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

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(54) **FUEL TANK ISOLATION VALVE**

FOREIGN PATENT DOCUMENTS

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EP 0713036 A1 5/1996
EP 2071217 A1 6/2009

(Continued)

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OTHER PUBLICATIONS

Yojiro Iriyama, Masahide Kobayashi, Takuji Matsubara< Yuusaku Nishimura, Ryosuke Nomura, and Takashi Ishikawa, "Design of a Fuel Vapor-containment System (FVS) to Meet Zero Evaporative Emissions Requirements in a Hybrid Electric Vehicle", SAE international, 2005-01-3825, 2005, pp. 1-8.

(Continued)

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Primary Examiner — Cynthia Ramirez

(**) Term: **14 Years**

(74) *Attorney, Agent, or Firm* — Mei & Mark LLP

(21) Appl. No.: **29/521,329**

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Related U.S. Application Data

(60) Division of application No. 29/486,900, filed on Apr. 3, 2014, now Pat. No. Des. 728,746, which is a division

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(51) **LOC (10) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D23/233**

(58) **Field of Classification Search**
USPC D23/233-237, 244-249; 192/87.13, 192/3.57, 87.18; 251/129.01, 137, 282, 251/324-325, 321, 355, 129.08, 129.07; 137/398, 545, 547, 549, 556.3, 553, 137/556.6, 625.65, 625.25
CPC F16K 31/22; F16K 31/60; F16K 31/1221; F16K 31/0613; F16K 47/08; F16K 37/0008; F16K 37/0058
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,192,346 A 3/1980 Iizumi
4,227,674 A 10/1980 Grant, Jr.

(Continued)

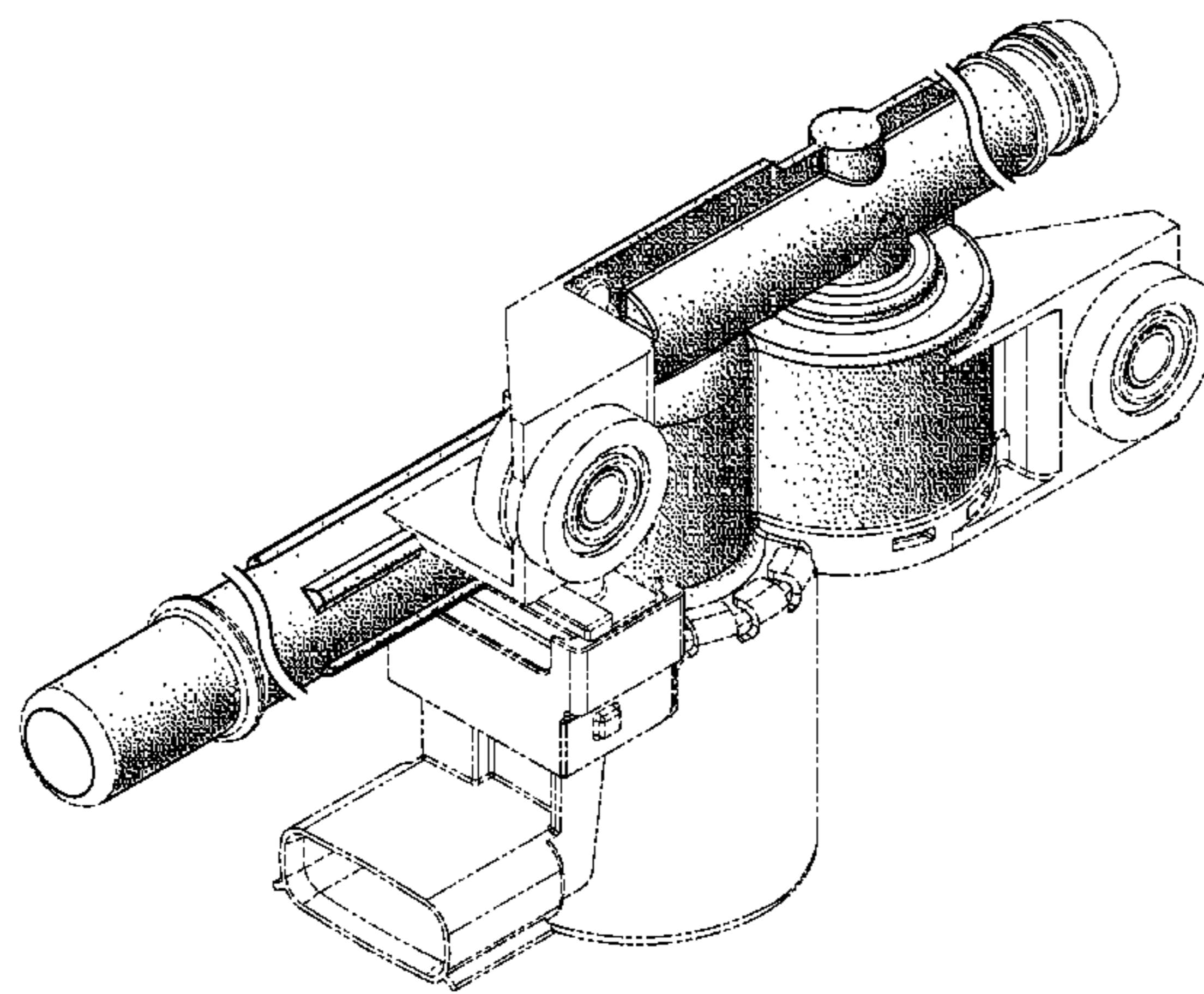
(57) **CLAIM**

The ornamental design for a fuel tank isolation valve, as shown and described herein.

DESCRIPTION

FIG. 1 is a side view of a fuel tank isolation valve in accordance with an aspect of the present teachings.
FIG. 2 is an opposite view of the fuel tank isolation valve of FIG. 1.
FIG. 3 is a top view of the fuel tank isolation valve of FIG. 1.
FIG. 4 is a bottom view of the fuel tank isolation valve of FIG. 1.
FIG. 5 is a front view of the fuel tank isolation valve of FIG. 1.
FIG. 6 is a rear view of the fuel tank isolation valve of FIG. 1.
FIG. 7 is a perspective view of the fuel tank isolation valve of FIG. 1; and,
FIG. 8 is another perspective view of the valve of FIG. 1.
The broken lines showing portions of the fuel tank isolation valve form no part of the claimed design.
The fuel tank isolation valve is shown with a symbolic break in its length. The appearance of any portion of the article between the break lines forms no part of the claimed design.

1 Claim, 6 Drawing Sheets



Related U.S. Application Data

of application No. 29/404,911, filed on Oct. 26, 2011, now Pat. No. Des. 706,389, which is a continuation-in-part of application No. 13/011,676, filed on Jan. 21, 2011, now Pat. No. 8,573,255, which is a continuation-in-part of application No. 12/749,924, filed on Mar. 30, 2010, now Pat. No. 8,584,704.

(56)

References Cited

U.S. PATENT DOCUMENTS

4,231,542	A	11/1980	Grenier
4,364,305	A	12/1982	Dalibout et al.
4,370,983	A	2/1983	Lichtenstein
4,685,156	A	8/1987	Brabazon
4,865,078	A	9/1989	Ensign
4,964,677	A	10/1990	Splinter
D314,229	S	1/1991	Nestich
5,048,790	A	9/1991	Wells
5,083,546	A	1/1992	Detweiler et al.
5,211,151	A	5/1993	Nakajima et al.
5,218,995	A	6/1993	Lee
5,406,975	A	4/1995	Nakamichi et al.
5,605,177	A	2/1997	Ohashi et al.
5,967,183	A	10/1999	Detweiler et al.
5,996,603	A	12/1999	Dupler
6,526,951	B2	3/2003	Ishigaki et al.
D502,762	S	3/2005	Kriegshauser
6,910,745	B2	6/2005	Inage
7,152,587	B2	12/2006	Suzuki
7,267,113	B2	9/2007	Tsuge et al.
7,270,310	B2	9/2007	Takakura
7,347,192	B2	3/2008	Perry et al.
7,422,193	B2	9/2008	Sisk et al.
7,448,367	B1	11/2008	Reddy et al.
D585,959	S	2/2009	Caron et al.
7,591,281	B2	9/2009	Tsuge
D621,003	S	8/2010	Gramegna et al.
7,828,265	B2	11/2010	Sisk et al.

D686,699	S	7/2013	Evans et al.
8,573,255	B2	11/2013	Pifer et al.
8,584,704	B2	11/2013	Pifer et al.
D706,389	S	6/2014	McLauchlan et al.
D706,390	S	6/2014	McLauchlan et al.
D728,746	S *	5/2015	McLauchlan et al. D23/233
D728,747	S	5/2015	McLauchlan et al.
2001/0017160	A1	8/2001	Ishigaki et al.
2005/0181647	A1	8/2005	Dehnen et al.
2005/0217734	A1	10/2005	Takakura
2006/0207663	A1	9/2006	Tsuge
2008/0042086	A1	2/2008	Sisk et al.
2010/0269921	A1	10/2010	Pifer et al.
2011/0240145	A1	10/2011	Pifer

FOREIGN PATENT DOCUMENTS

JP	S593071	U	1/1984
JP	H01173579	U	12/1989
JP	H04105959	U	9/1992
JP	H0669544	U	9/1994
JP	H0771335	A	3/1995
JP	2001099015	A	4/2001
JP	2006258135	A	9/2006
JP	2008513651	A	5/2008
WO	0190611	A2	11/2001
WO	2006029537		3/2006

OTHER PUBLICATIONS

International Search Report and Written Opinion dated Jul. 6, 2012 for PCT application No. PCT/US2012/021876 filed Jan. 19, 2012, pp. 1-12.
 International Search Report and Written Opinion issued in Application No. PCT/IB2012/000079. Date of Mailing: Jul. 26, 2012, pp. 1-13.
 U.S. Appl. Inc. 29/521,331, filed Mar. 23, 2015, to McLauchlan et al., preliminary amendment, replacement drawing sheets, and application body as-filed.

* cited by examiner

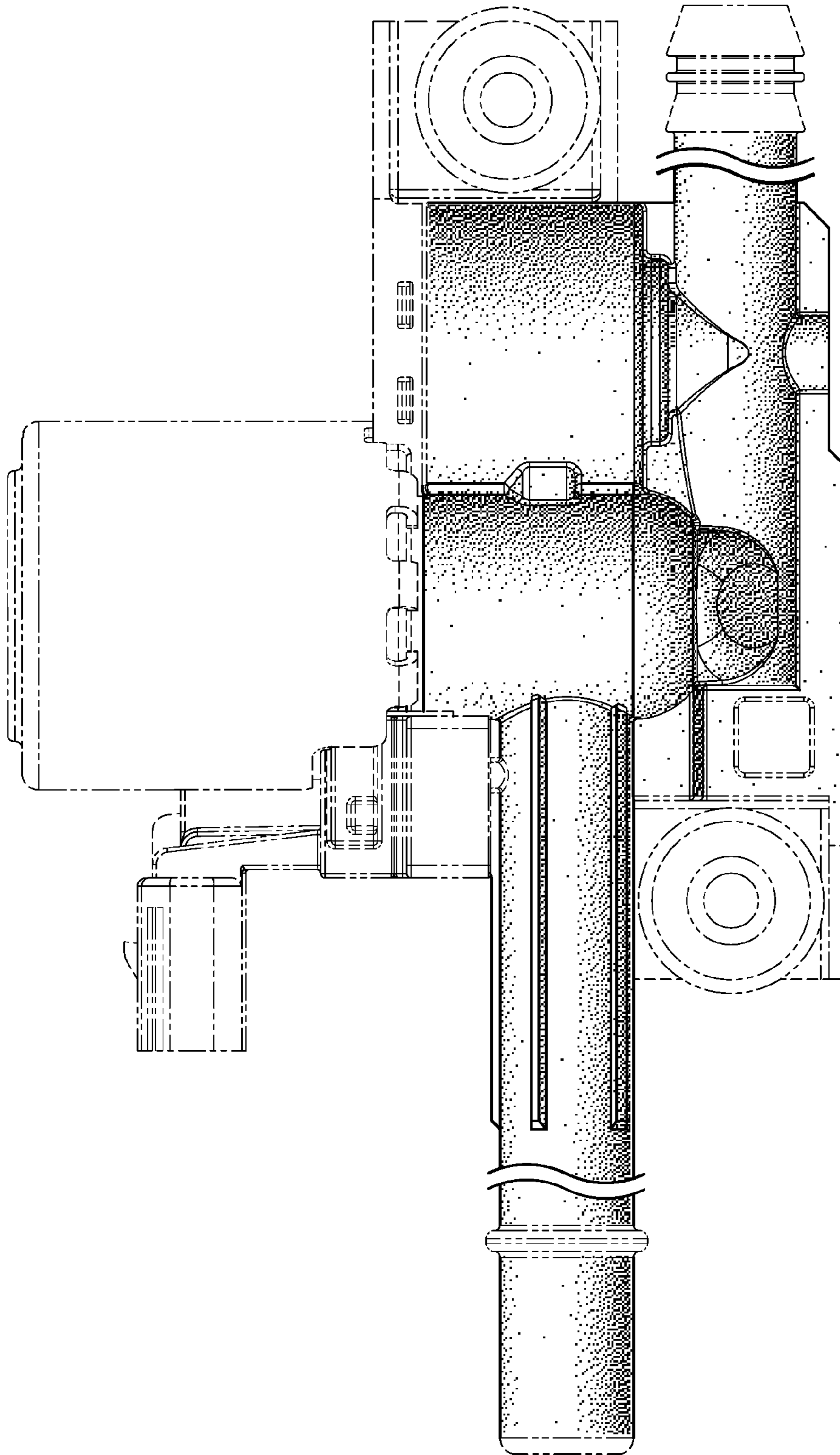


FIG. 1

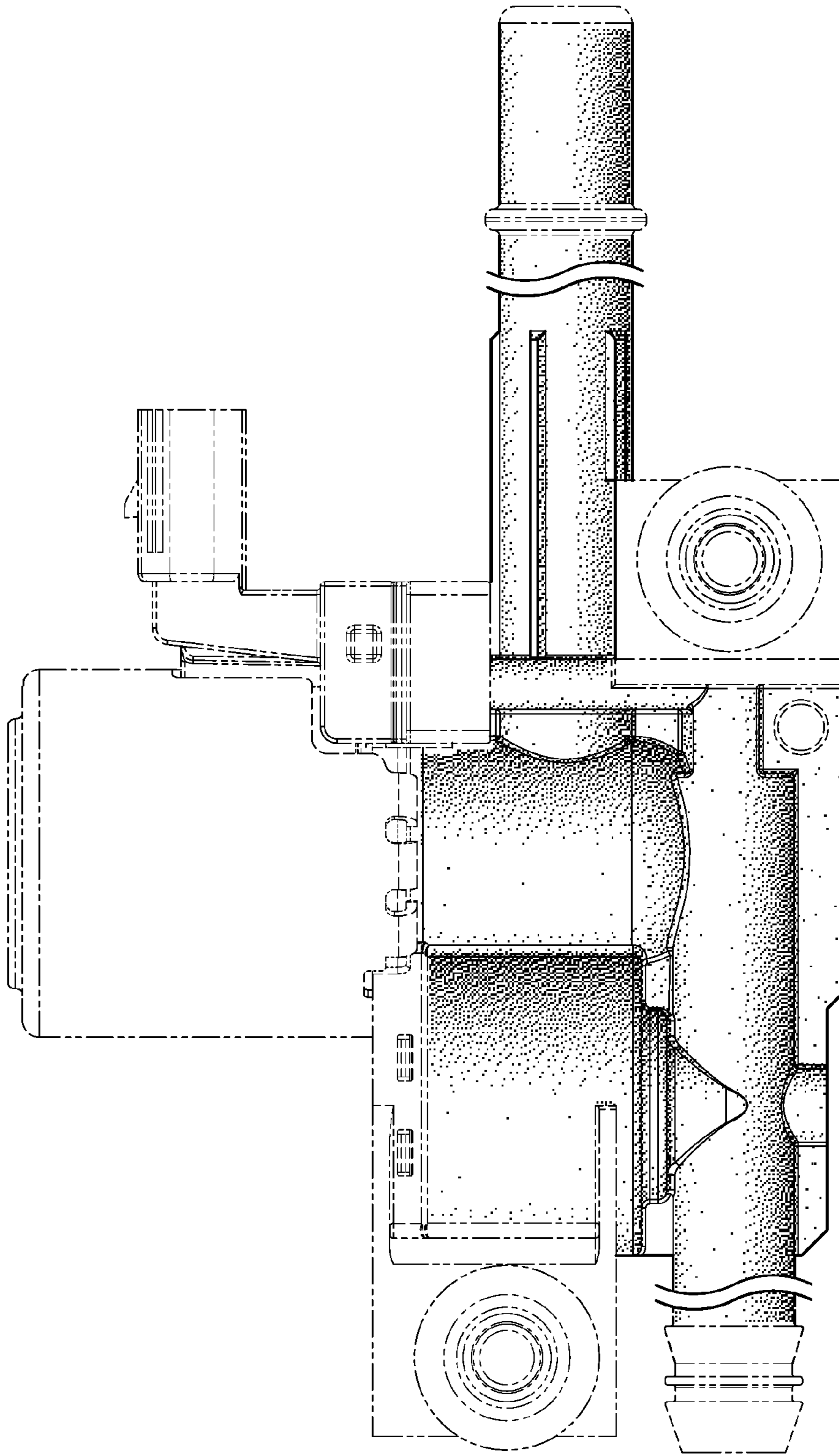


FIG. 2

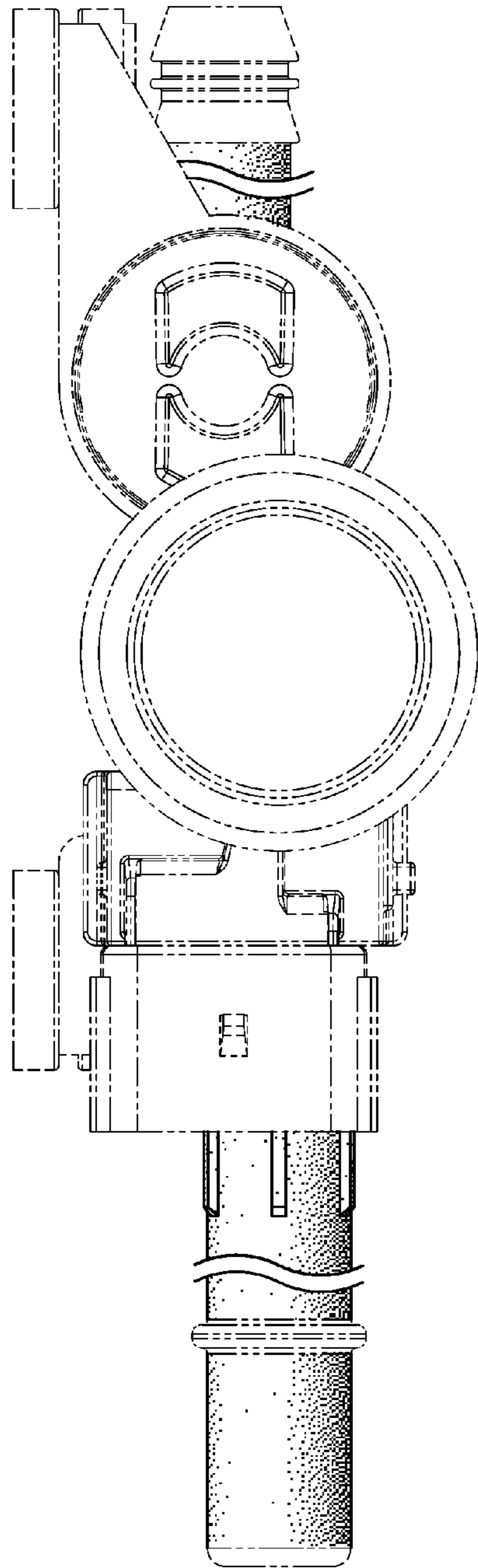


FIG. 3

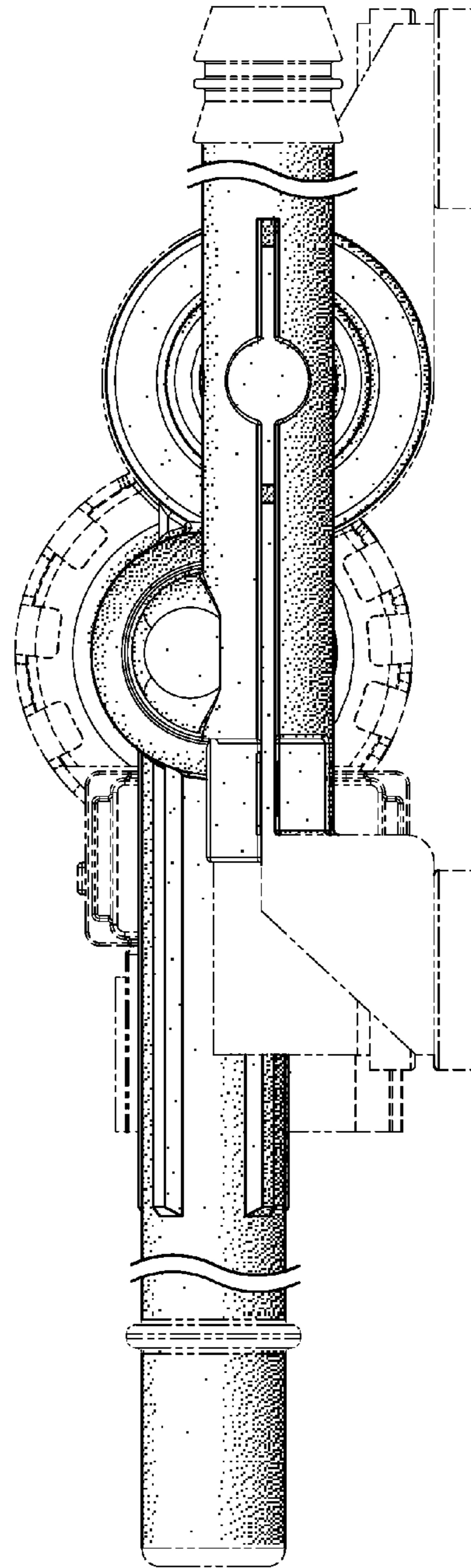


FIG. 4

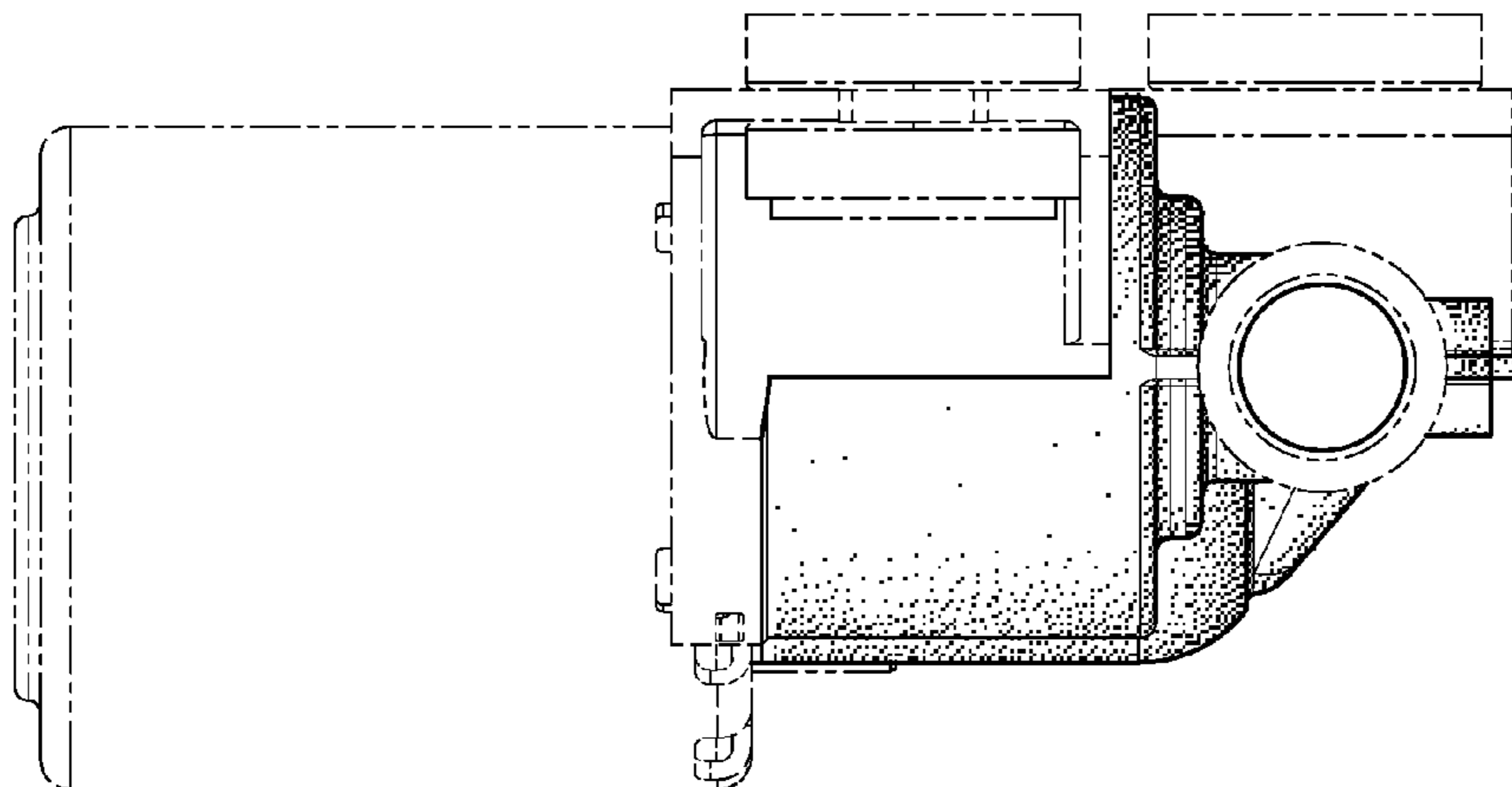


FIG. 6

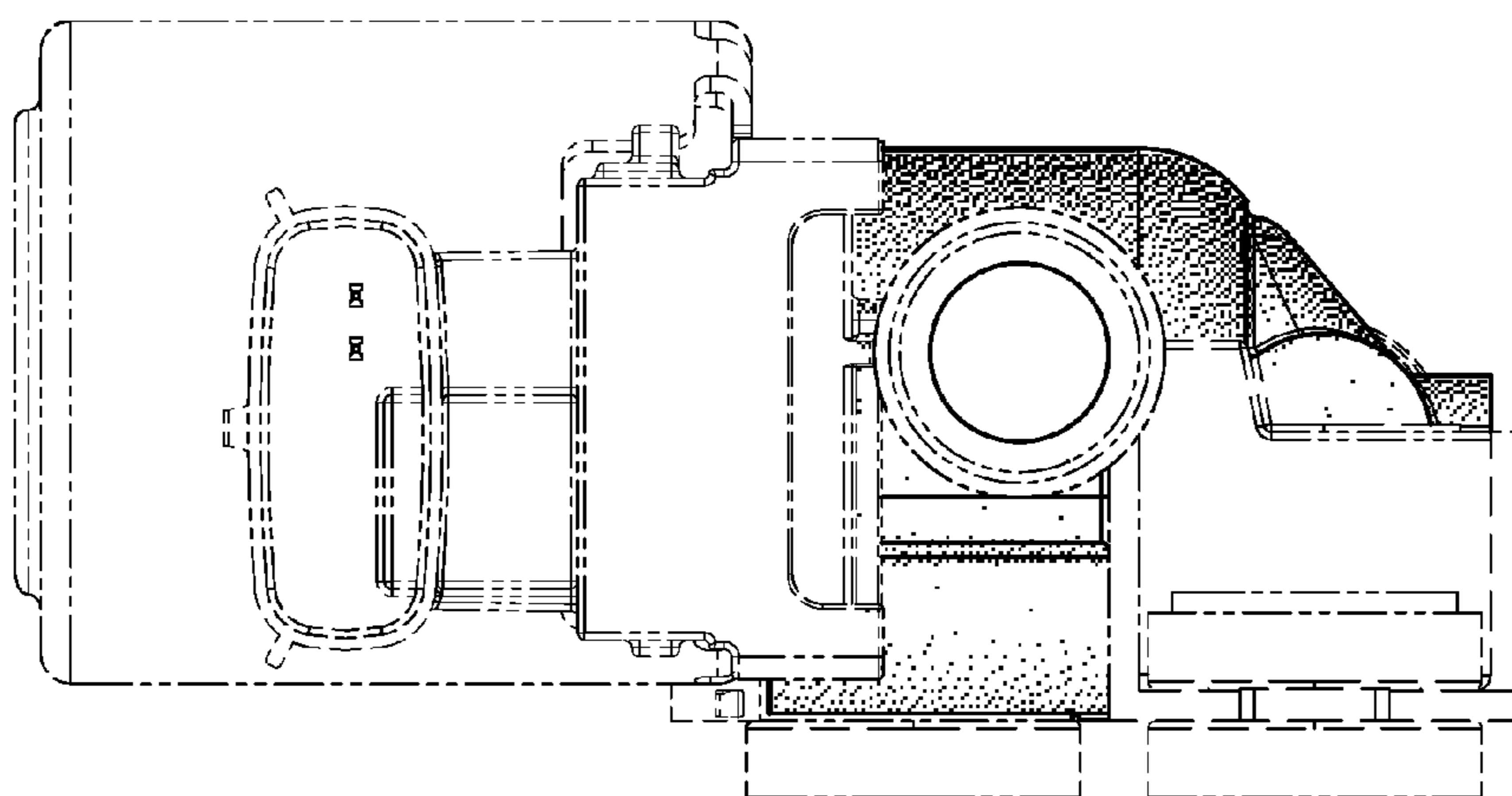


FIG. 5

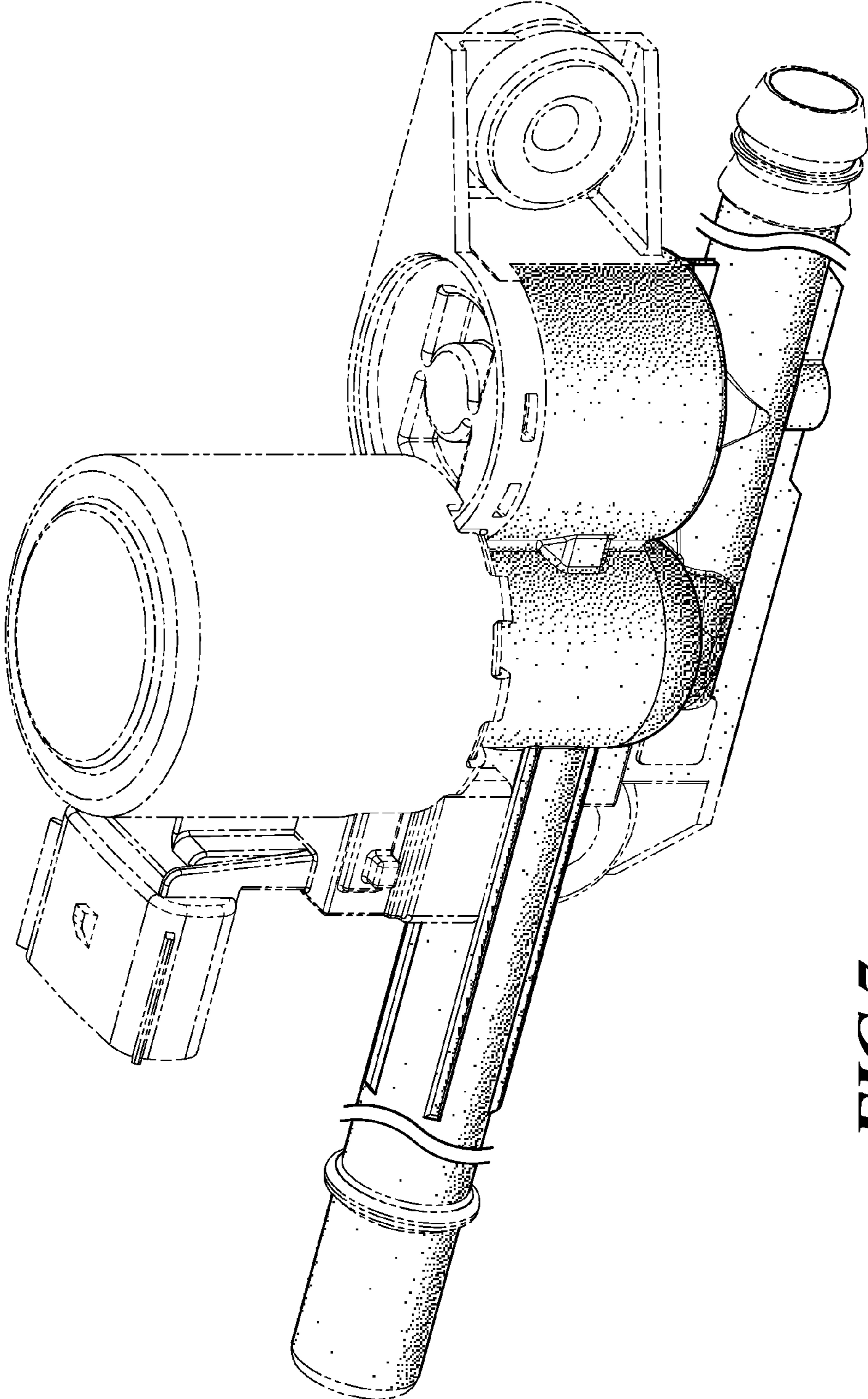


FIG. 7

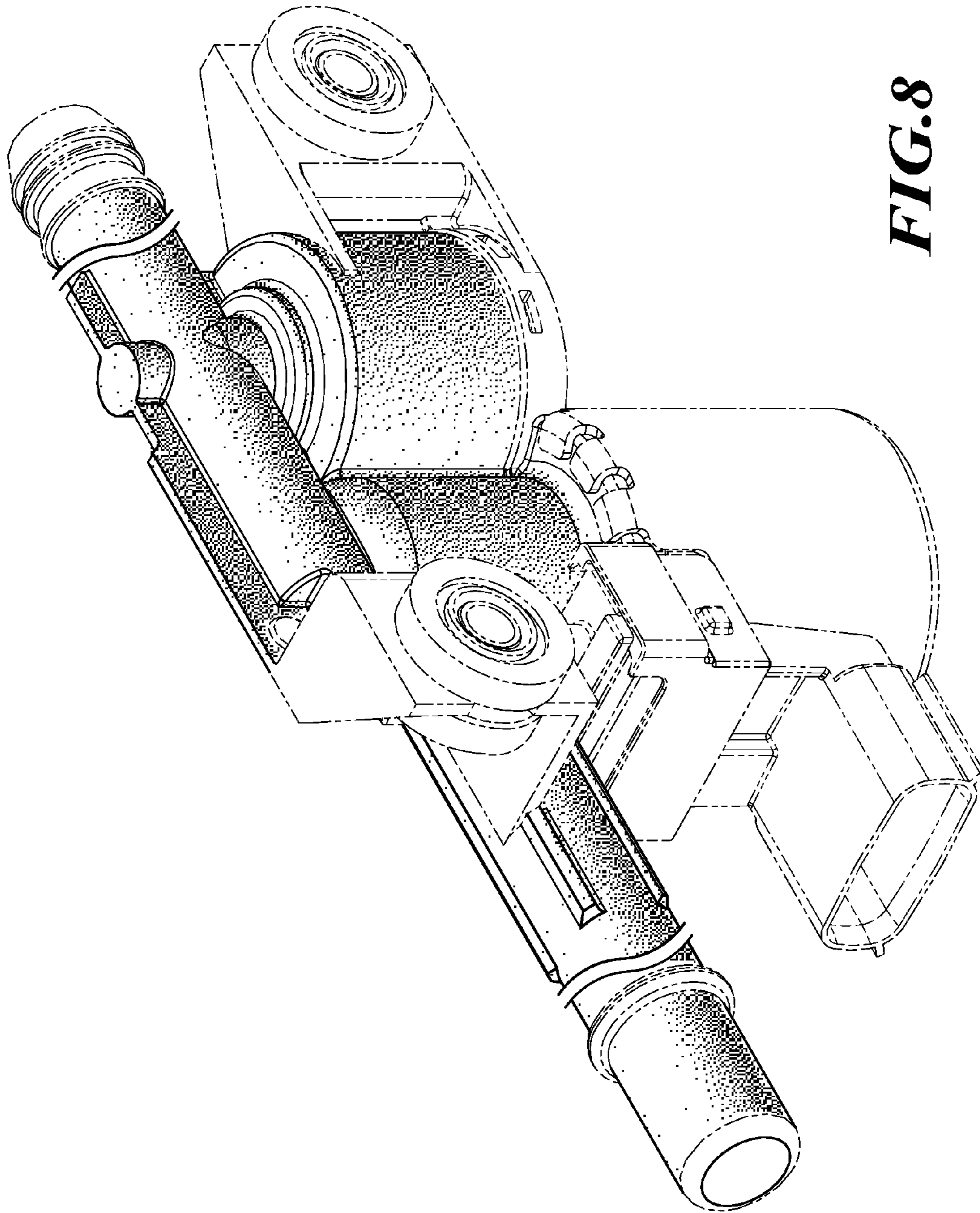


FIG. 8