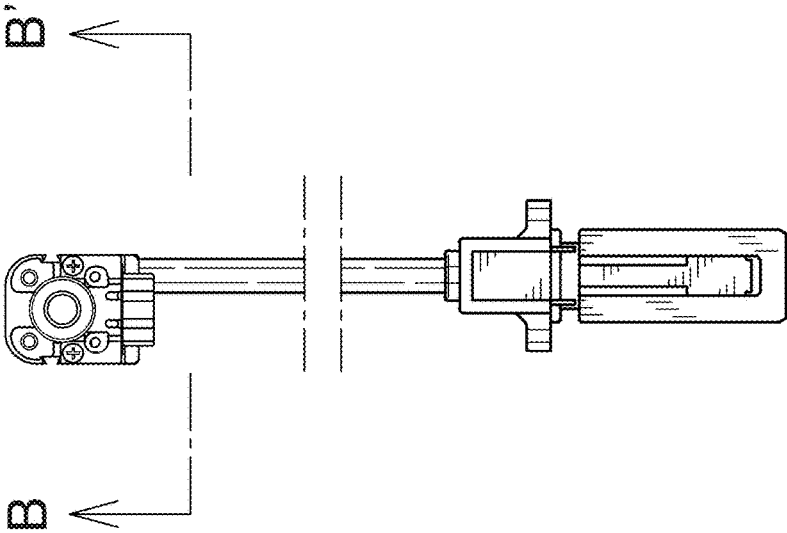


Fig. 17

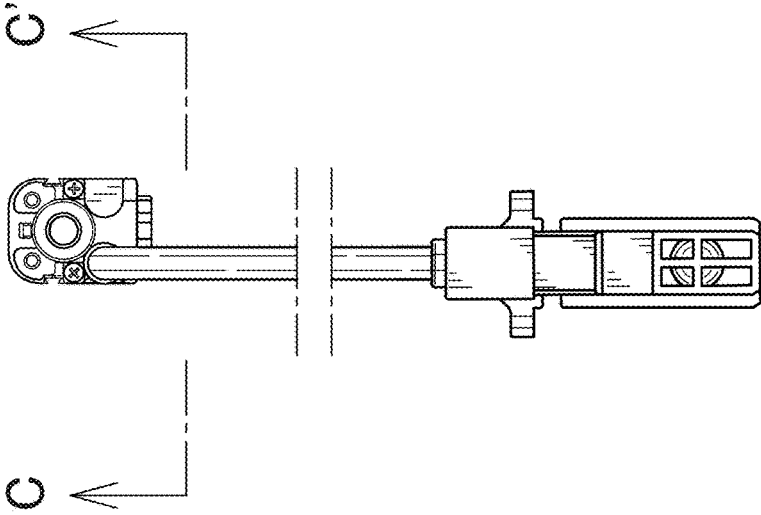


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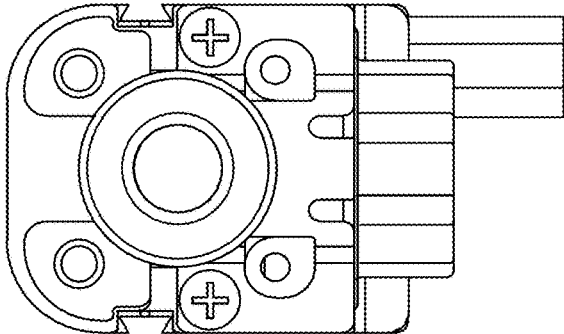


Fig. 19

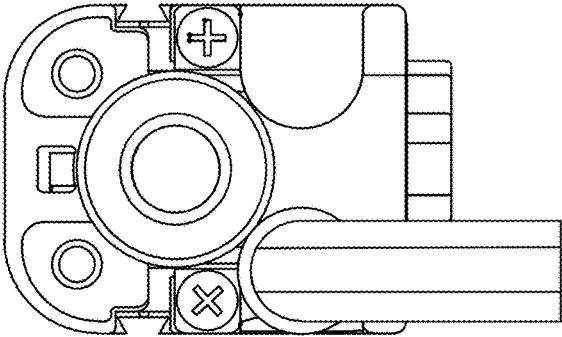


Fig. 20

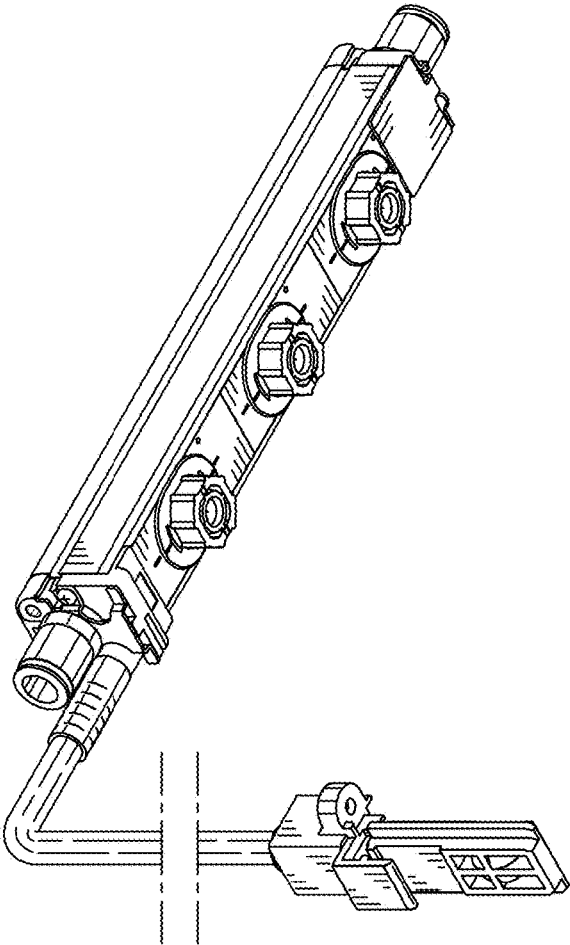


Fig. 21

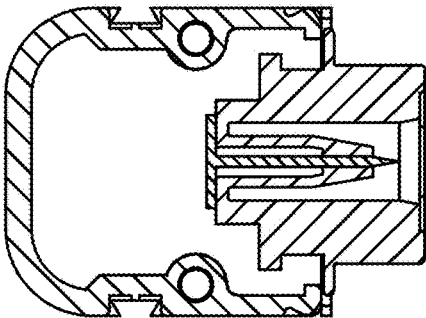


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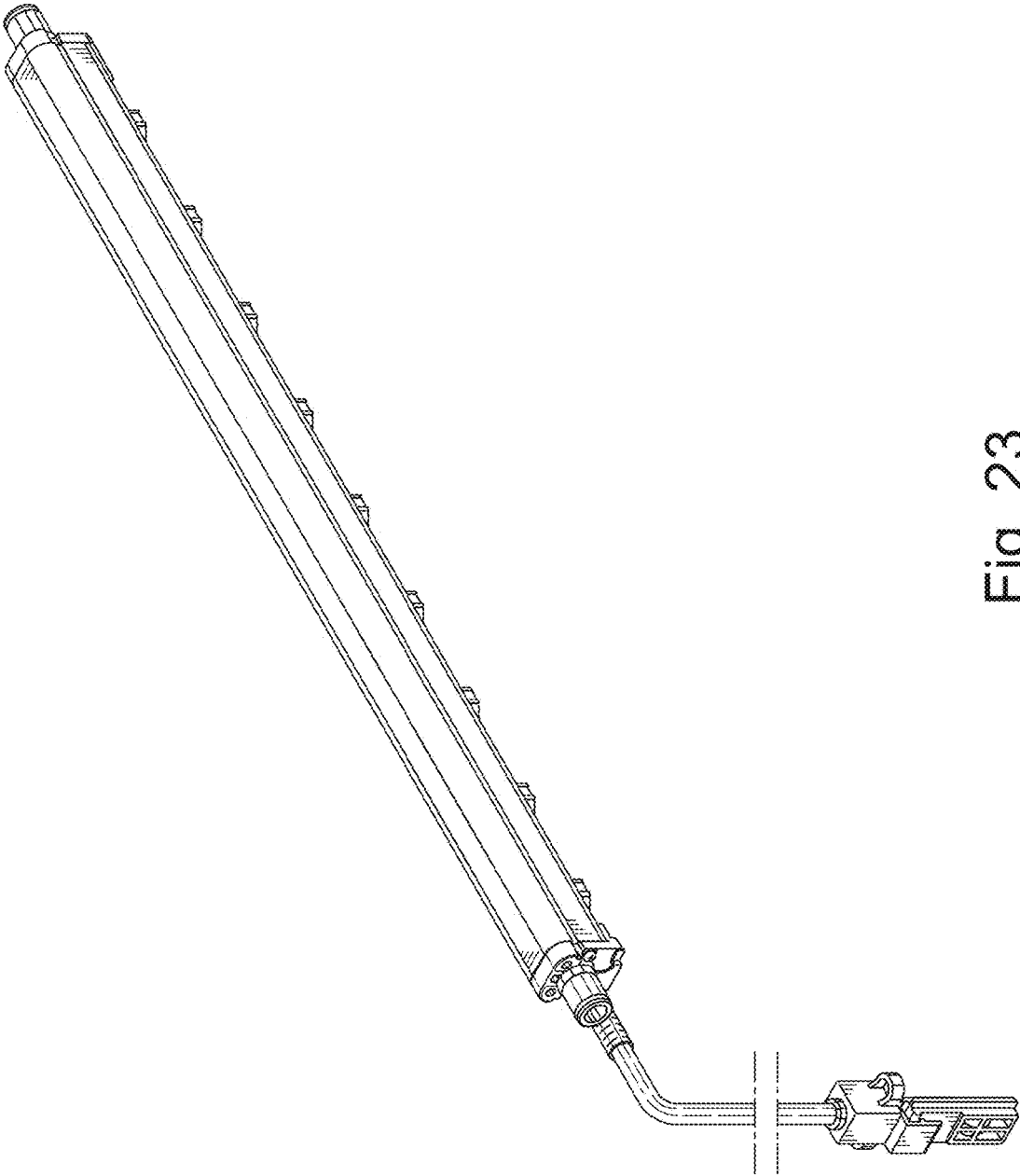


Fig. 23

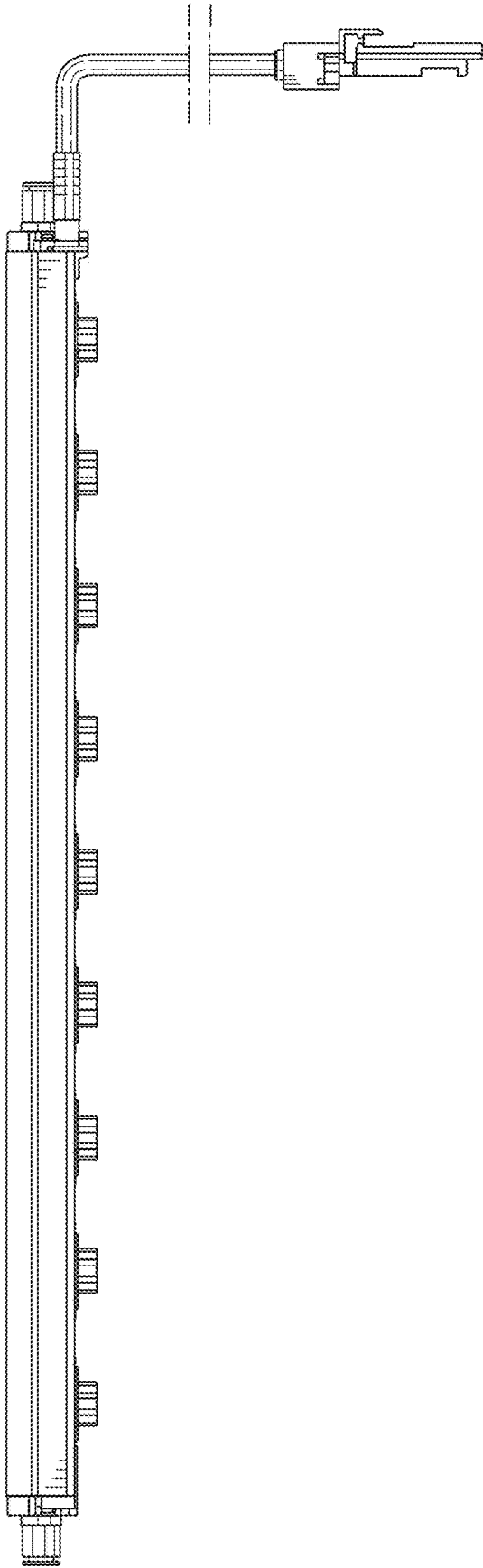


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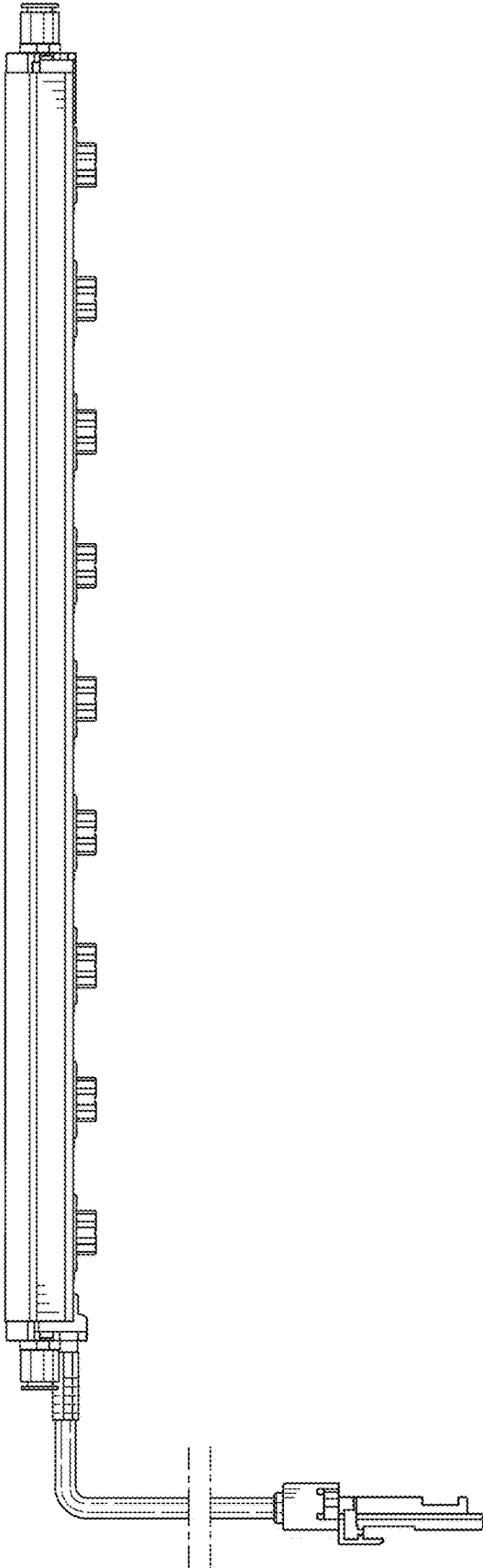


Fig. 25

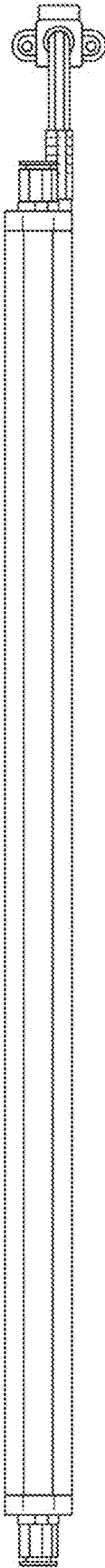


Fig. 26

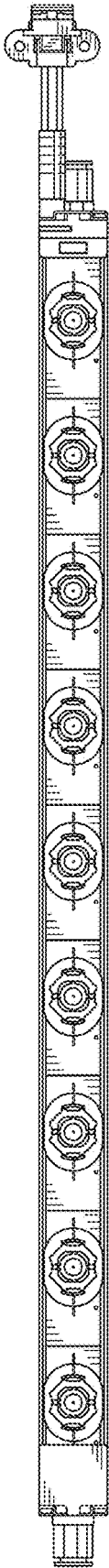


Fig. 27

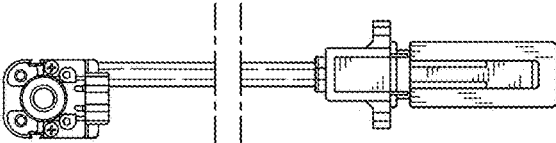


Fig. 28

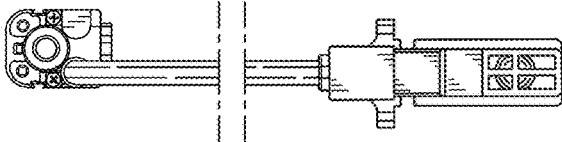


Fig. 29

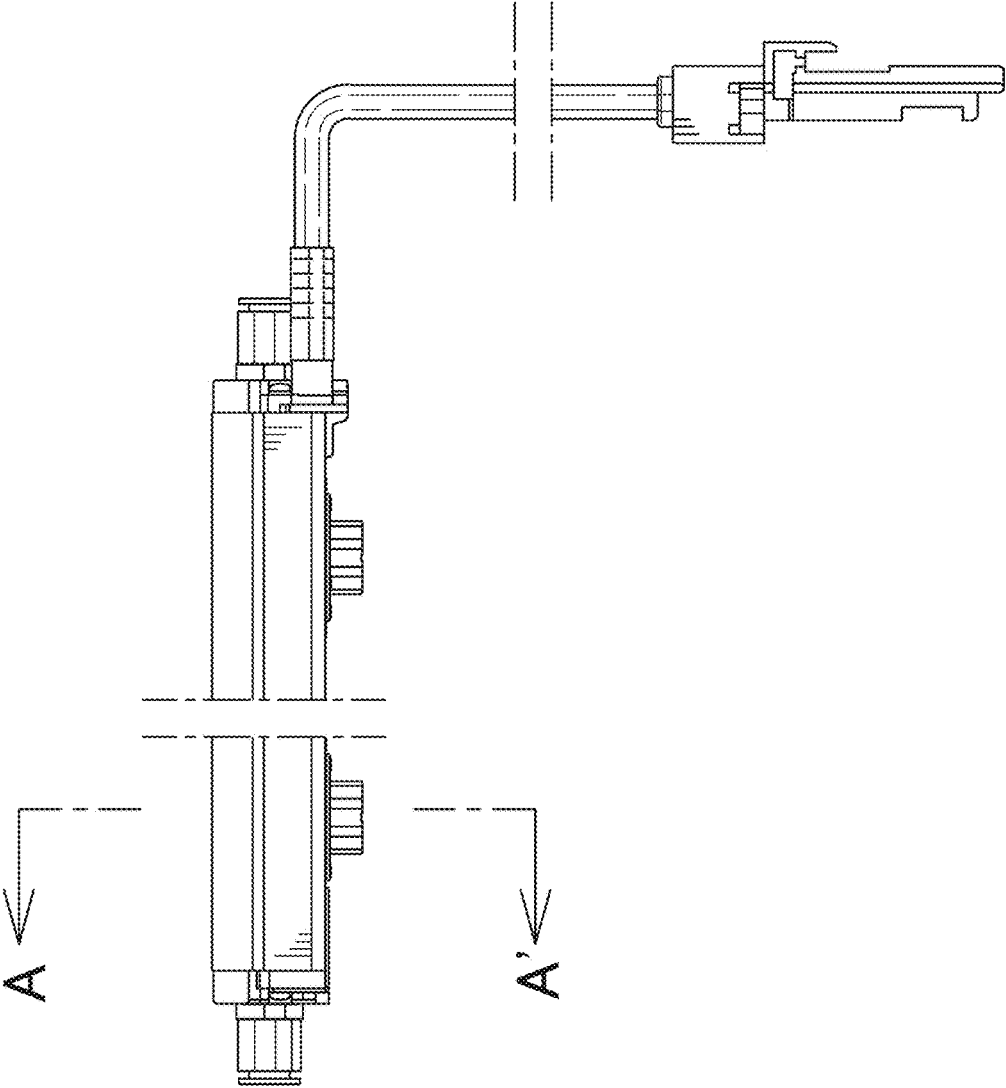


Fig. 30

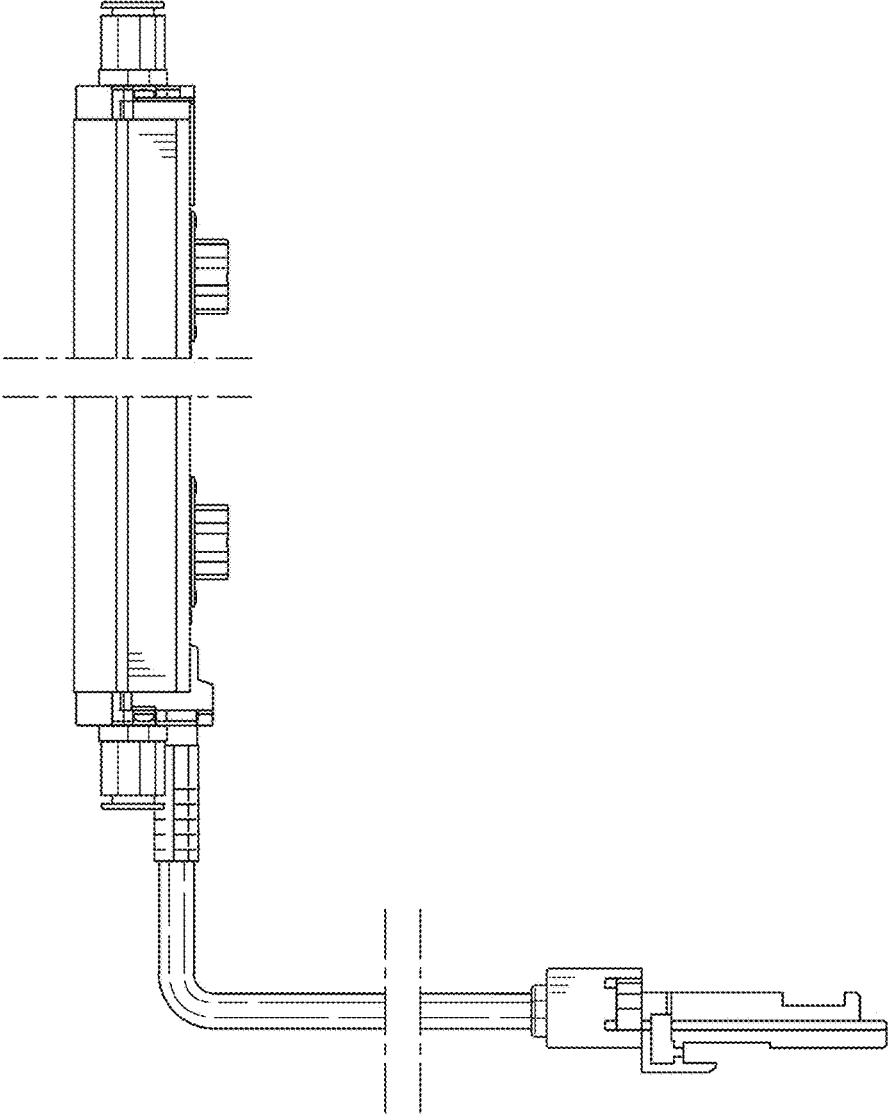


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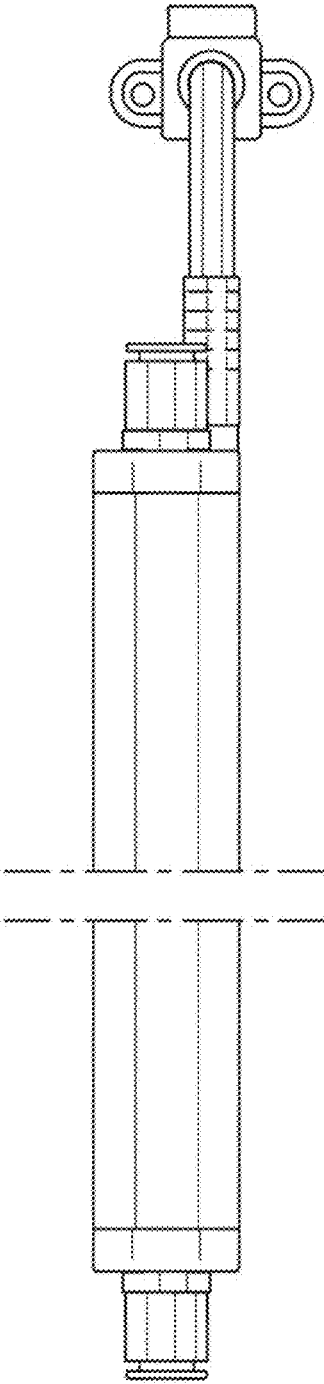


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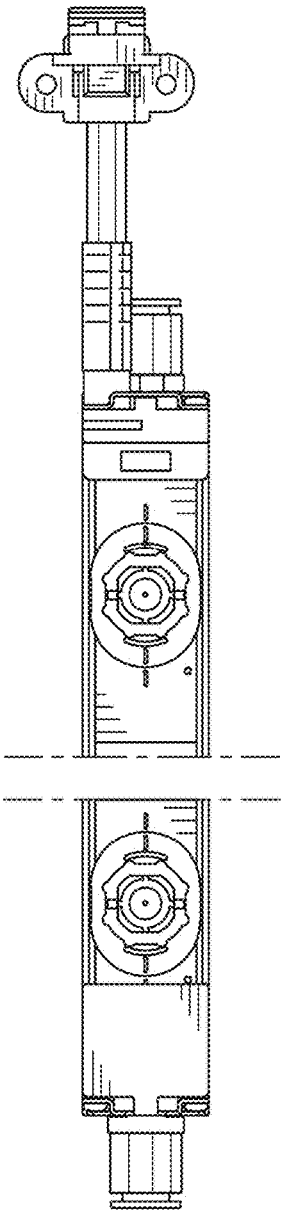


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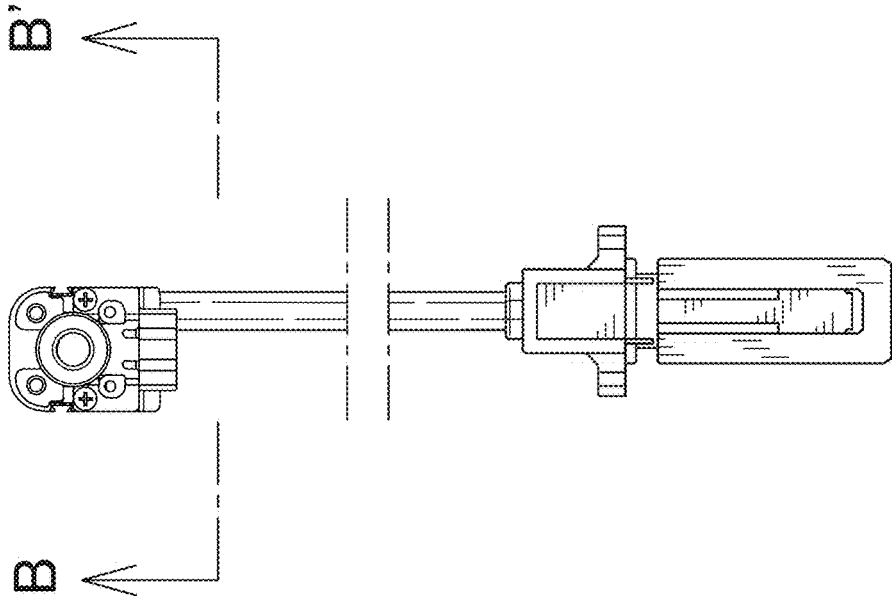


Fig. 34

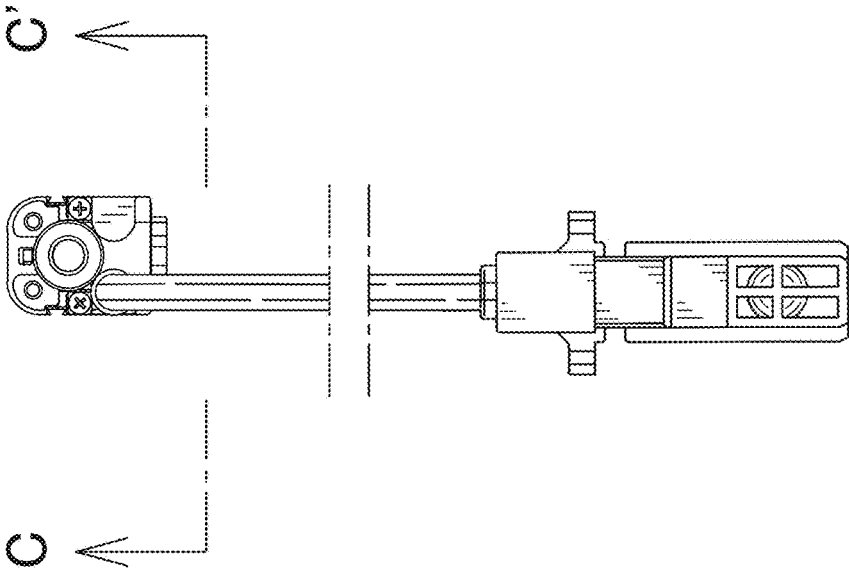


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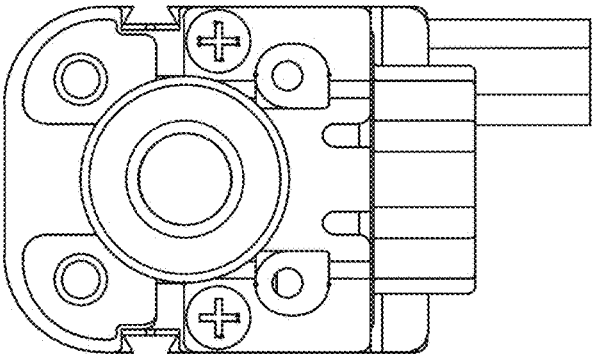


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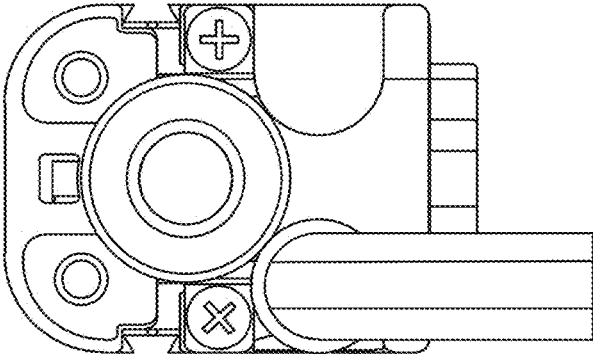


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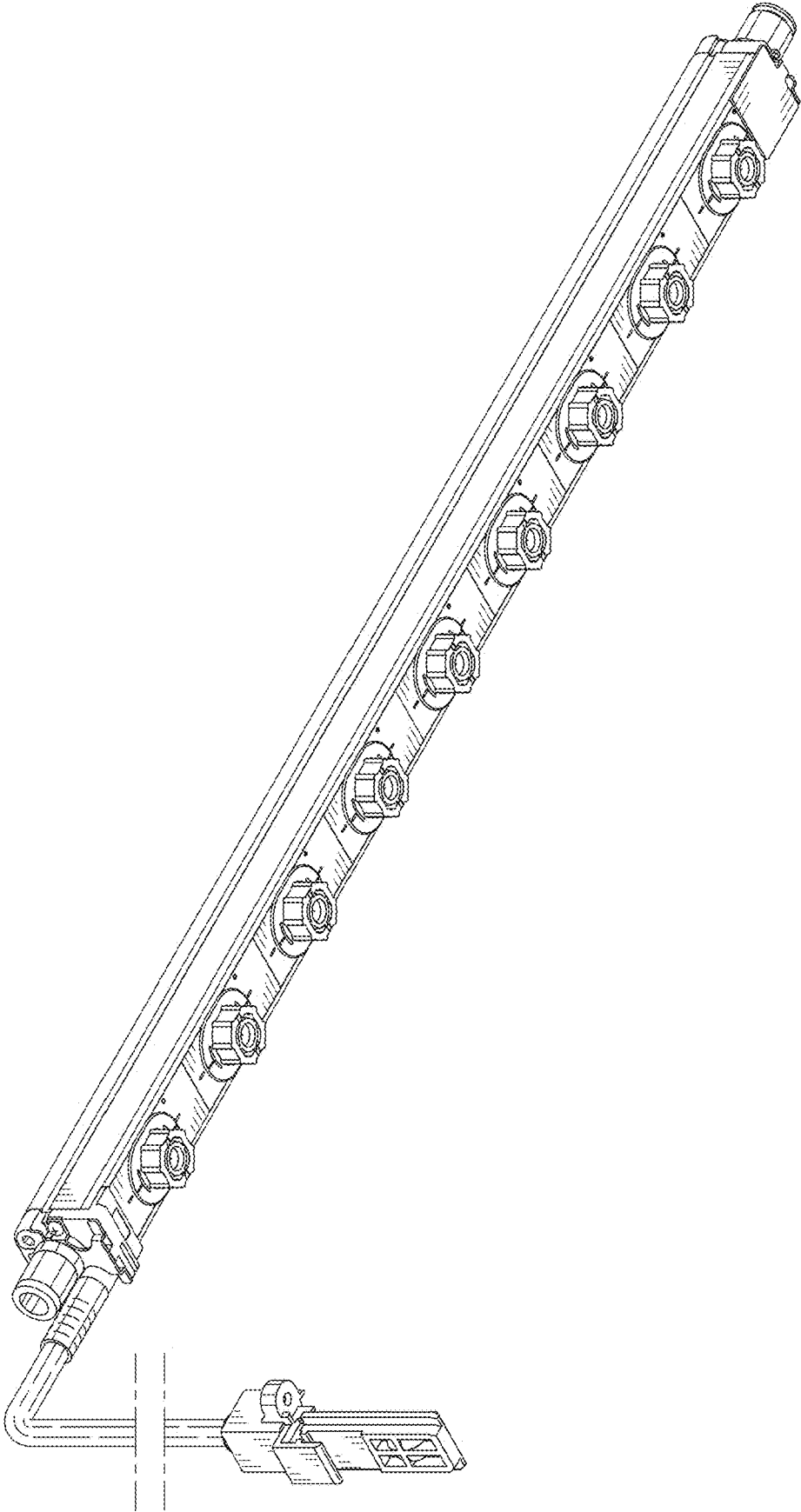


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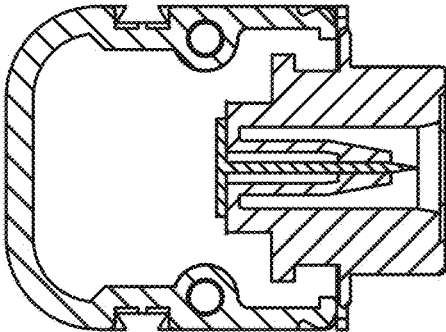


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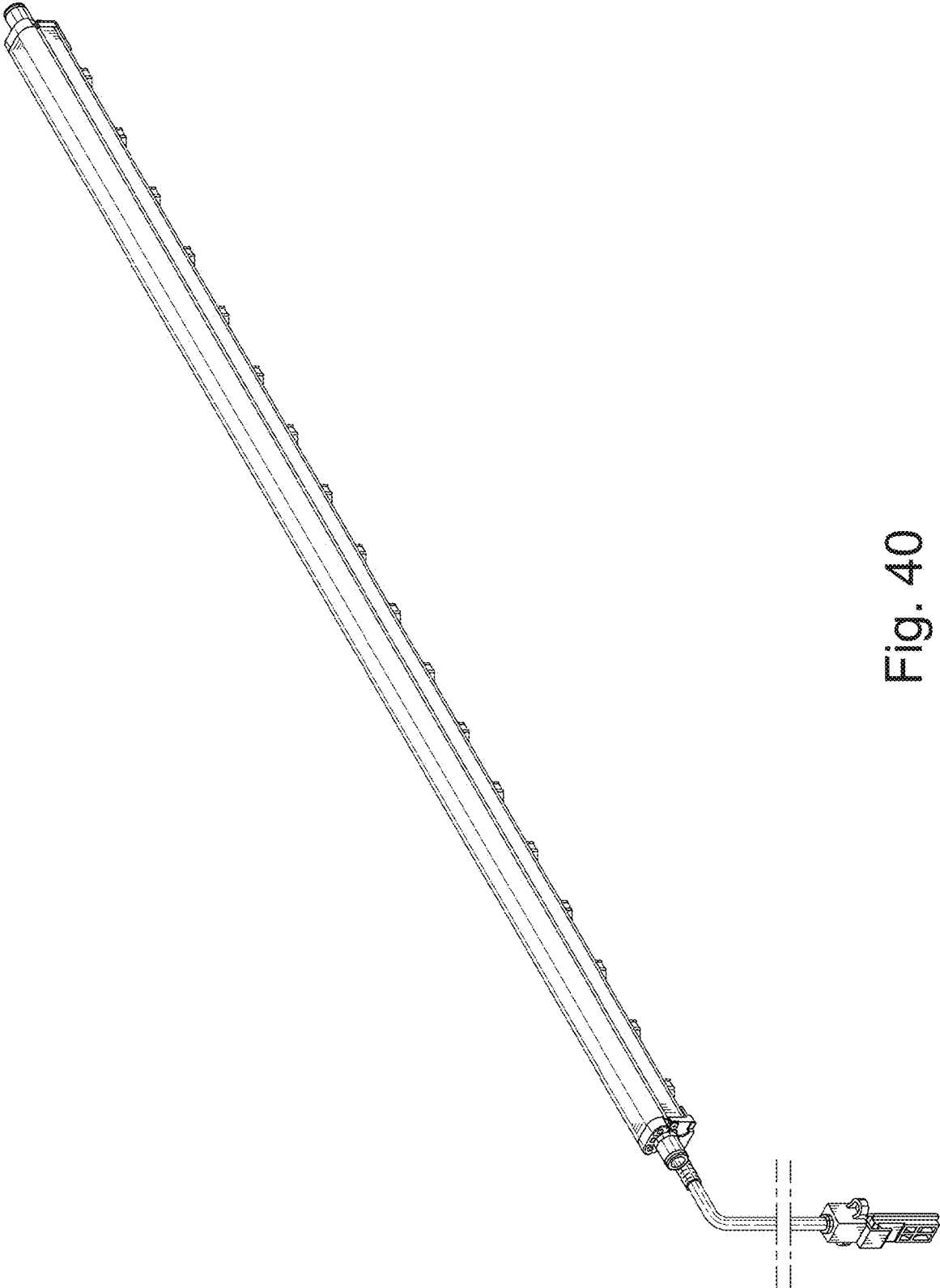


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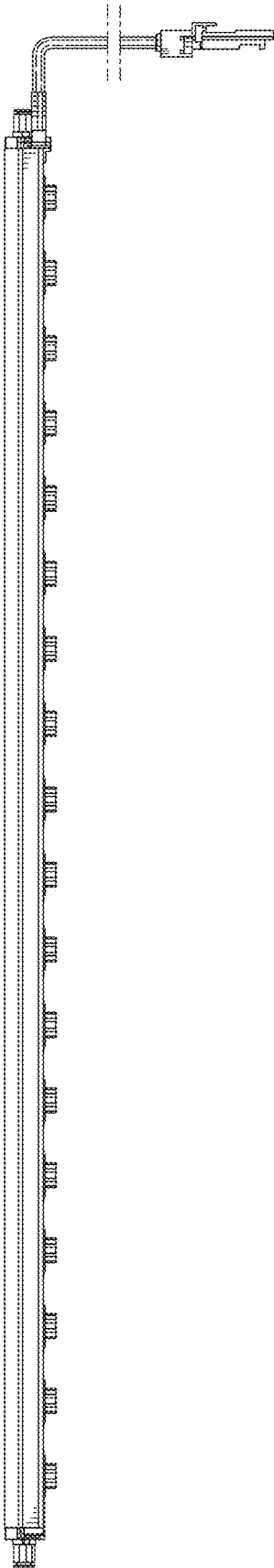


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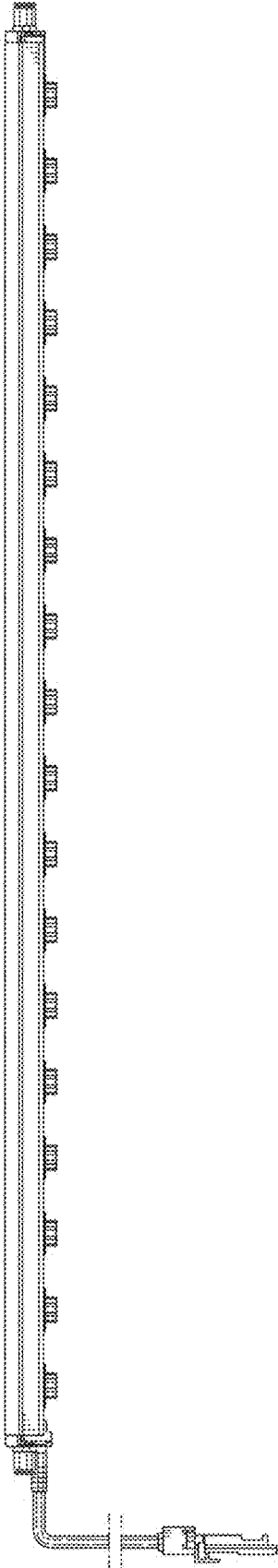


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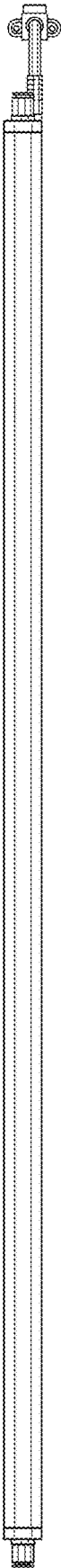


Fig. 43



Fig. 44

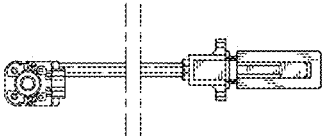


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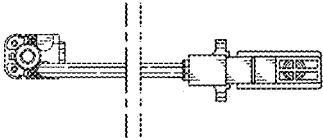


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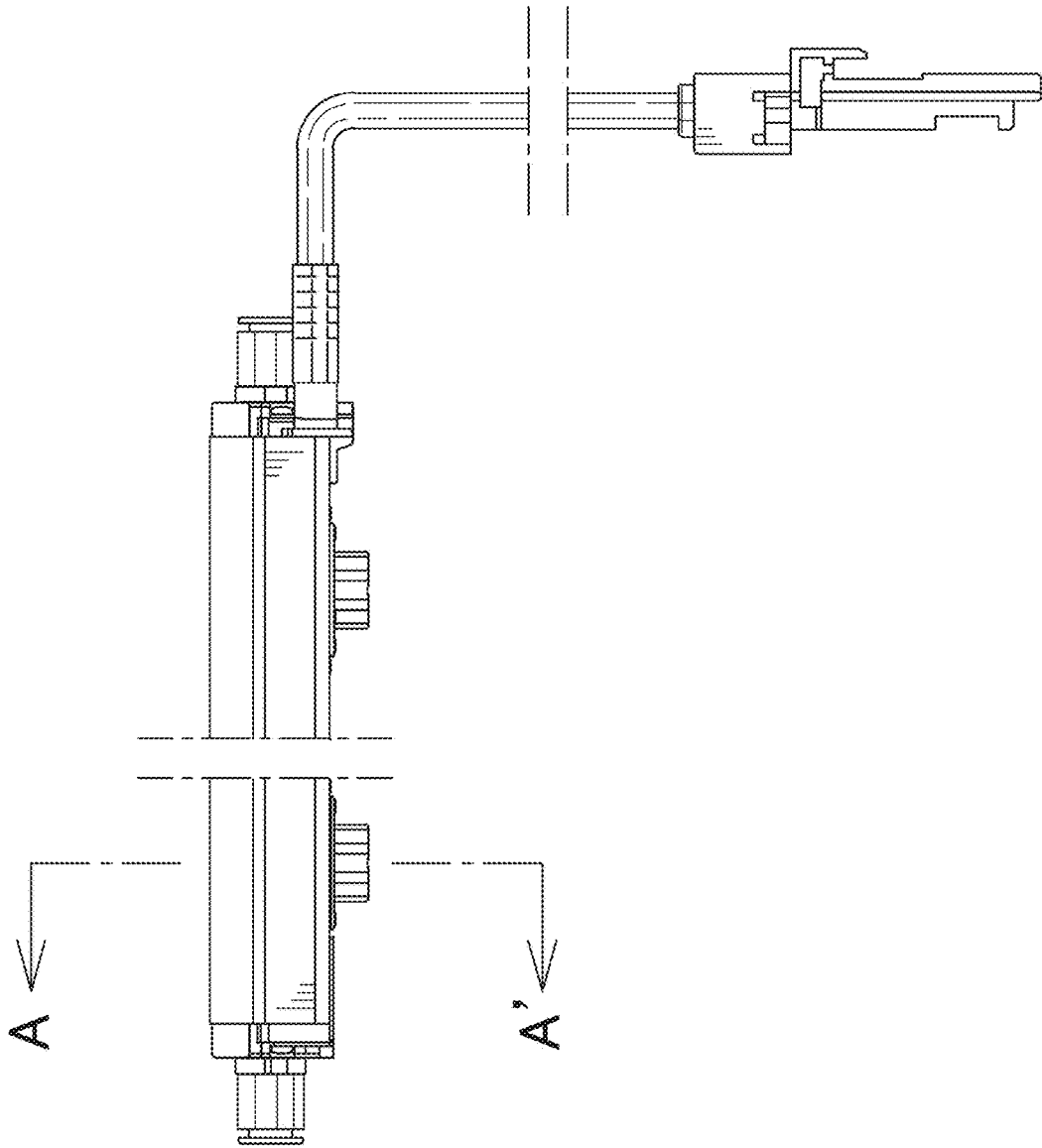


Fig. 47

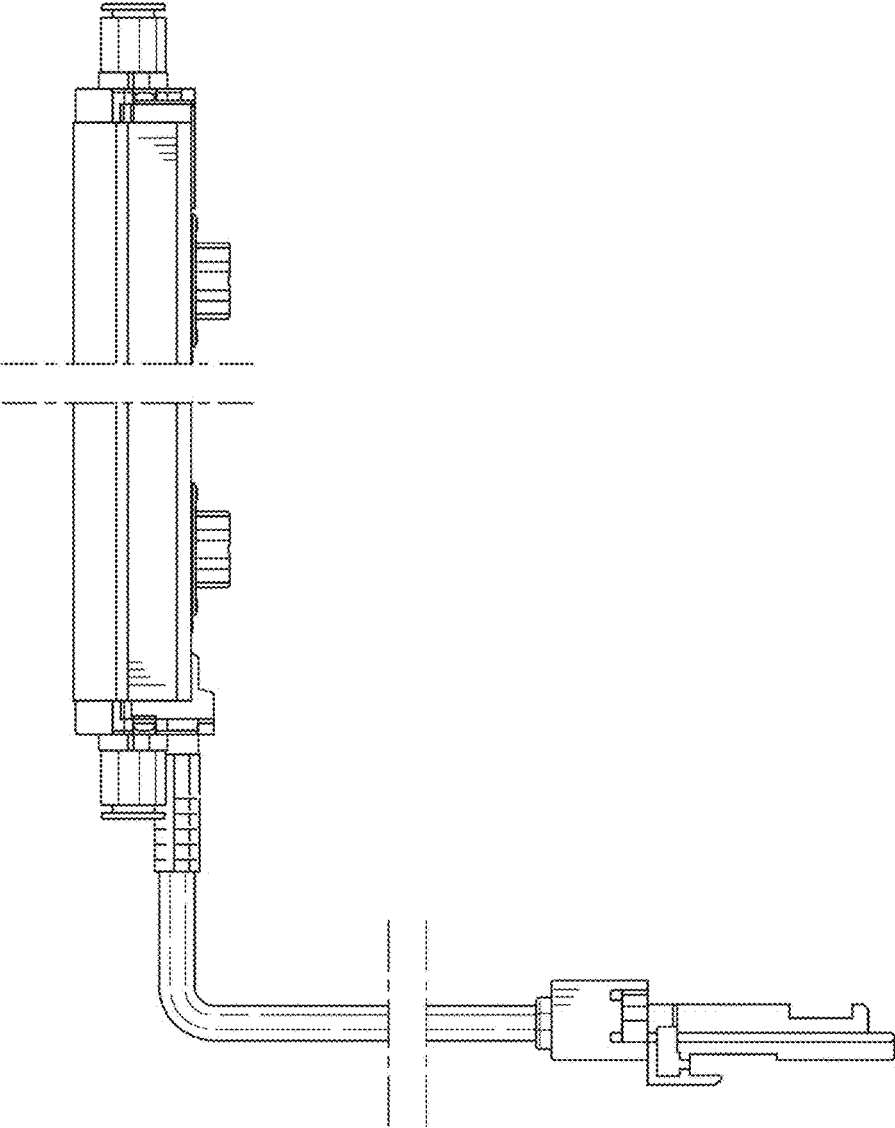


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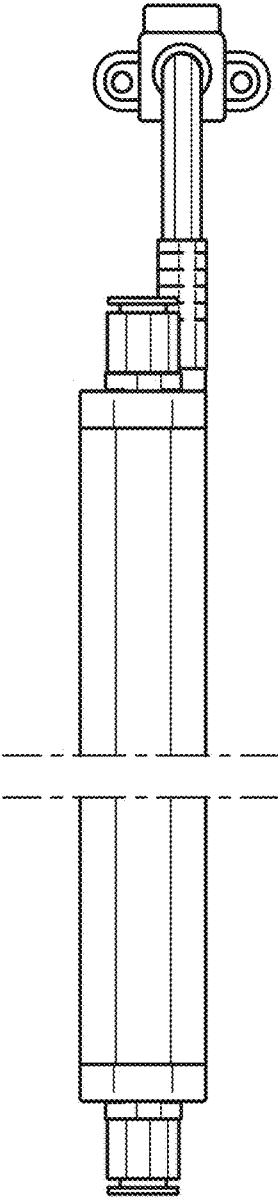


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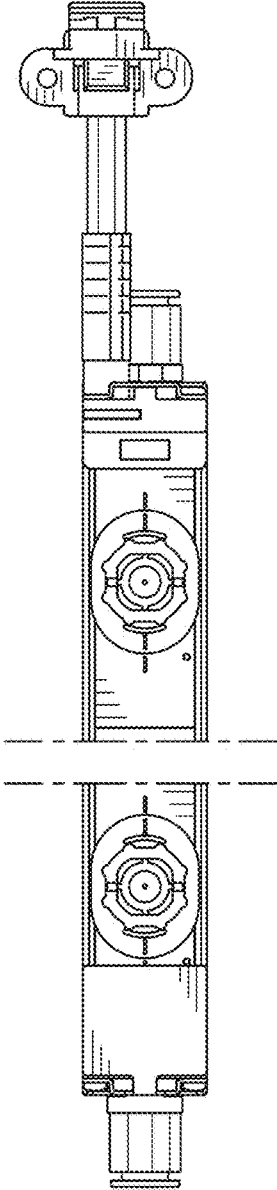


Fig. 50

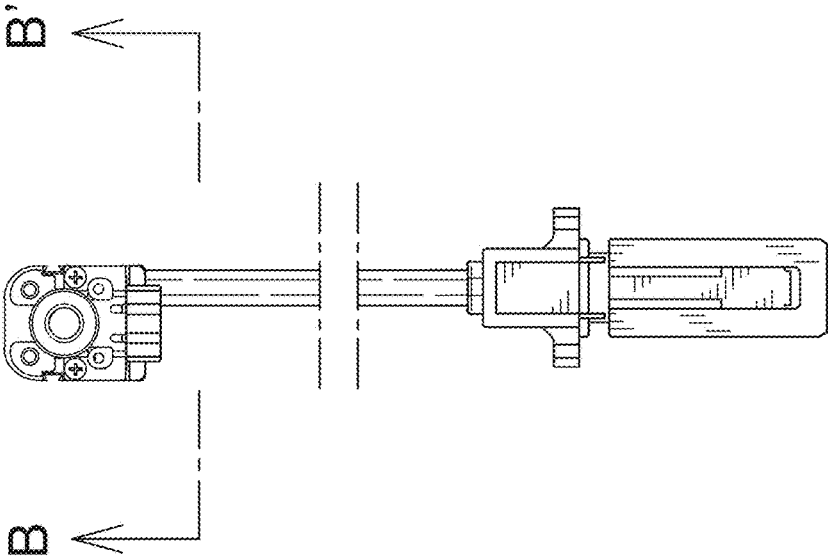


Fig. 51

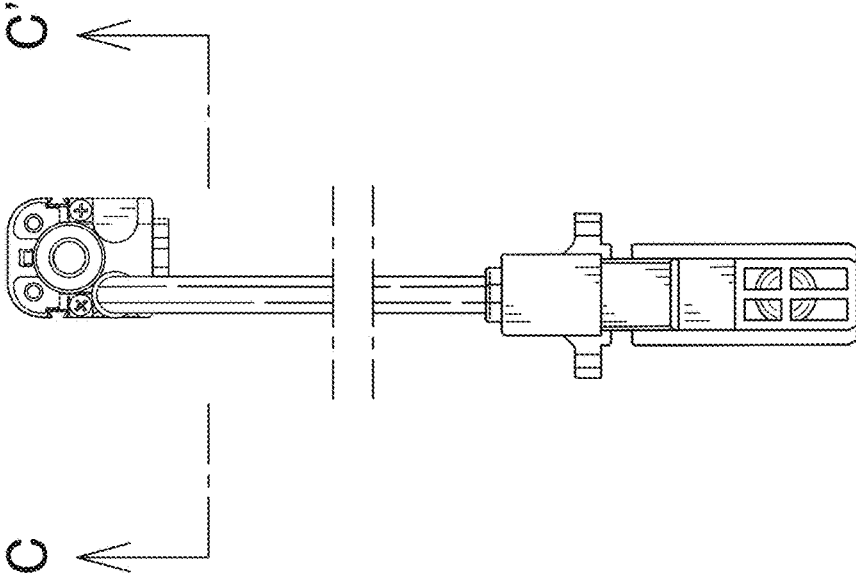


Fig. 52

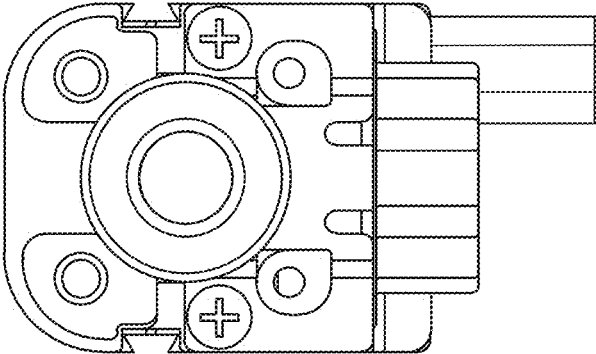


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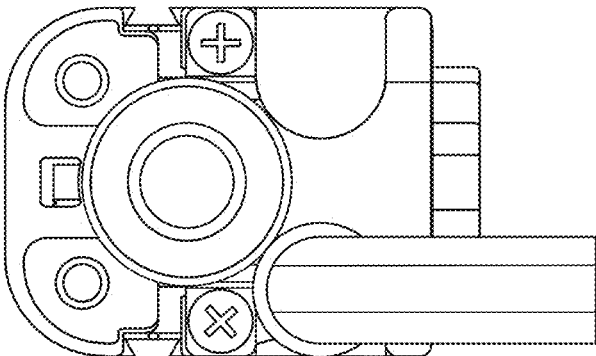


Fig. 54

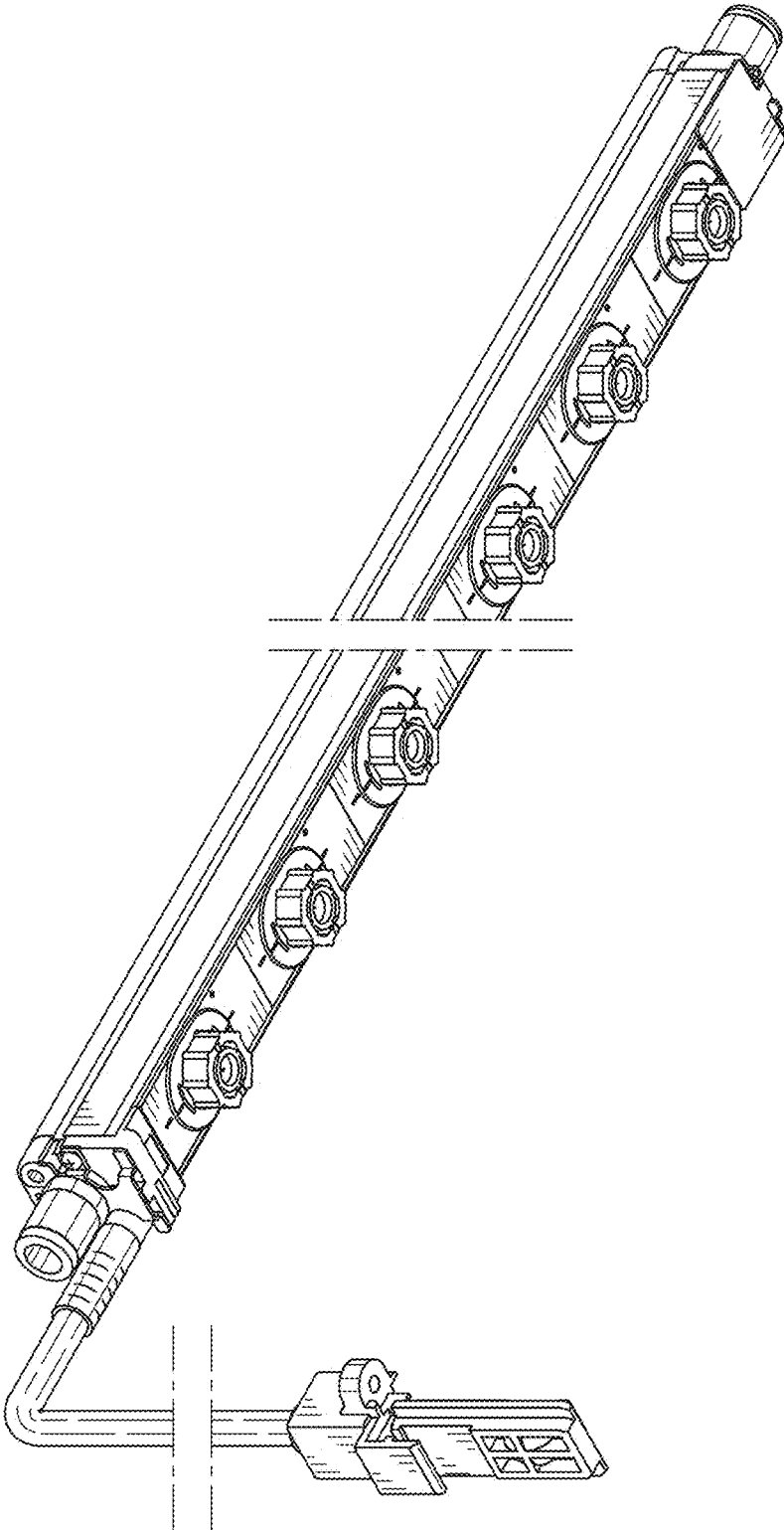


Fig. 55

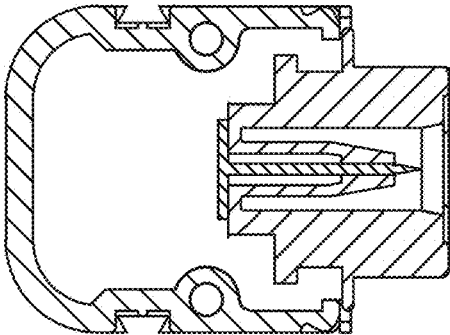


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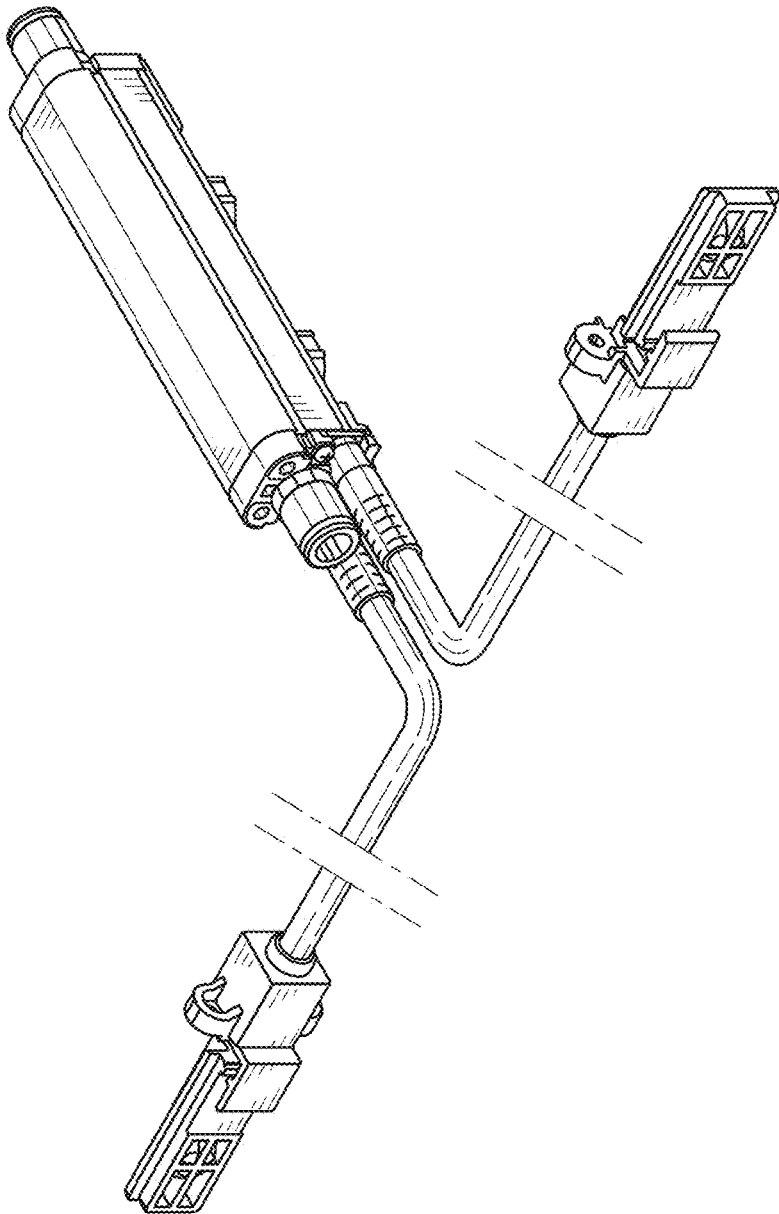


Fig. 57

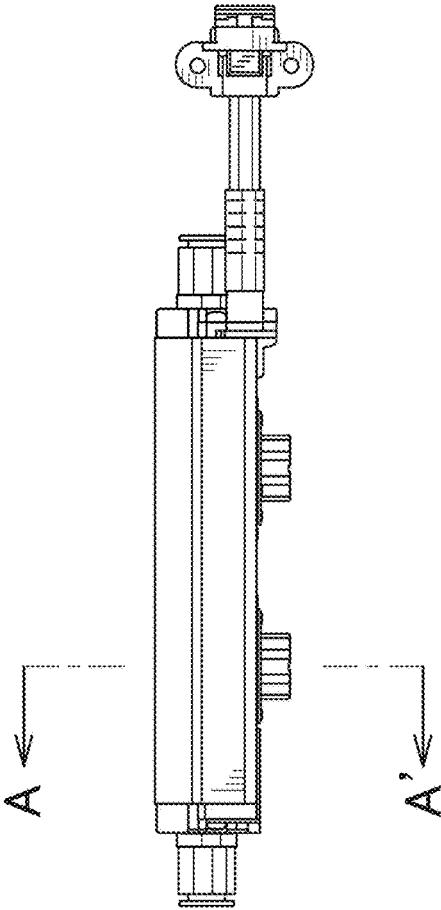


Fig. 58

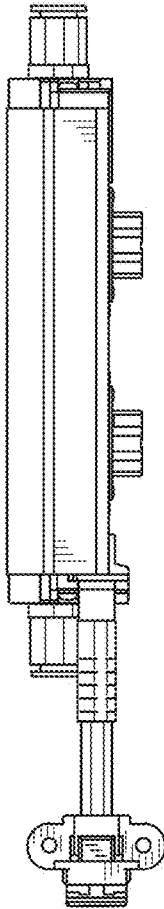


Fig. 59

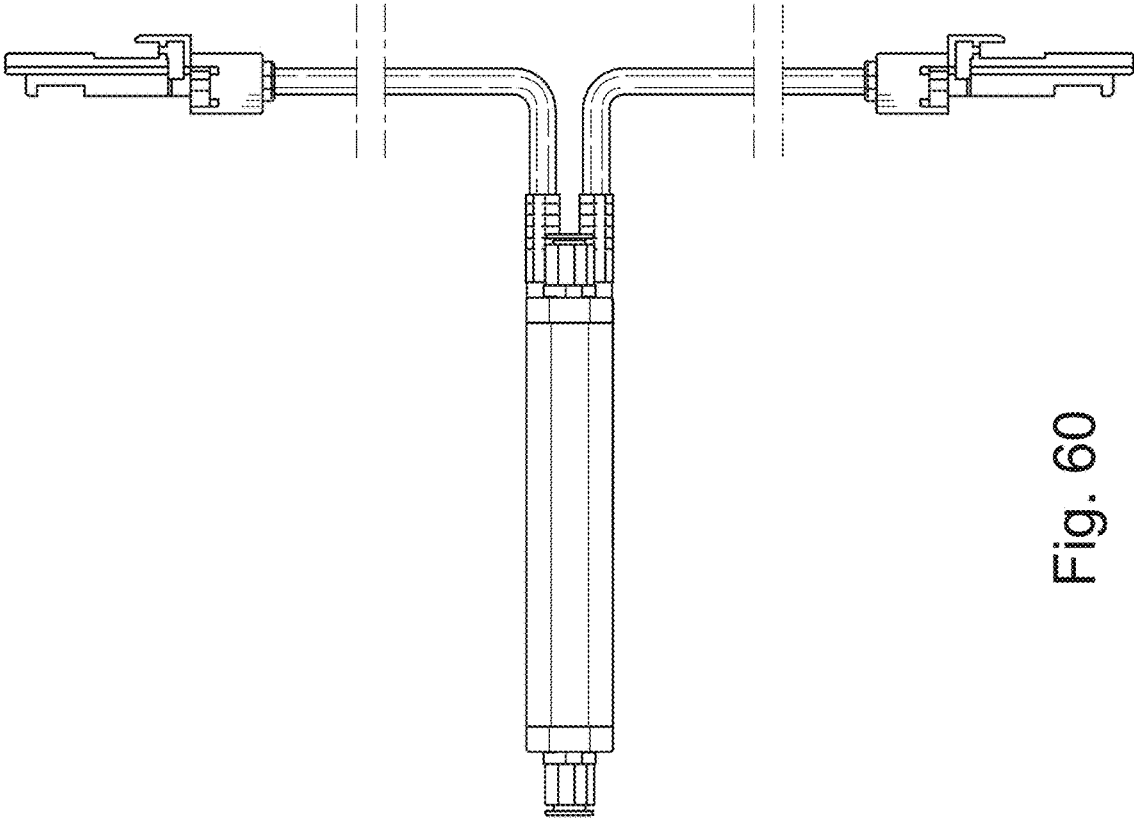


Fig. 60

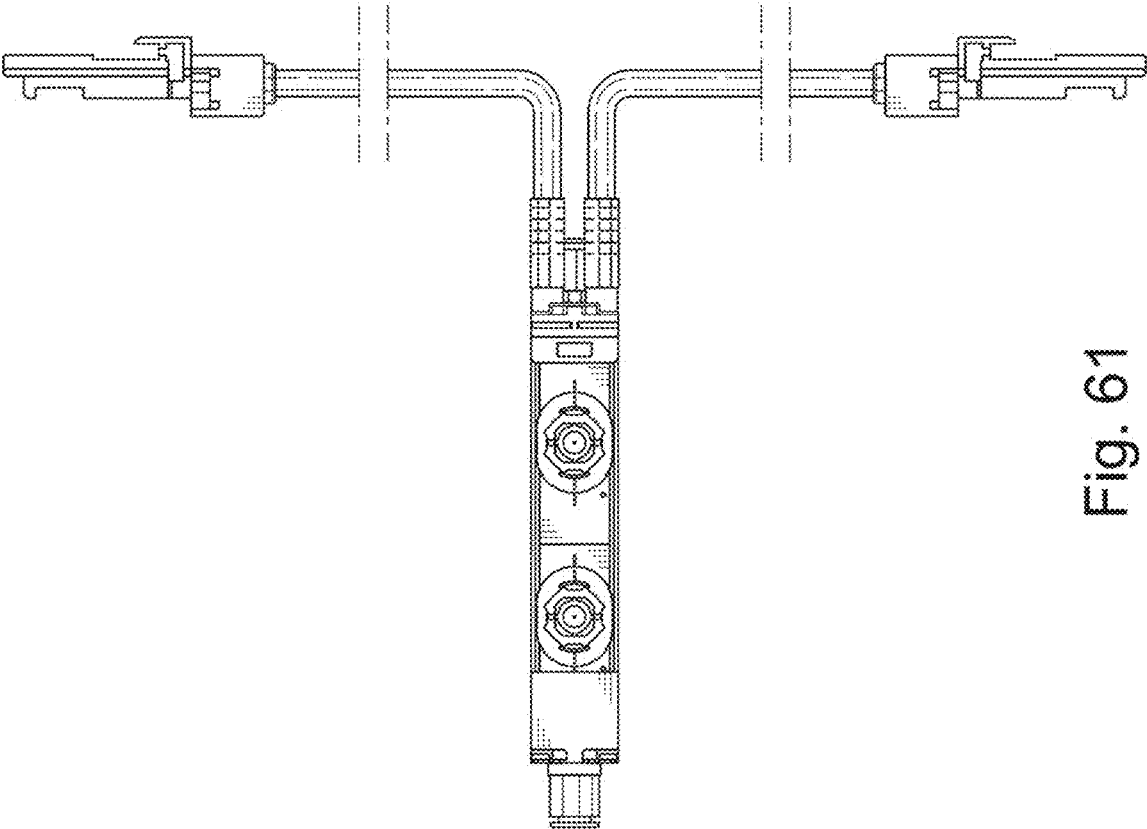


Fig. 61

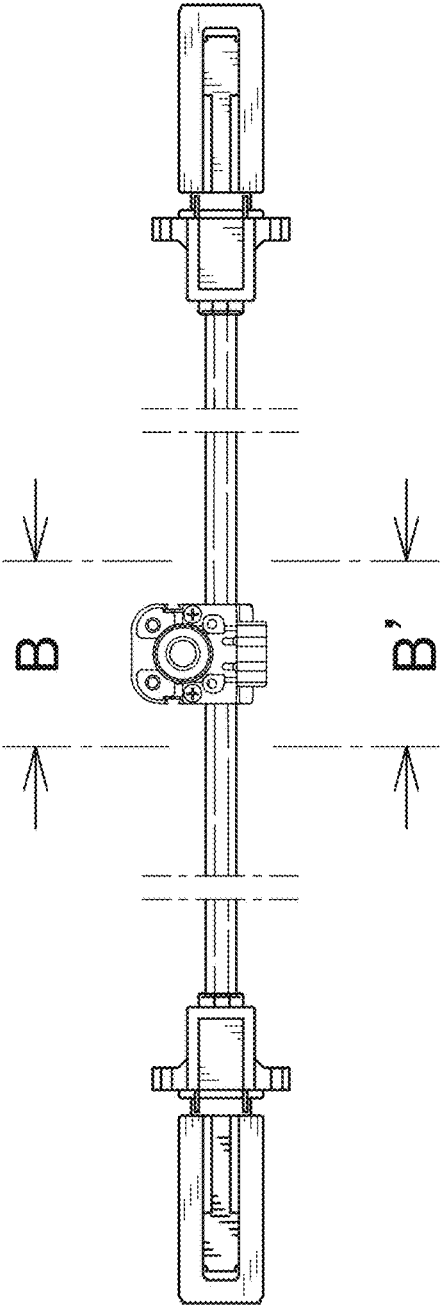


Fig. 62

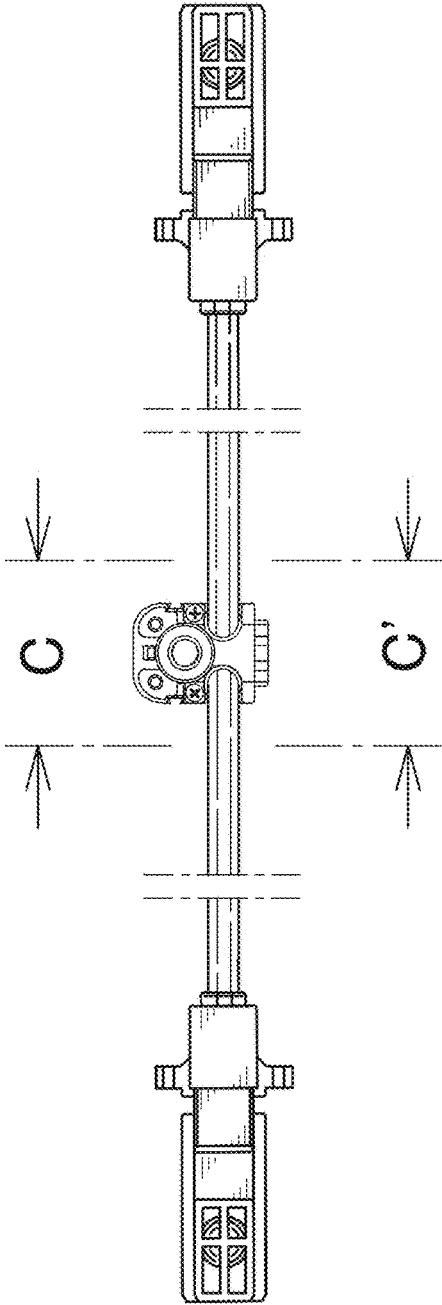


Fig. 63

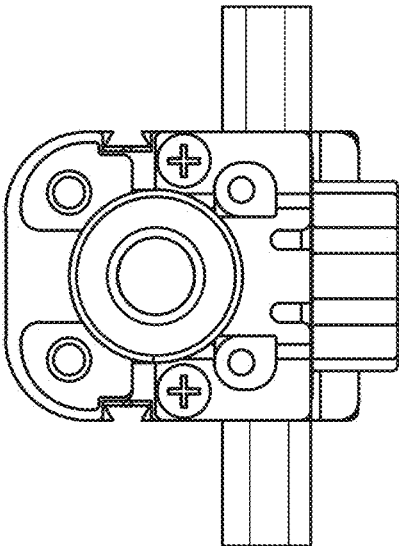


Fig. 64

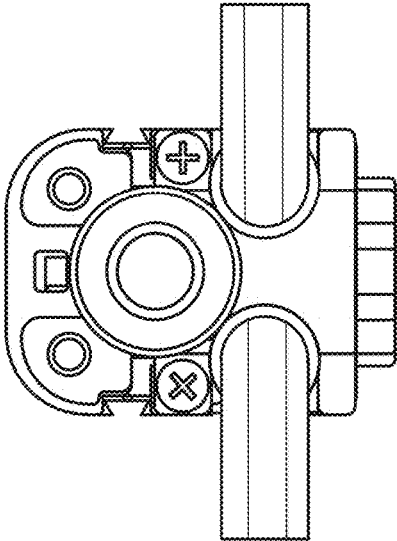


Fig. 65

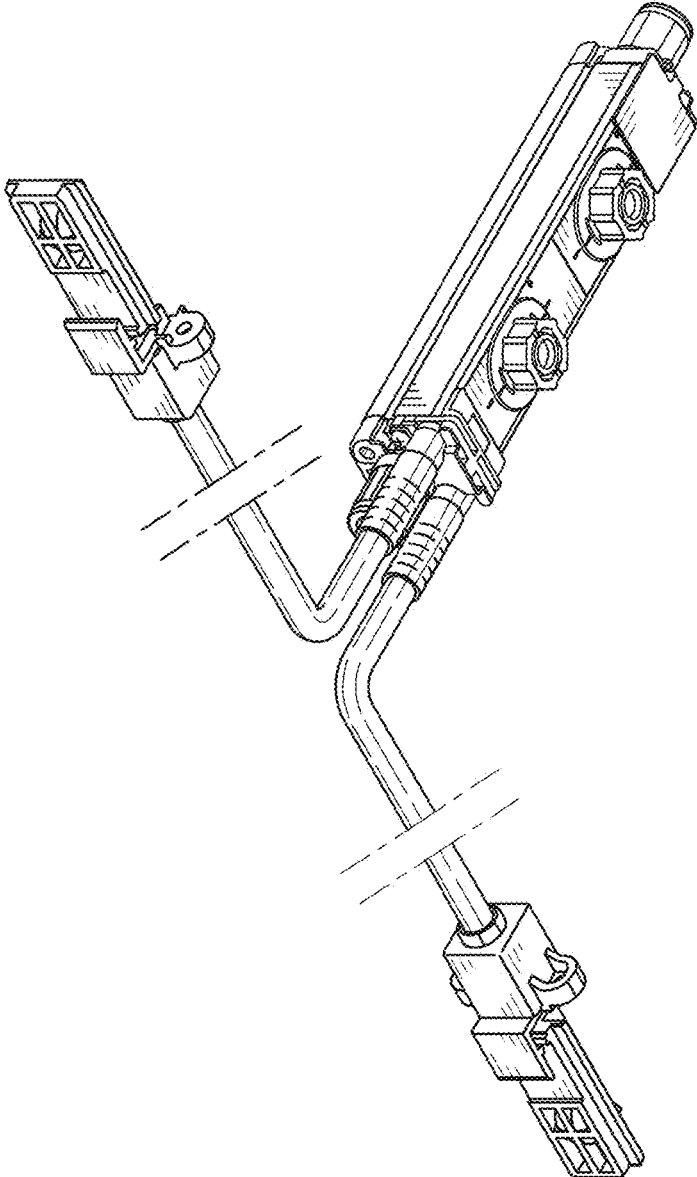


Fig. 66

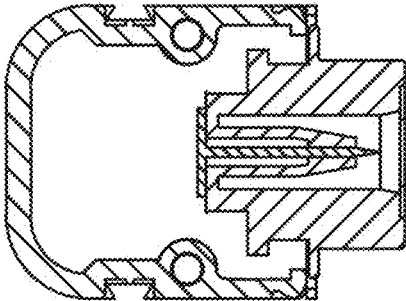


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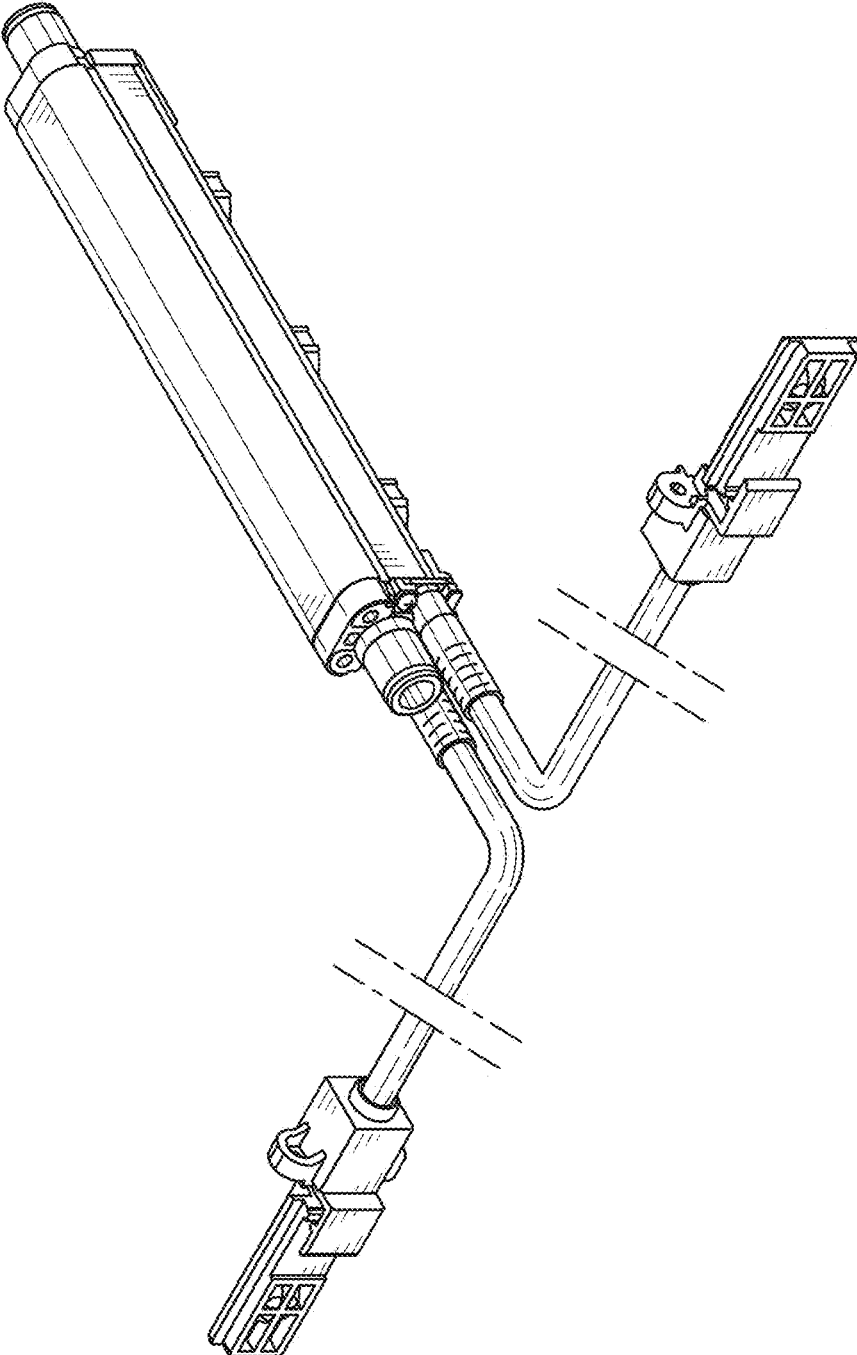


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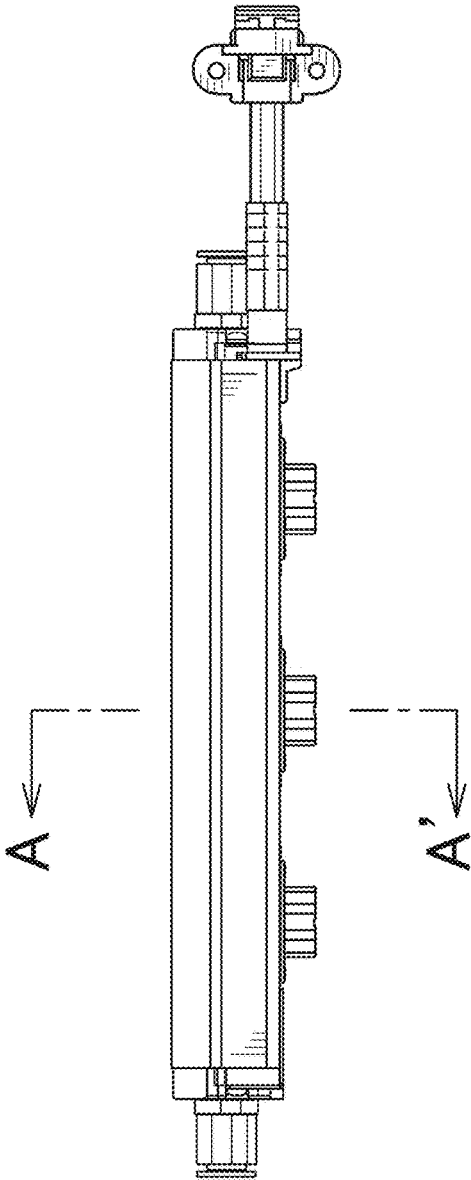


Fig. 69

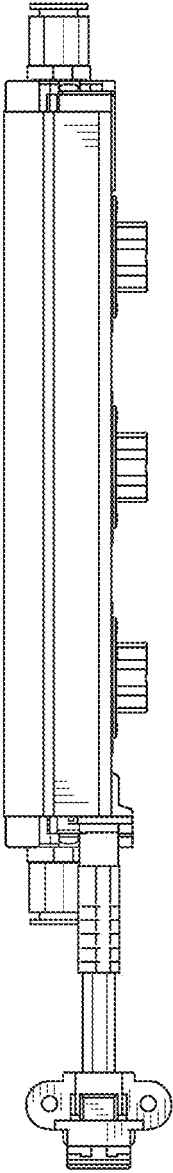


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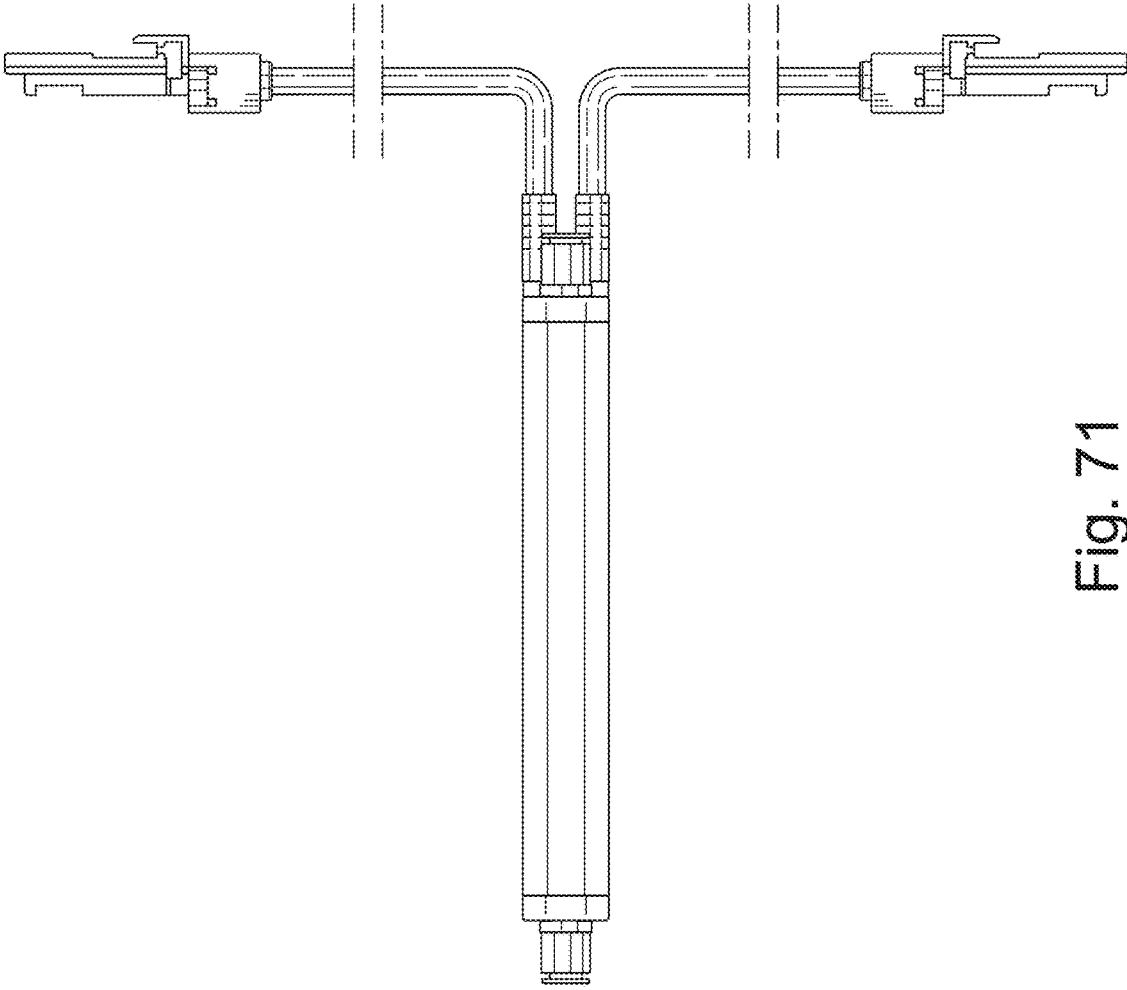


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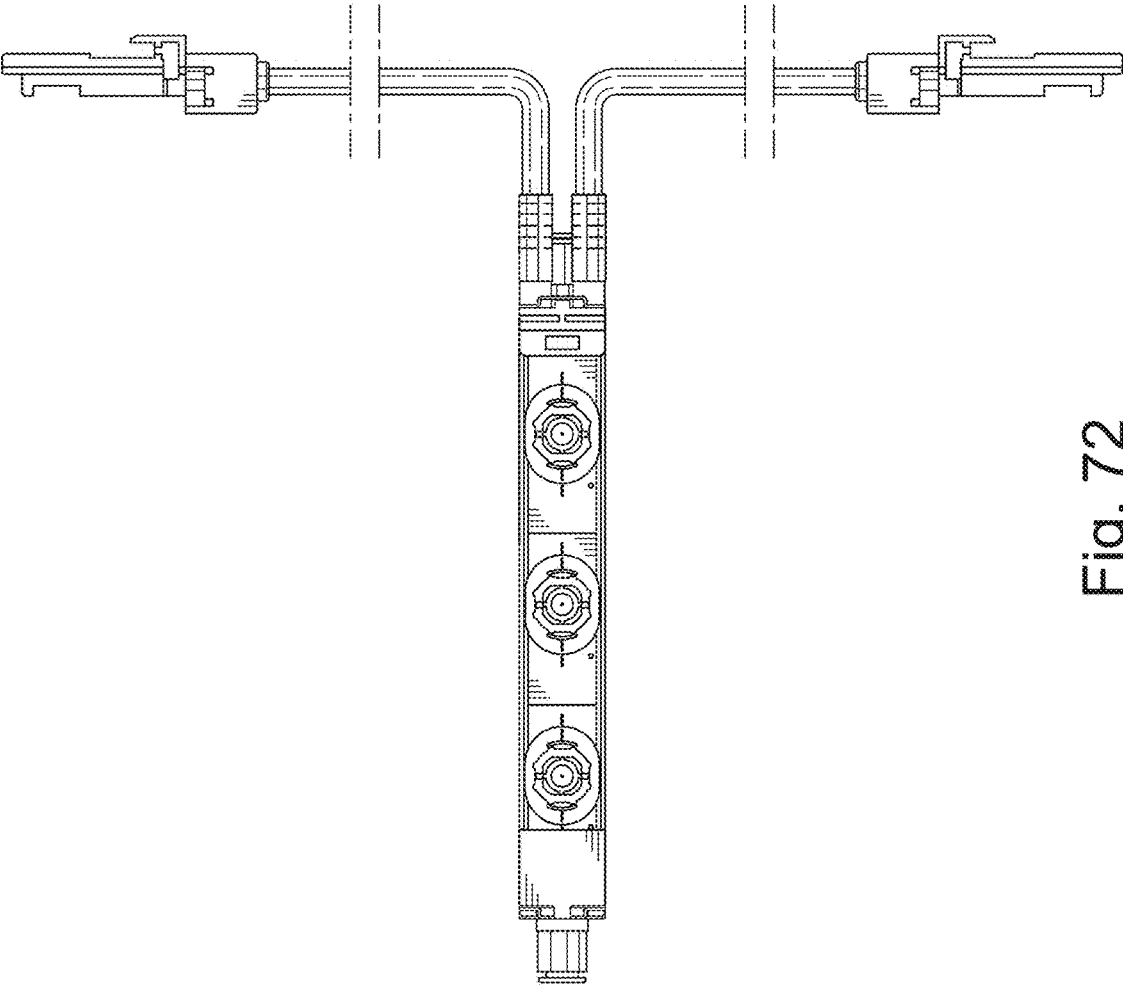


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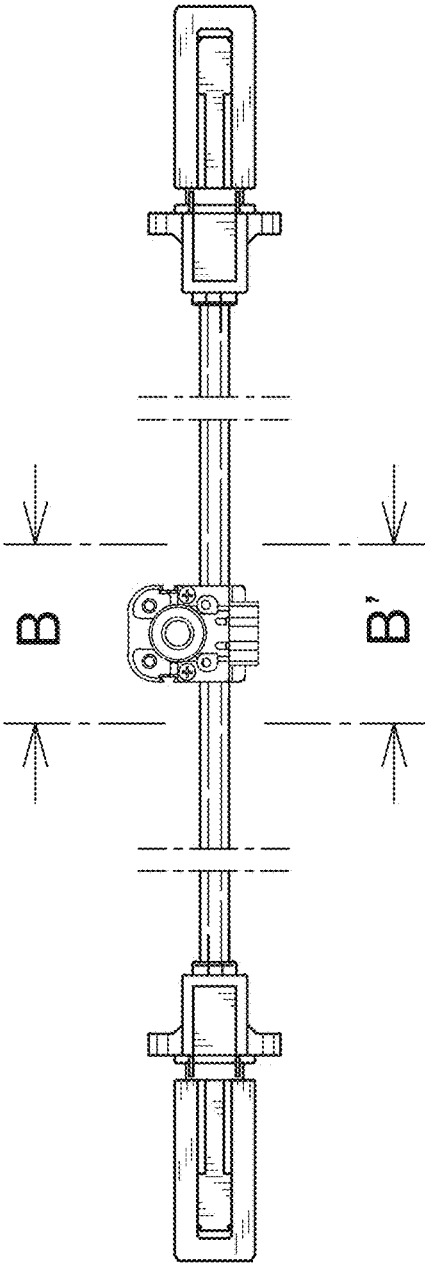


Fig. 73

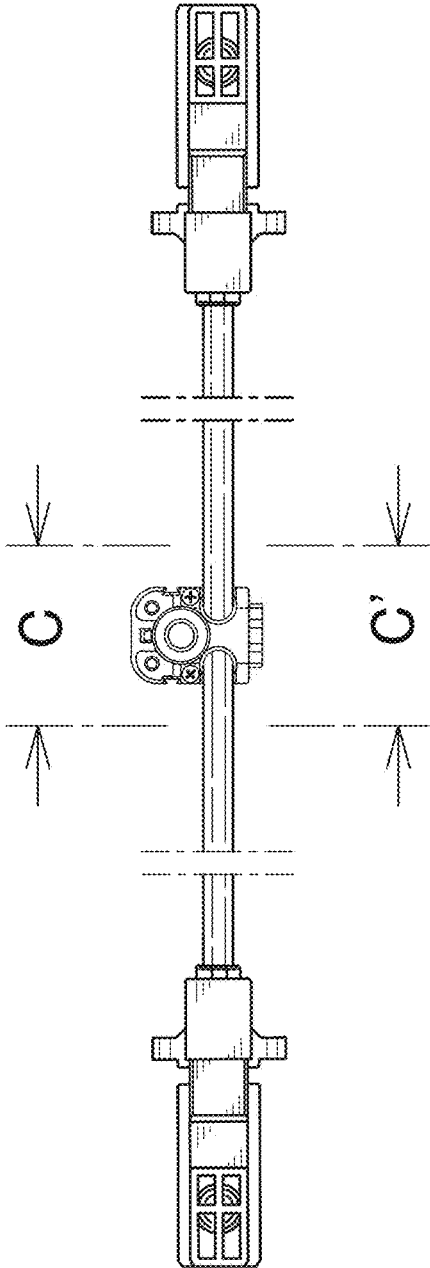


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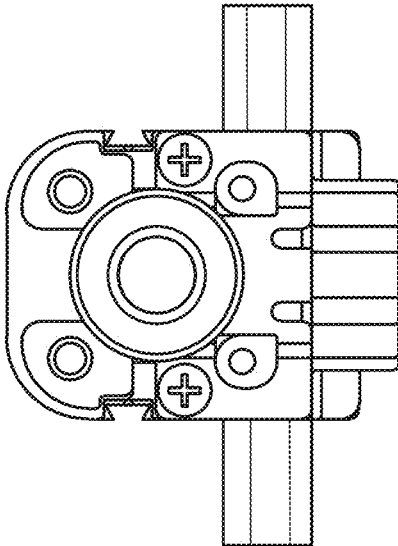


Fig. 75

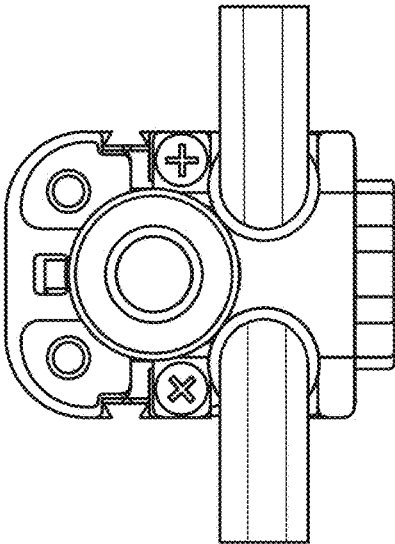


Fig. 76

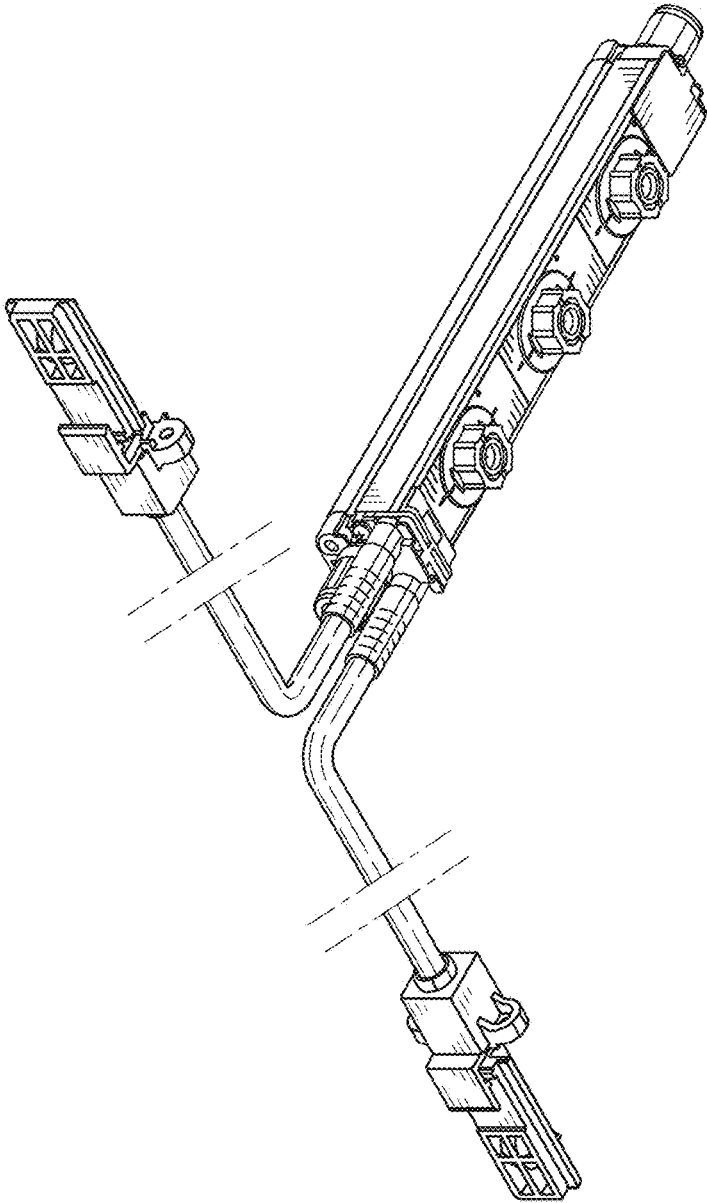


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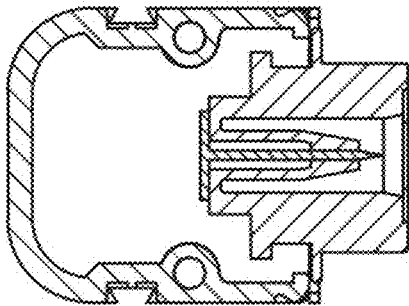


Fig. 78

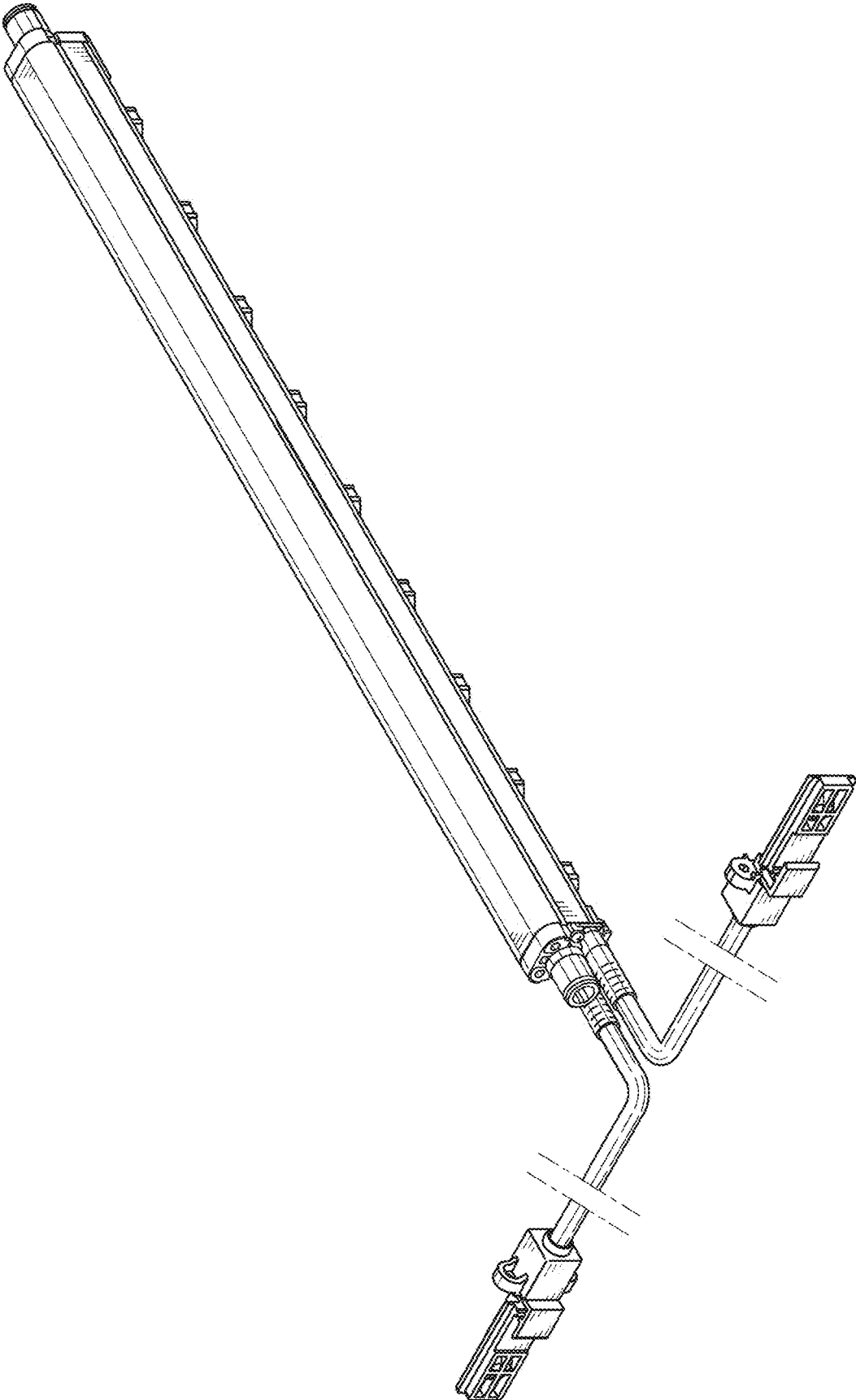


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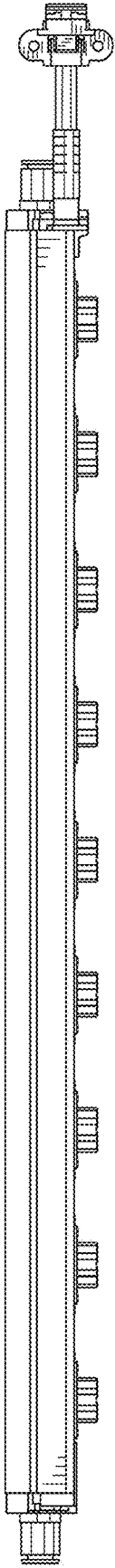


Fig. 80

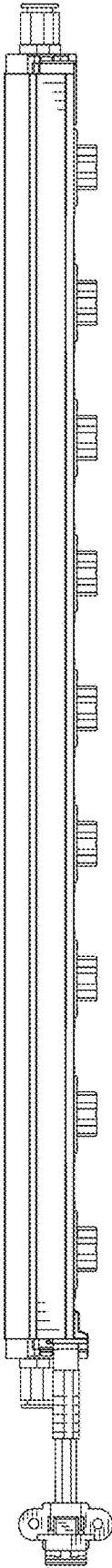


Fig. 81

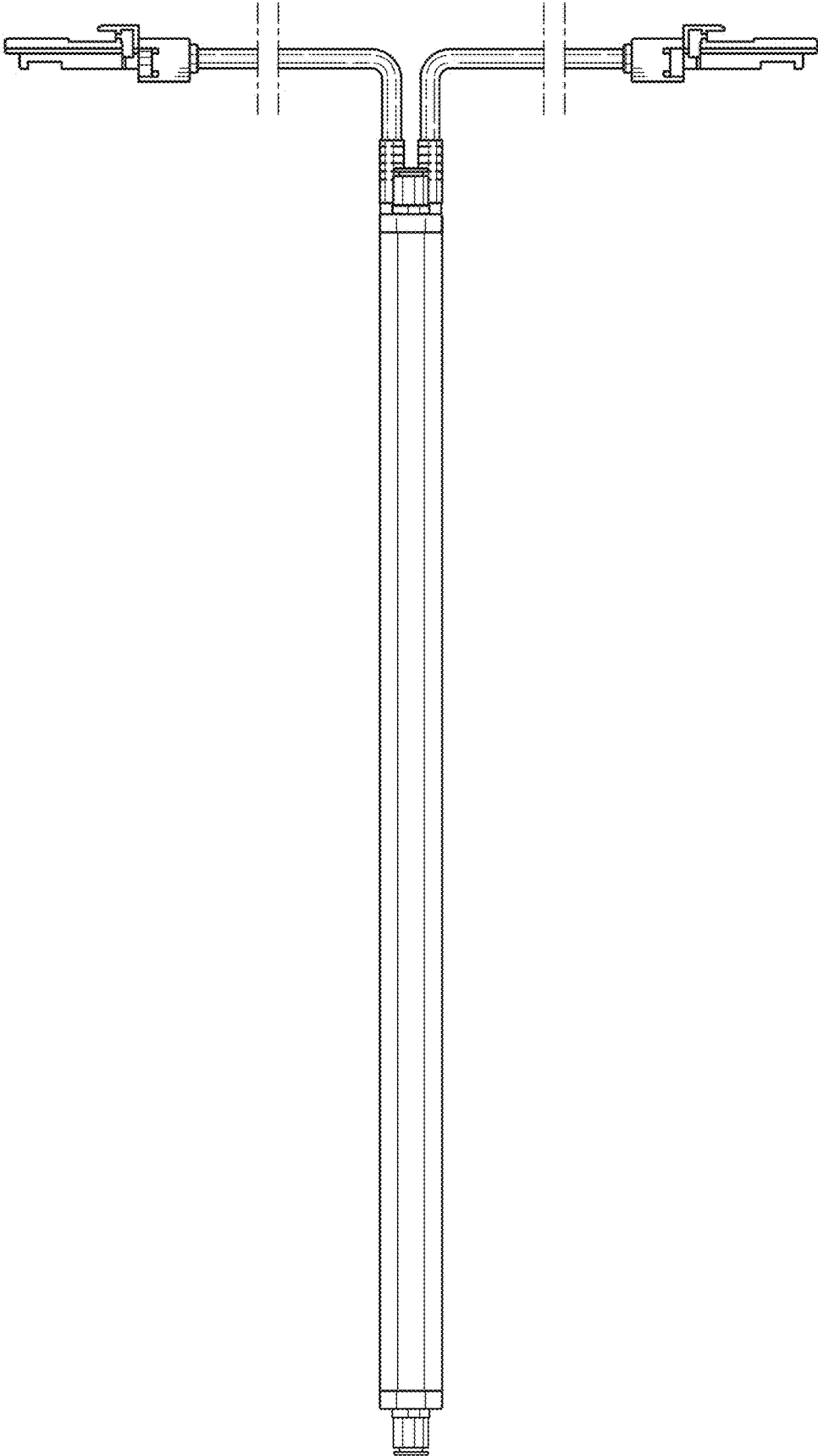


Fig. 82

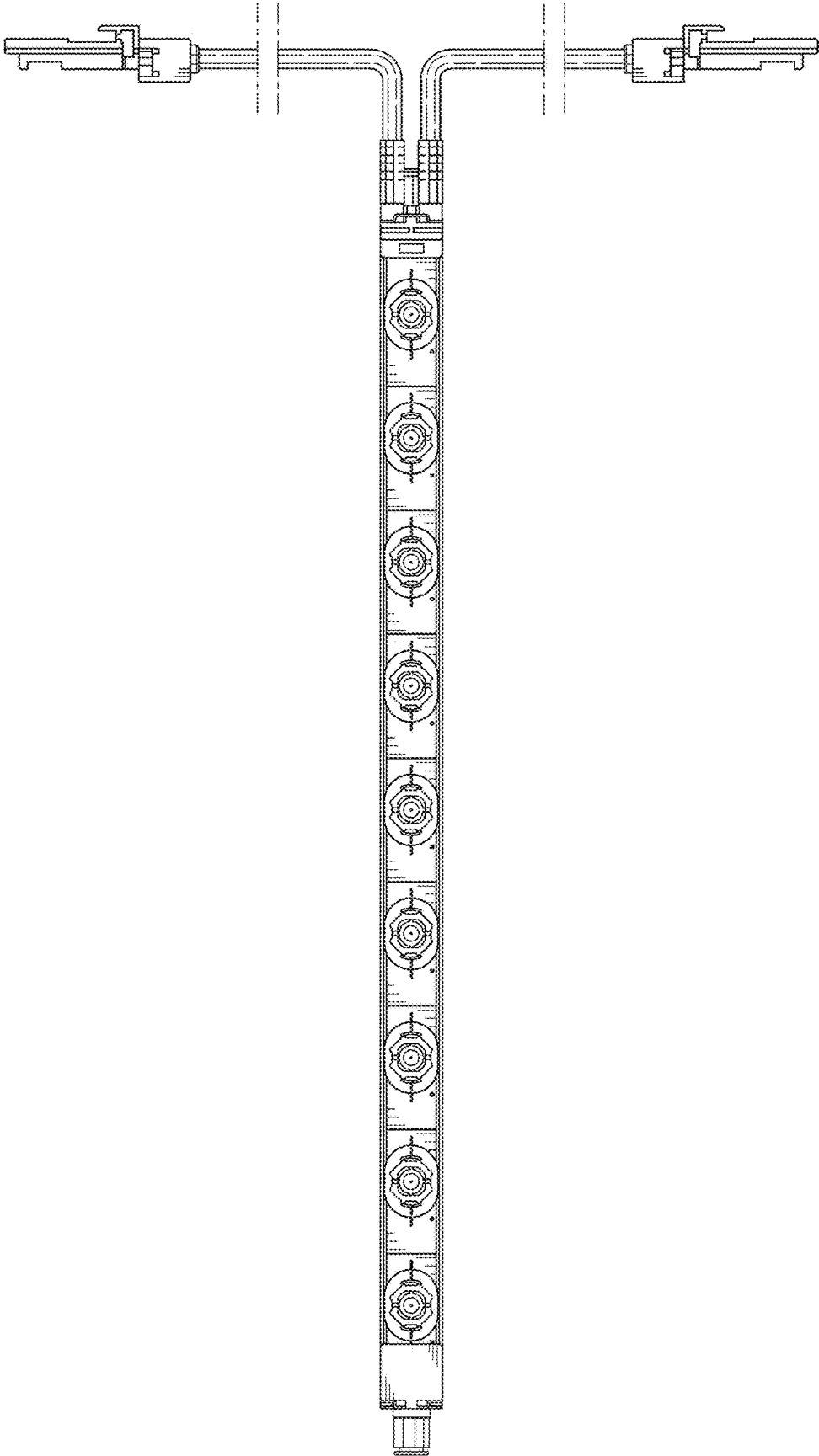


Fig. 83

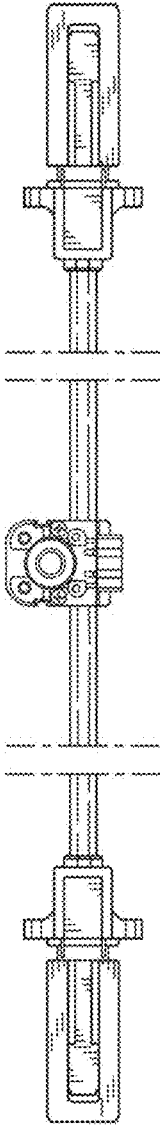


Fig. 84

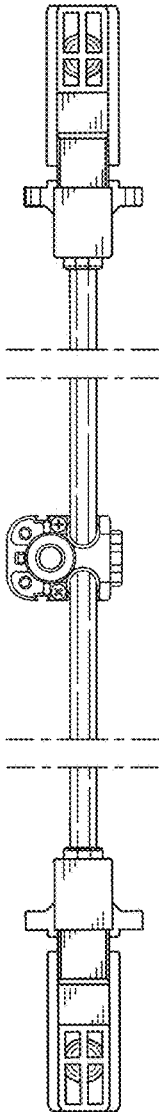


Fig. 85

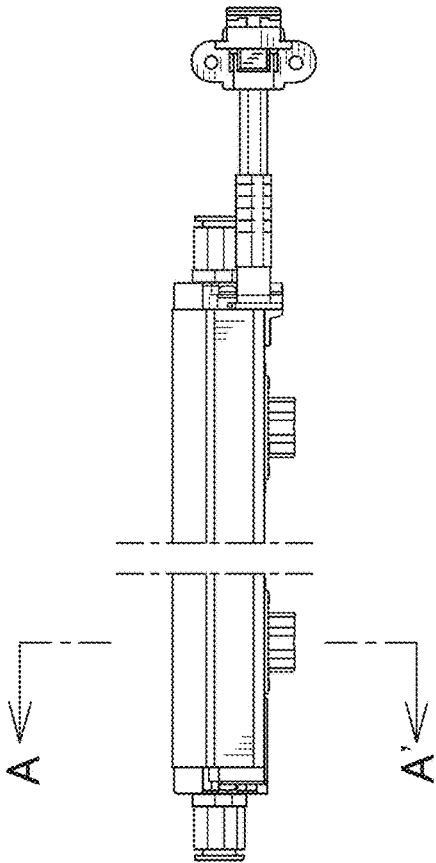


Fig. 86

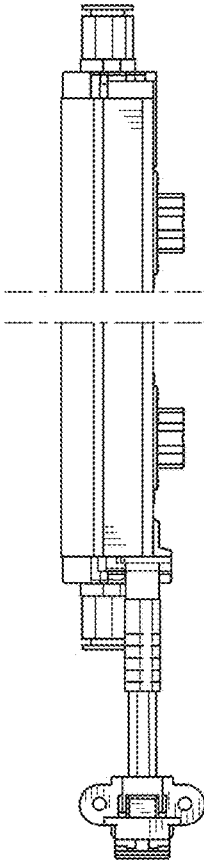


Fig. 87

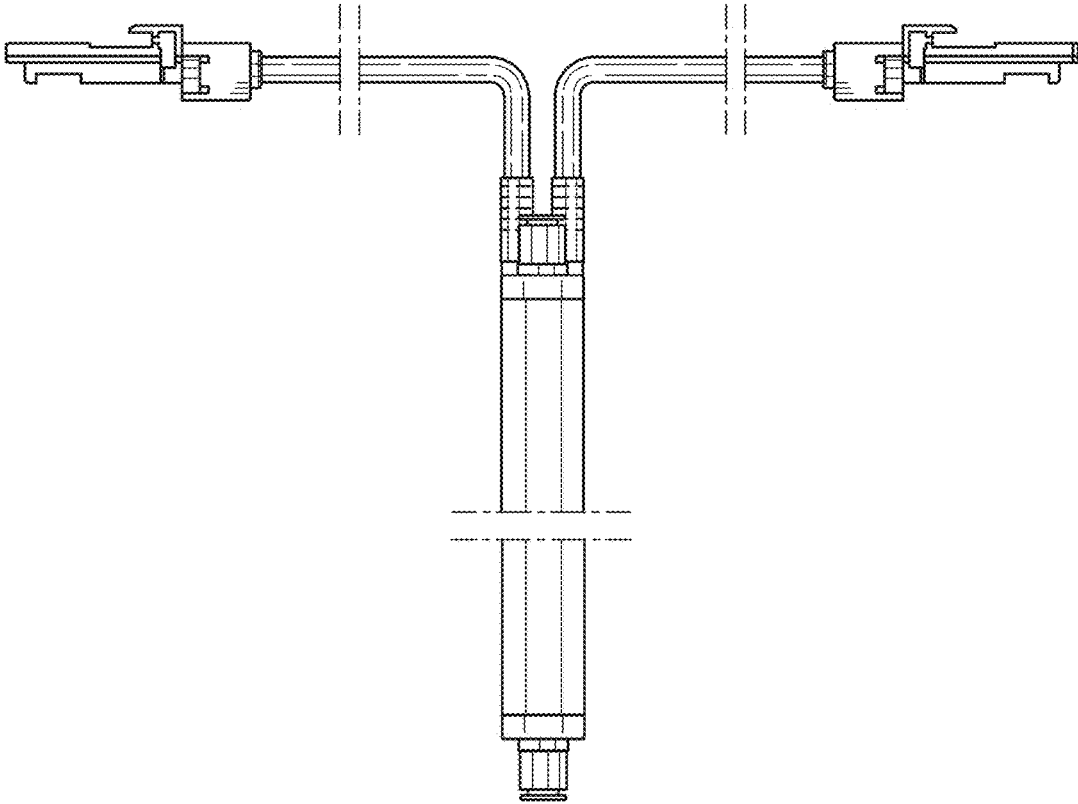


Fig. 88

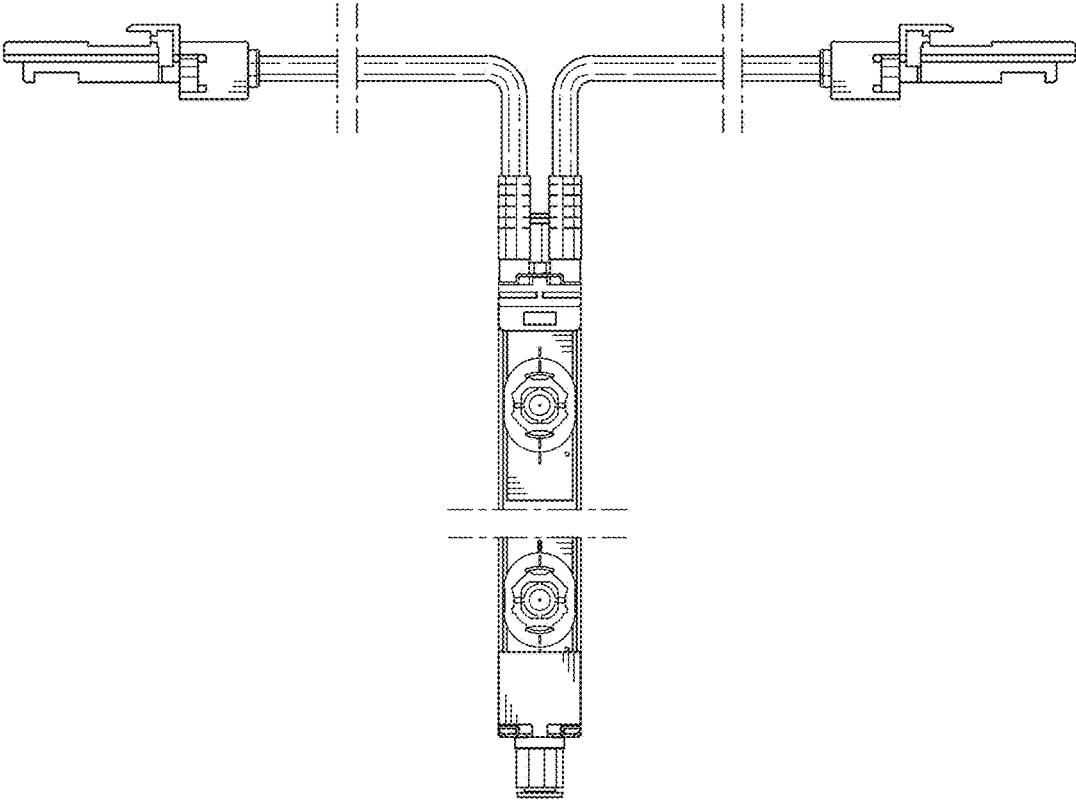


Fig. 89

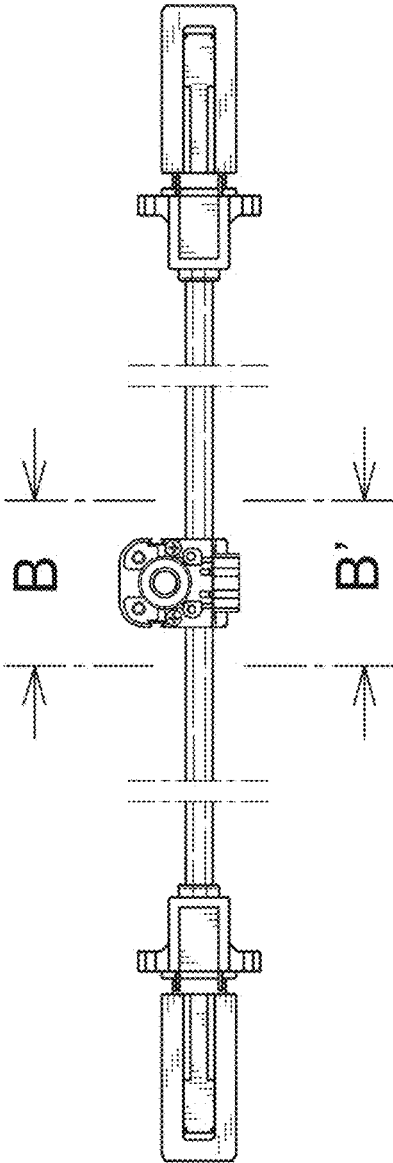


Fig. 90

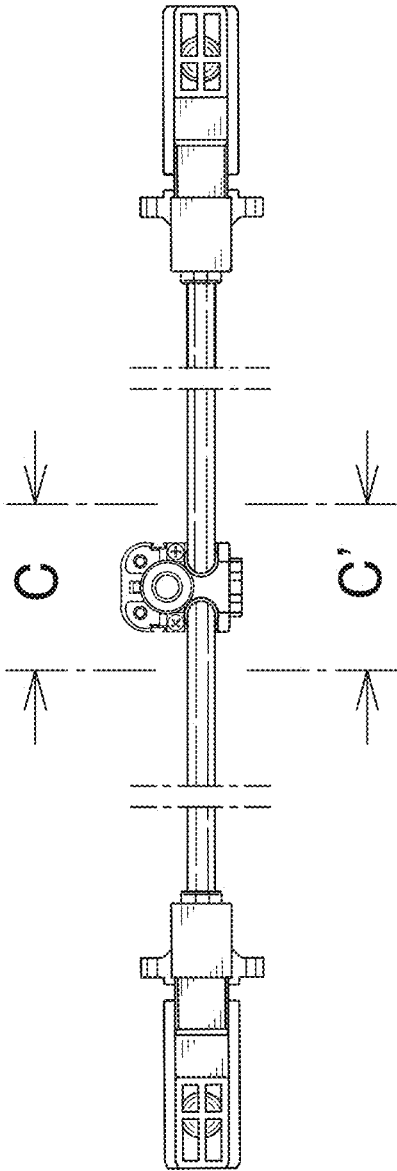


Fig. 91

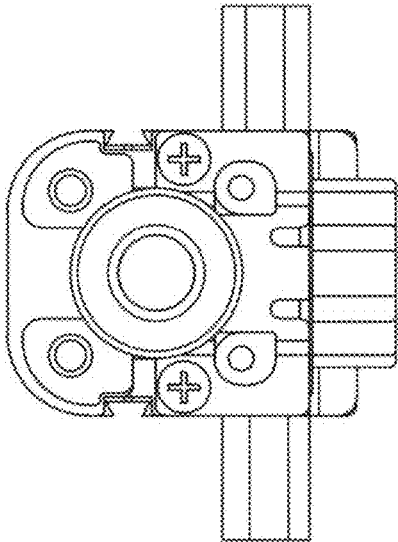


Fig. 92

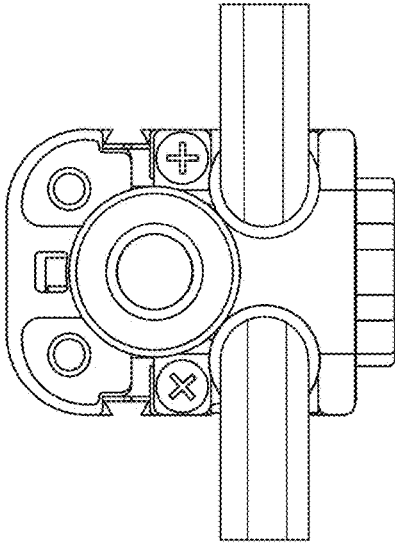


Fig. 93

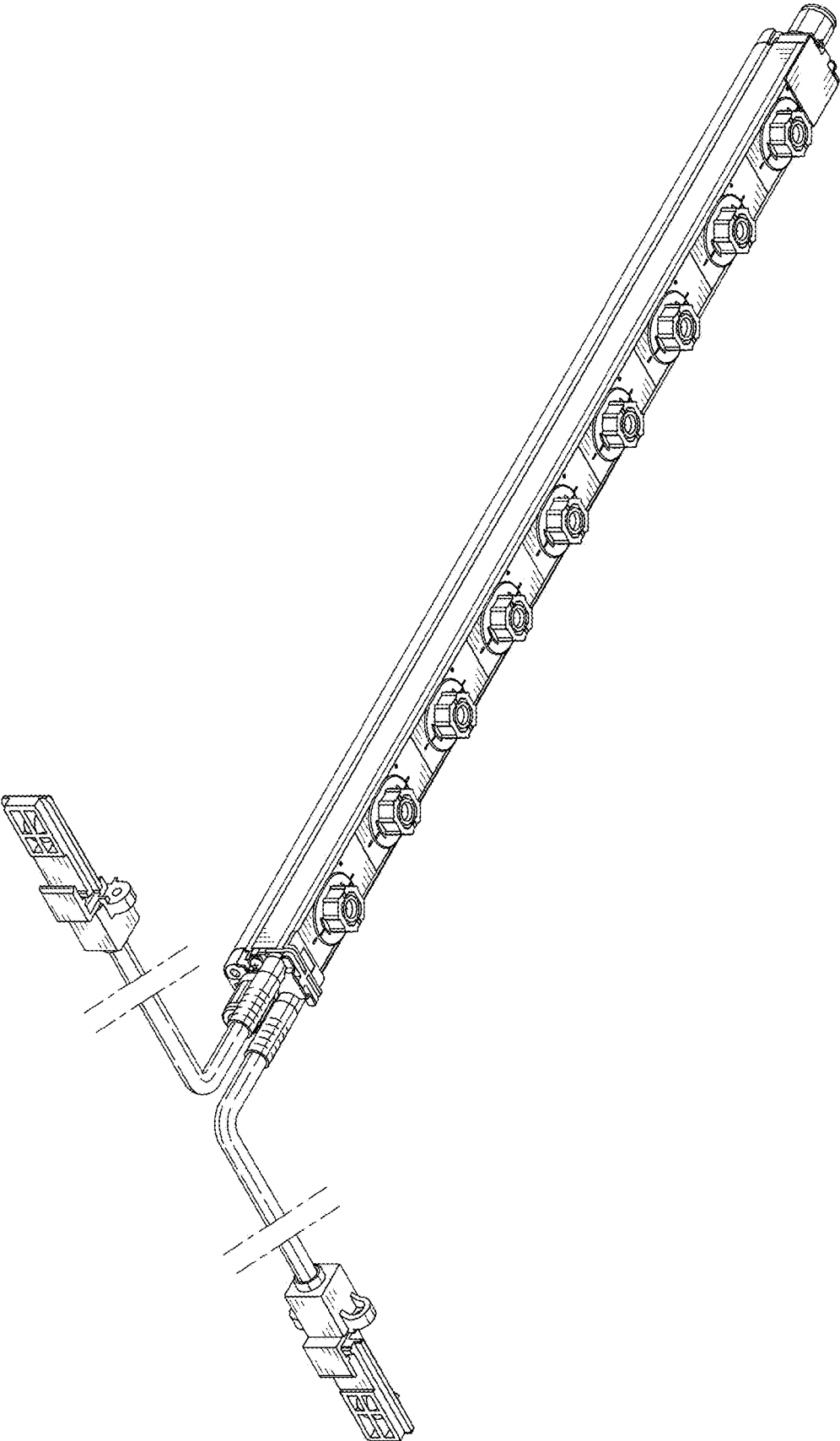


Fig. 94

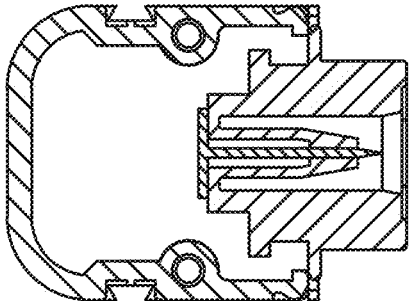


Fig. 95

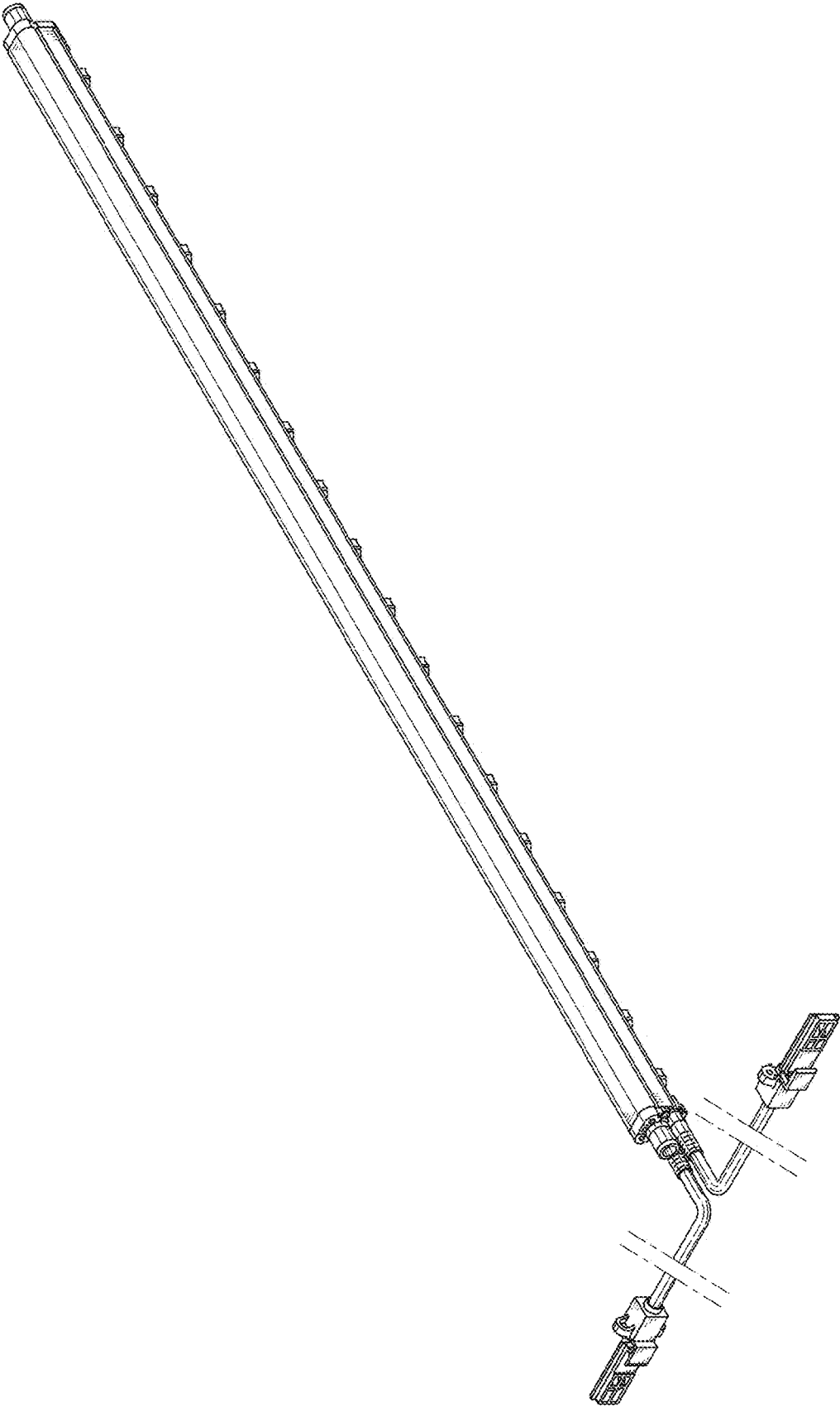


Fig. 96

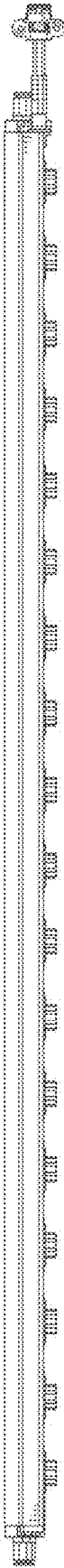


Fig. 97

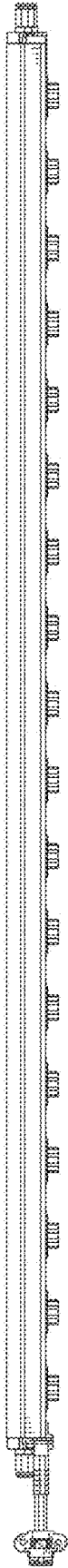


Fig. 98

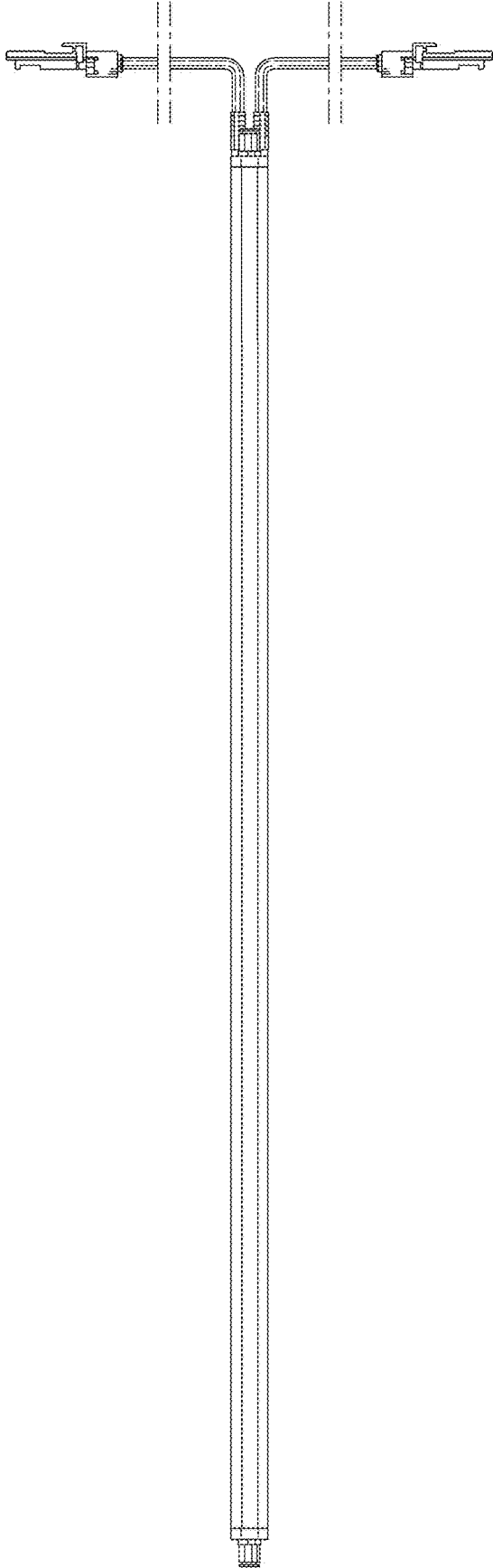


Fig. 99

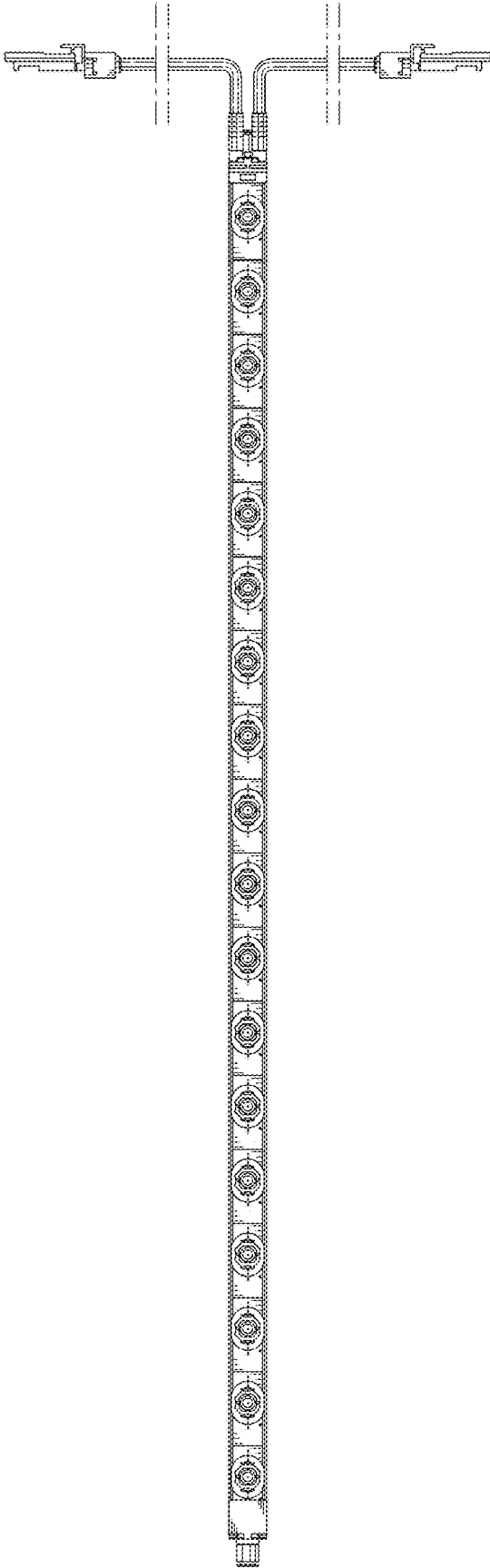


Fig. 100

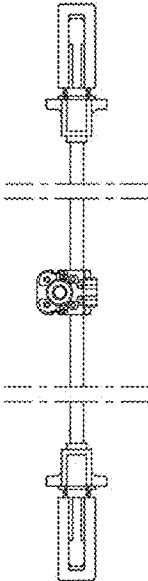


Fig. 101

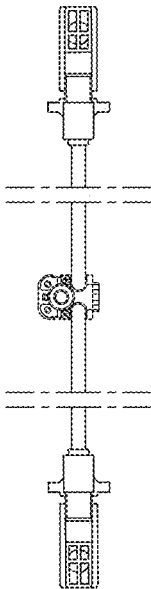


Fig. 102

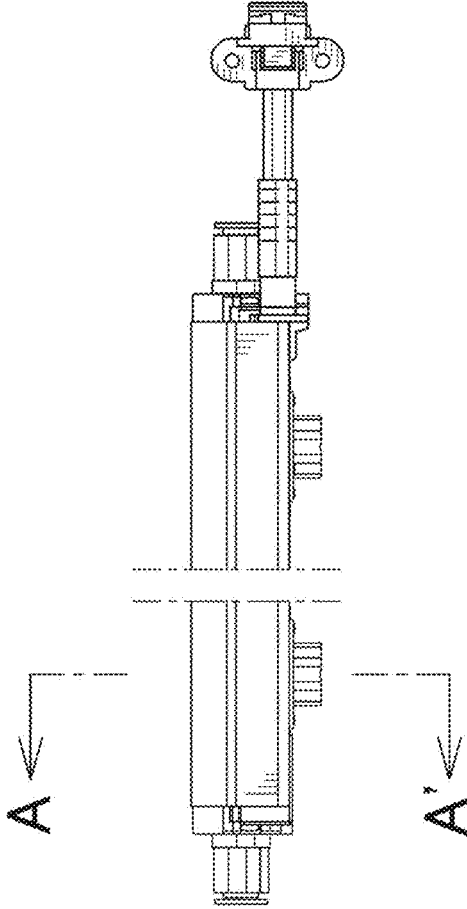


Fig. 103

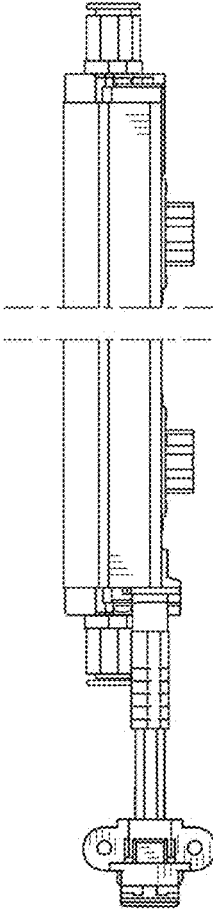


Fig. 104

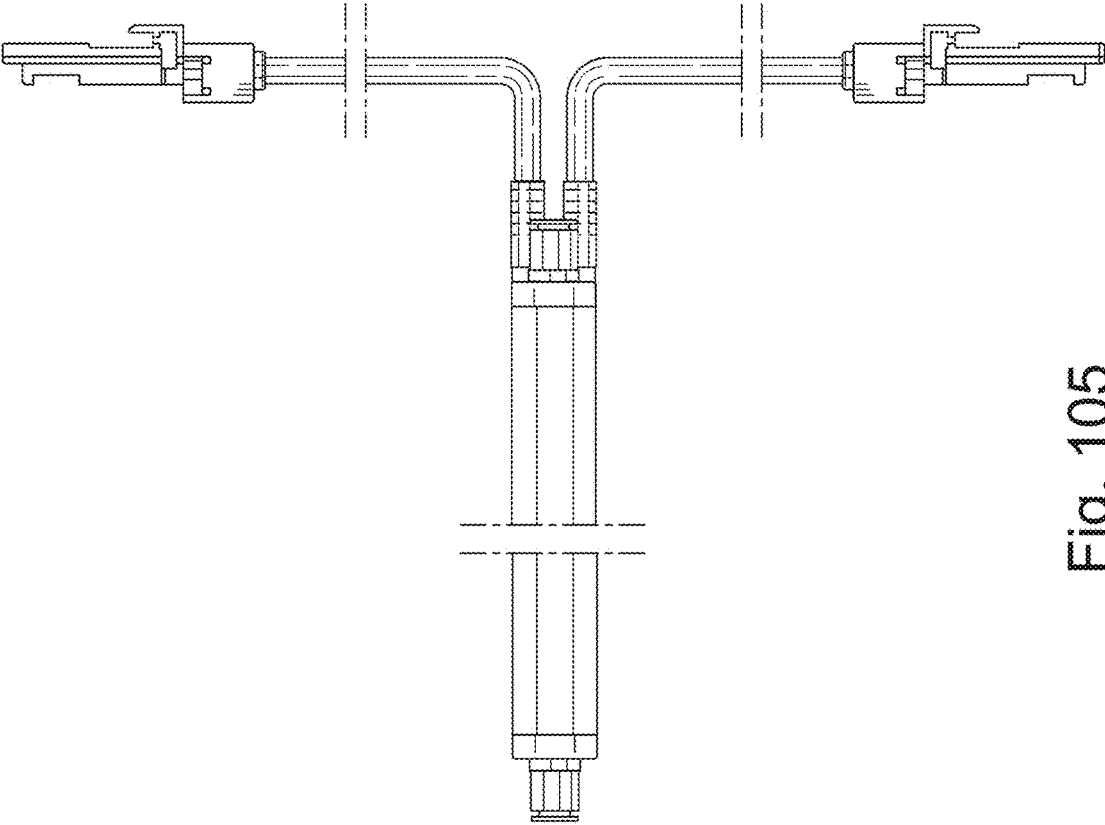


Fig. 105

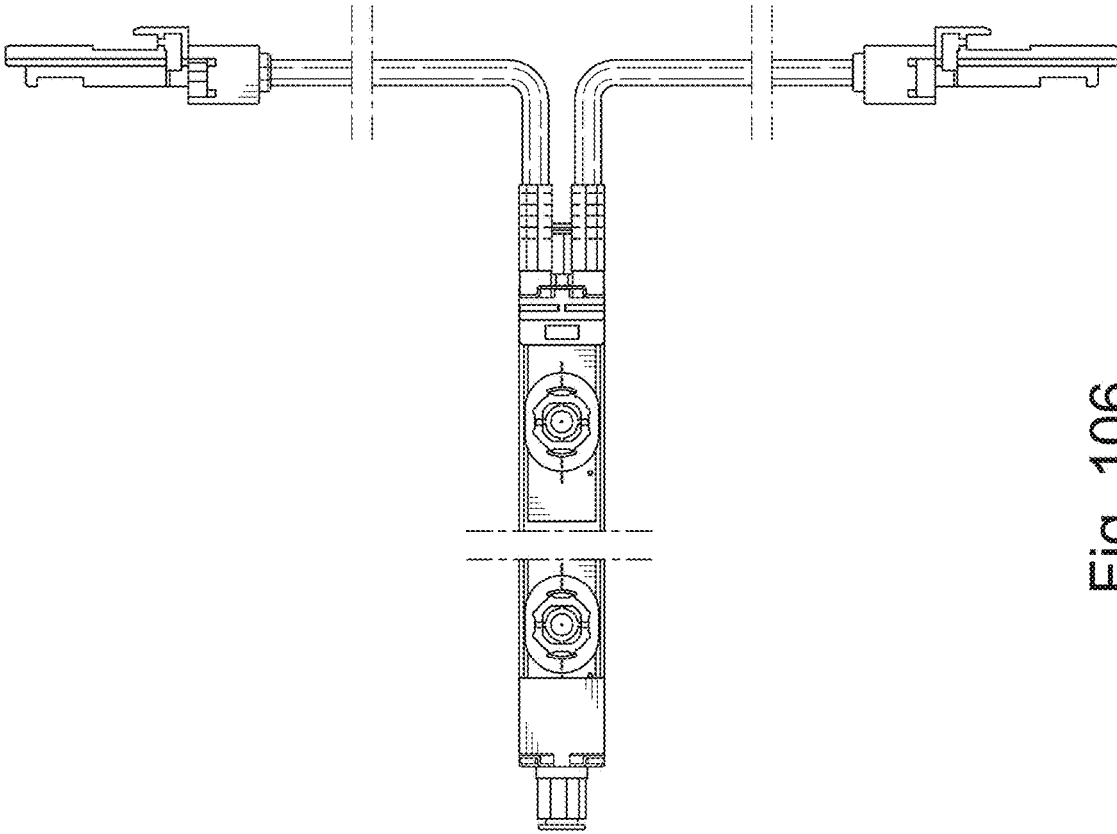


Fig. 106

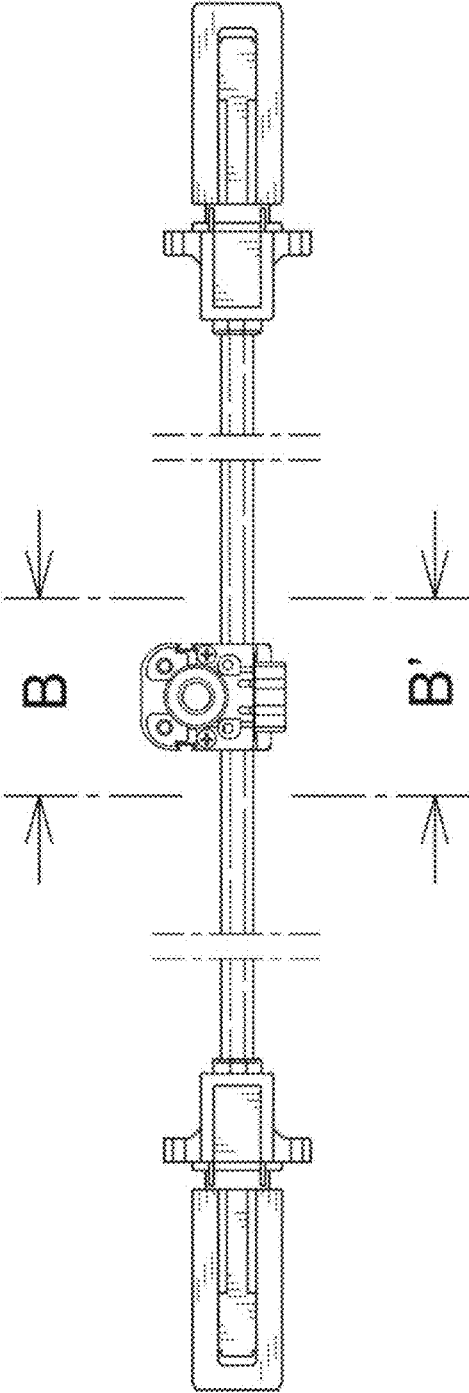


Fig. 107

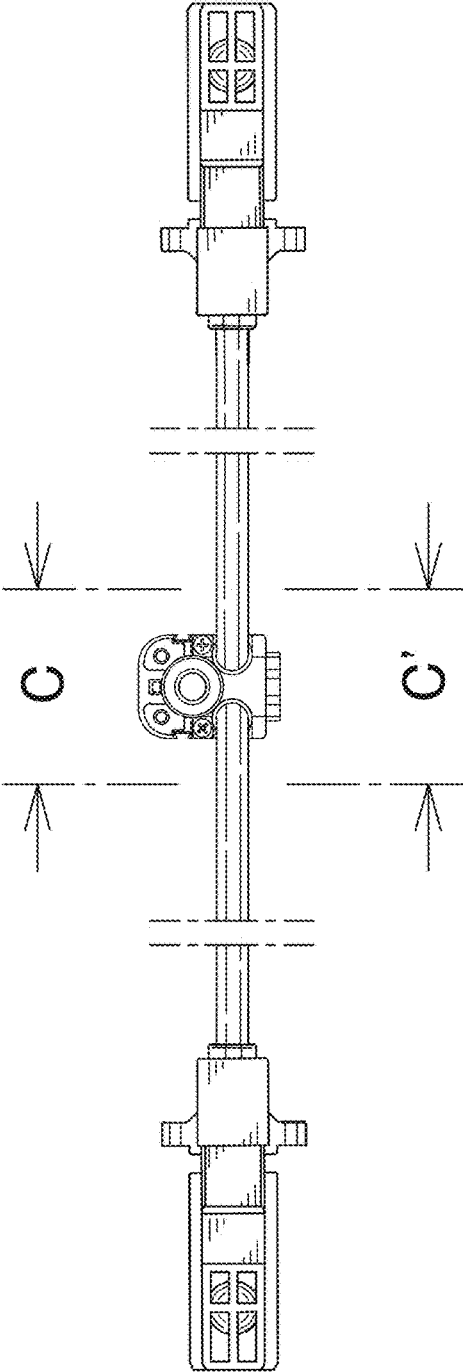


Fig. 108

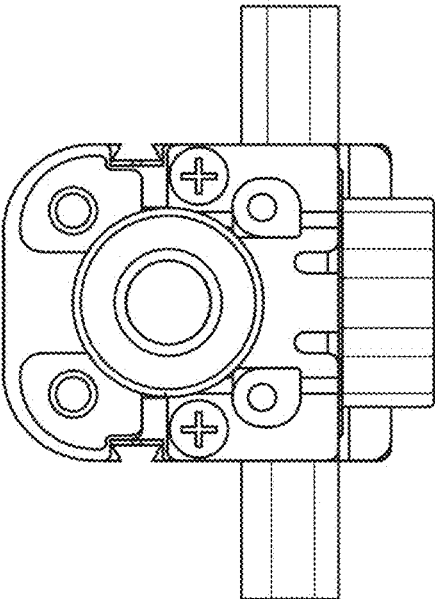


Fig. 109

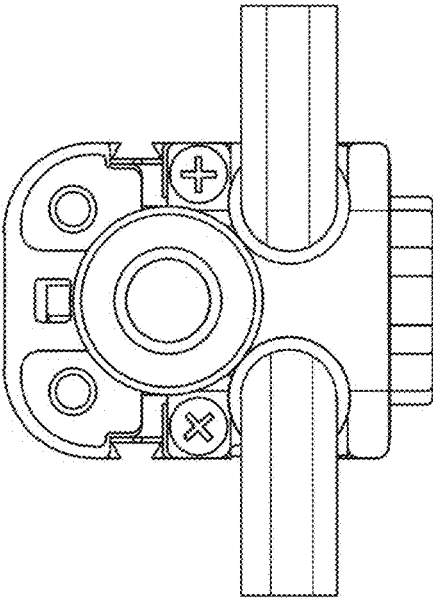


Fig. 110

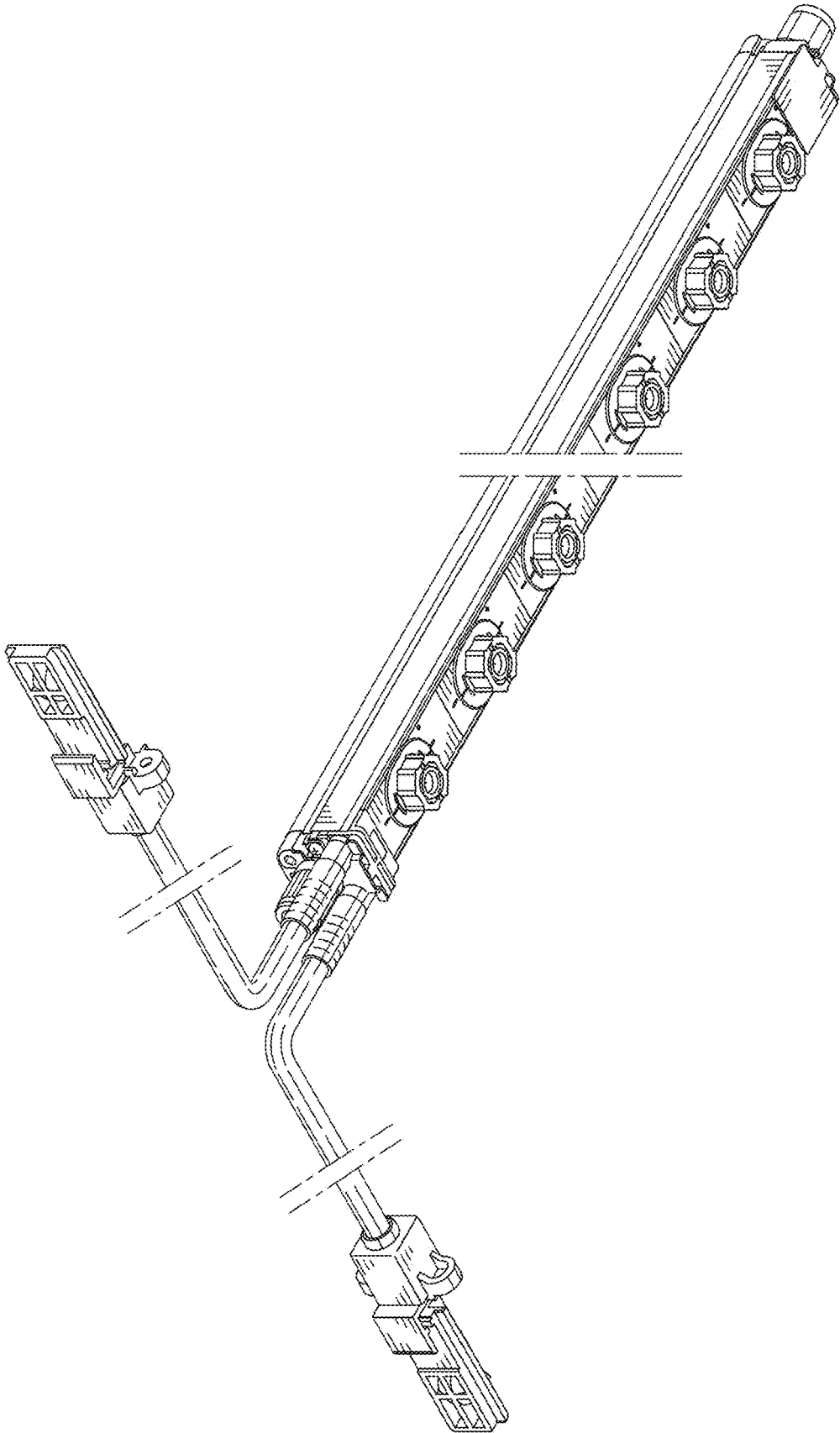


Fig. 111

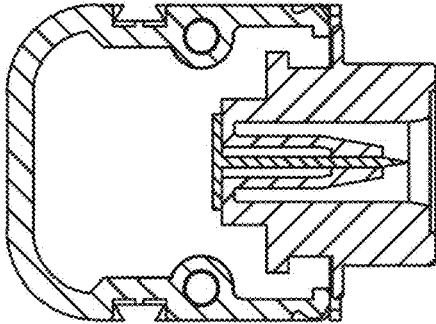


Fig. 112