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Ellisor et al.

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(54) **FLUID END FOR A PUMPING SYSTEM**

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(52) **U.S. Cl.**
USPC **D15/21**; D15/7

(58) **Field of Classification Search**
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D23/235; D10/121; D12/218
CPC ... B29C 44/1271; B29C 44/086; B60T 17/04;
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13/0817; F15B 13/0821; F15B 13/0839;
F15B 13/0896; F16K 27/003; F16K
37/00; F04B 47/00; F04B 41/06; F04B
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53/02; E21B 44/06

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D687,125 S * 7/2013 Hawes D23/233
10,465,680 B1 * 11/2019 Guerra F04B 53/162
D916,240 S * 4/2021 Nowell D23/233
2006/0002806 A1 * 1/2006 Baxter F04B 39/10
417/539

2011/0142701 A1 * 6/2011 Small F04B 53/16
417/521
2014/0260954 A1 * 9/2014 Young E21B 43/26
92/169.4
2015/0147194 A1 * 5/2015 Foote F04B 53/16
417/53
2017/0218993 A1 * 8/2017 Freed F04B 19/22
2018/0202434 A1 * 7/2018 Barnhouse, Jr. F04B 19/22
2018/0354081 A1 * 12/2018 Kalyani F04B 39/123
2019/0011051 A1 * 1/2019 Yeung F04B 53/10
2019/0032685 A1 * 1/2019 Foster F04B 1/053

(Continued)

OTHER PUBLICATIONS

Covert Manufacturing, Inc., "Fluid End Block: Covert Manufacturing", (site visited Jul. 30, 2021), covertmfg.com, URL:<<http://www.covertmfg.com/our-capabilities/fluid-end-block/>> (Year: 2021).*

(Continued)

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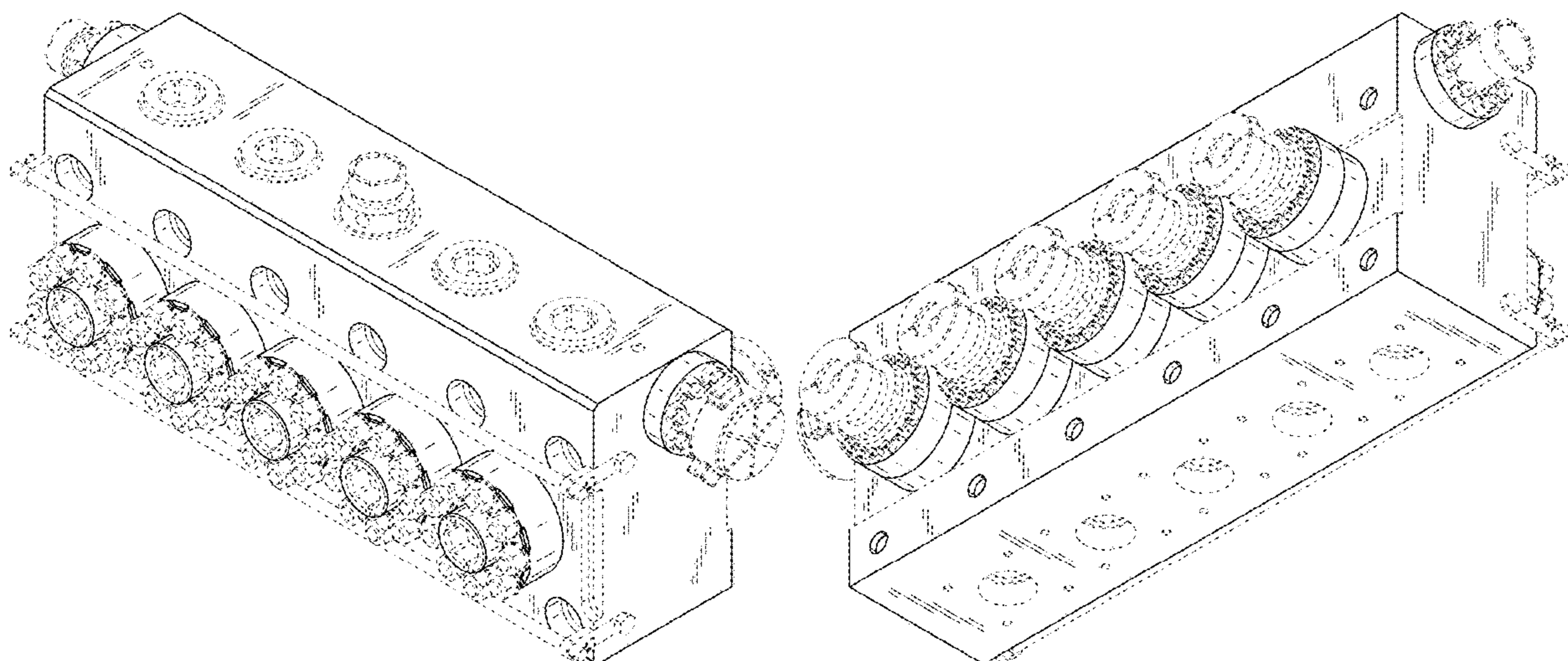
(57) **CLAIM**

The ornamental design for a fluid end for a pumping system, substantially as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a fluid end; FIG. 2 is a back perspective view of the fluid end; FIG. 3 is a front view of the fluid end; FIG. 4 is a back view of the fluid end; FIG. 5 is a left side view of the fluid end; FIG. 6 is a right side view of the fluid end; FIG. 7 is a top view of the fluid end; and, FIG. 8 is a bottom view of the fluid end. The broken lines in the drawings depict portions of the fluid end for a pumping system that form no part of the claim.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2019/0072089 A1* 3/2019 Buckley F04B 1/0461
2019/0136842 A1* 5/2019 Nowell F04B 53/16
2019/0145400 A1* 5/2019 Graham F04B 1/0538
417/53
2019/0154033 A1* 5/2019 Brooks F04B 53/1087
2019/0242373 A1* 8/2019 Wernig F04B 53/16
2021/0010470 A1* 1/2021 Blume F04B 1/0452
2021/0040836 A1* 2/2021 Baskin E21B 4/003
2021/0215154 A1* 7/2021 Nowell F04B 1/0408

OTHER PUBLICATIONS

Kerr Pumps, "the most advanced fluid ends", (site visited Aug. 5, 2021), Kerrpumps.com, URL:<<http://kerrpumps.com/fluidends>> (Year: 2021).*

Shandong Baorun, 2250 Triplex Plunger Pump Fluid End Exchangeable with Spm, (site visited Aug. 5, 2021), made-in -china.com, URL:<<https://sdbaorun.en.made-in-china.com/product/wNixlDXyrshL/China-2250-Triplex-Plunger-Pump-Fluid-End-Exchangeable-with-Spm.html>> (Year: 2021).*

* cited by examiner

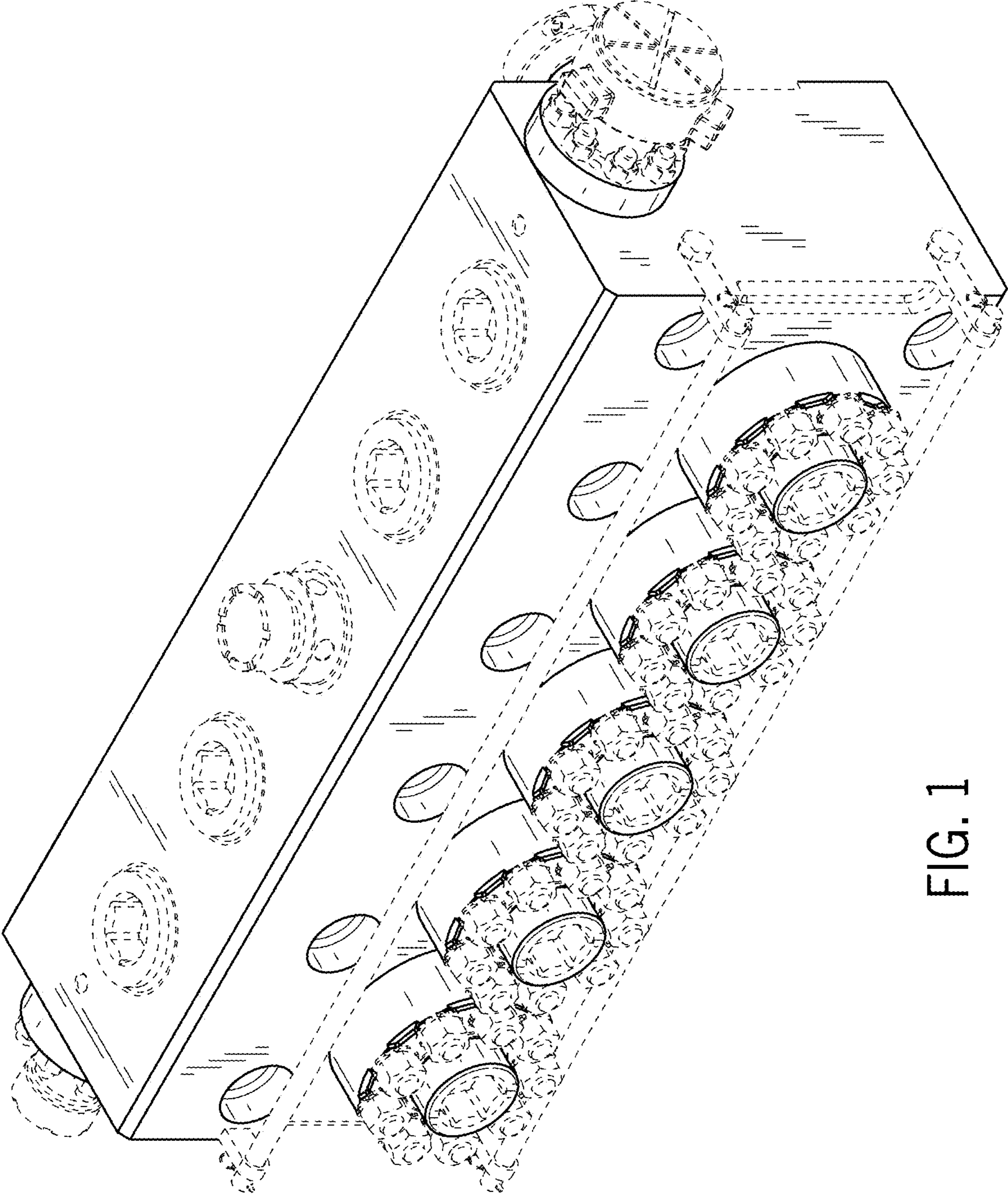


FIG. 1

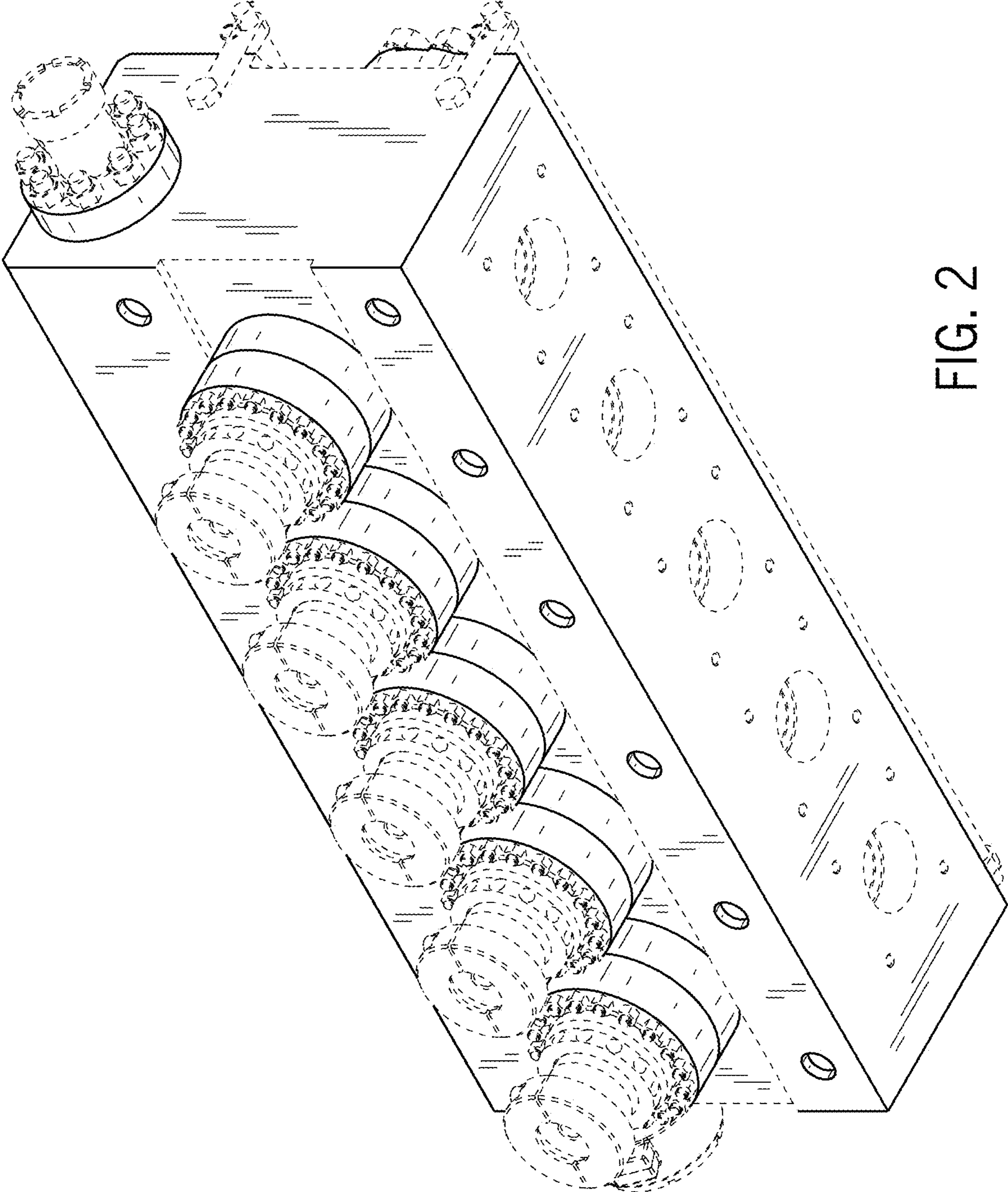


FIG. 2

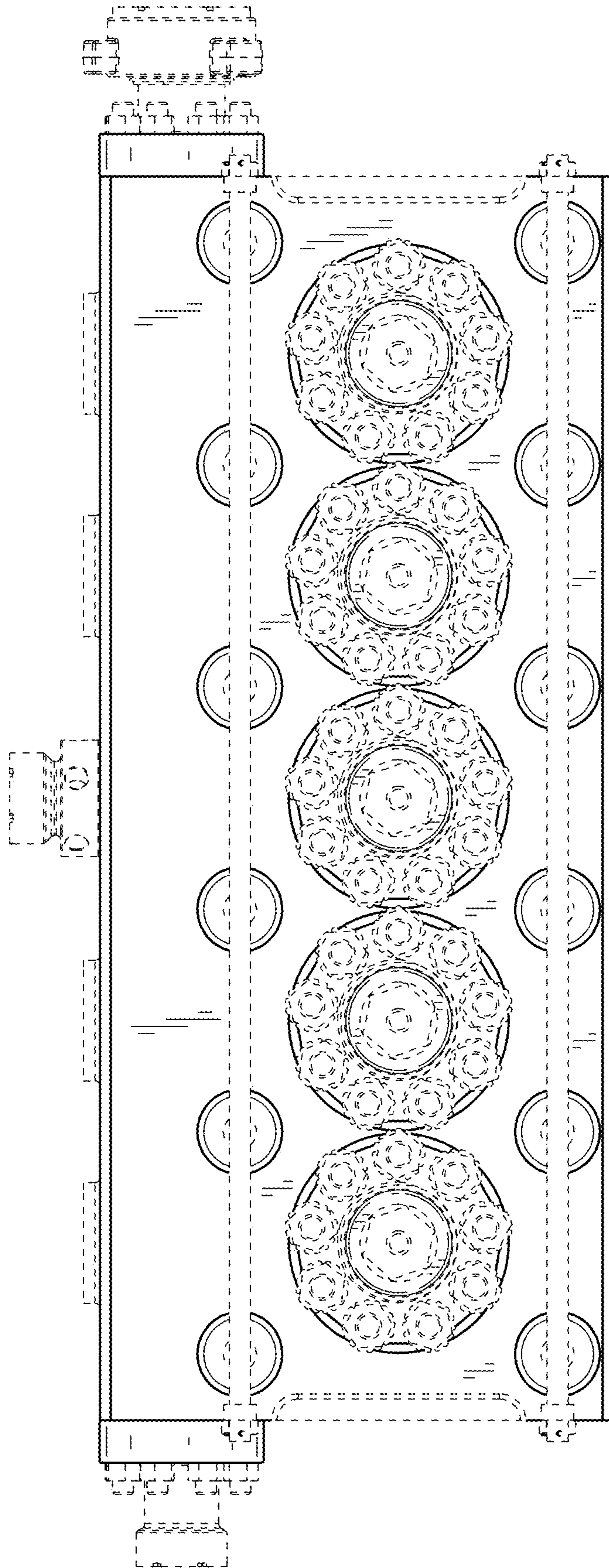


FIG. 3

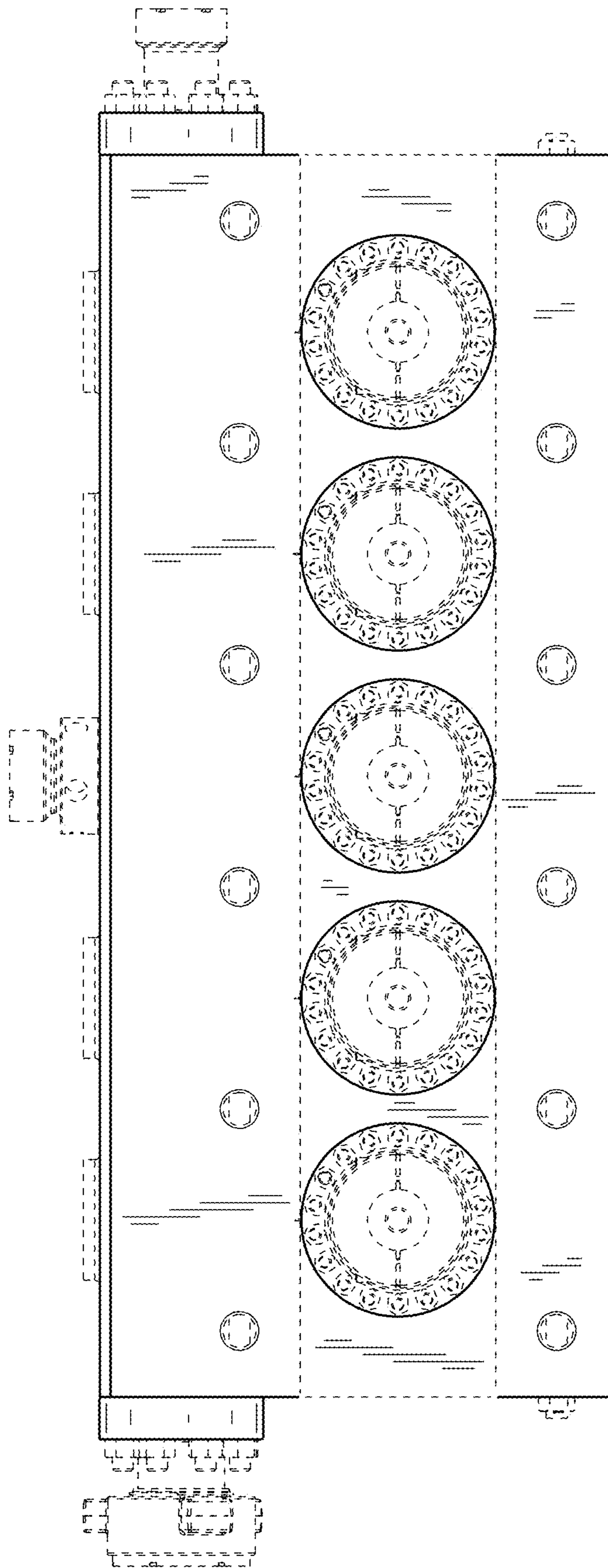


FIG. 4

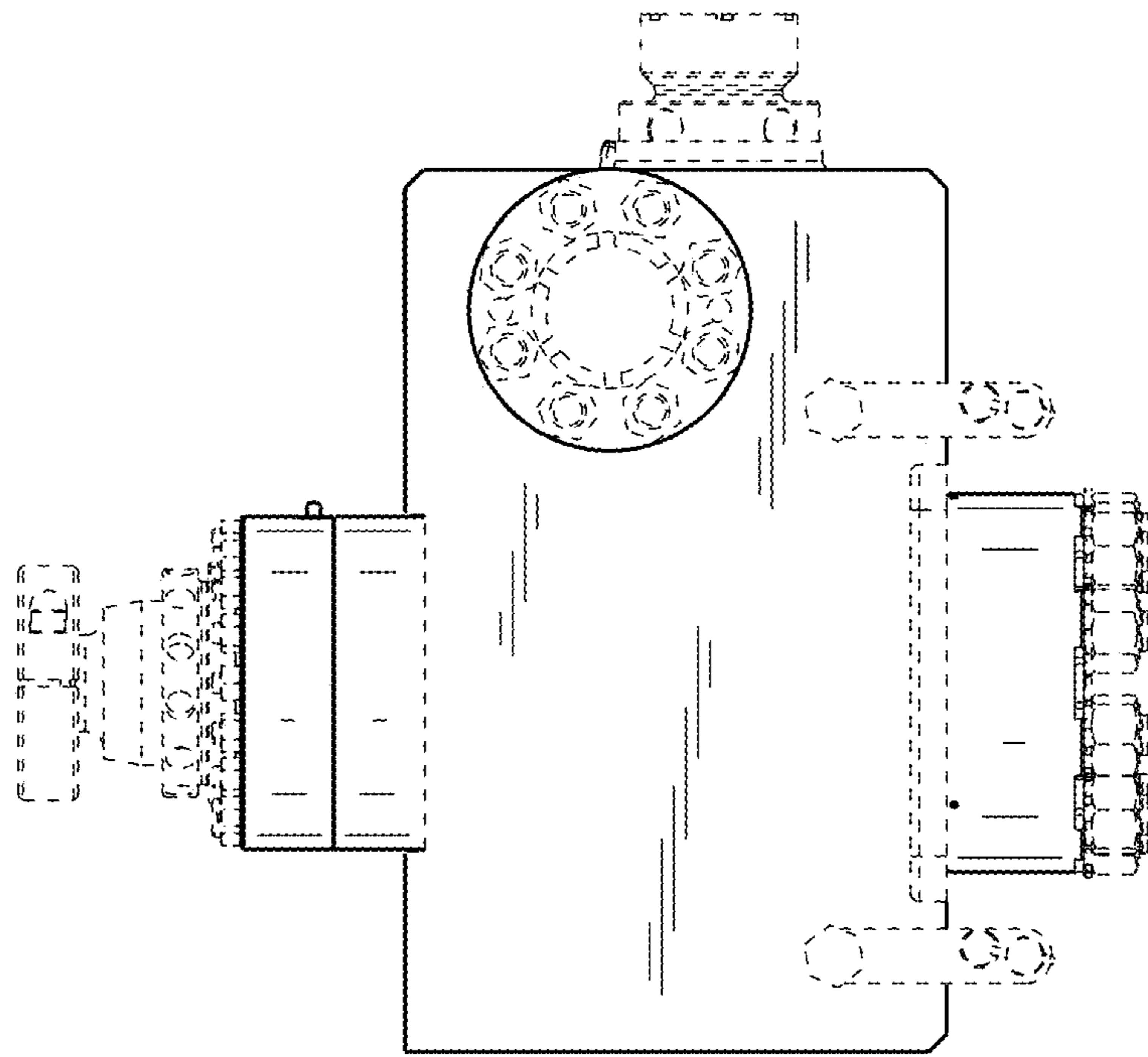


FIG. 5

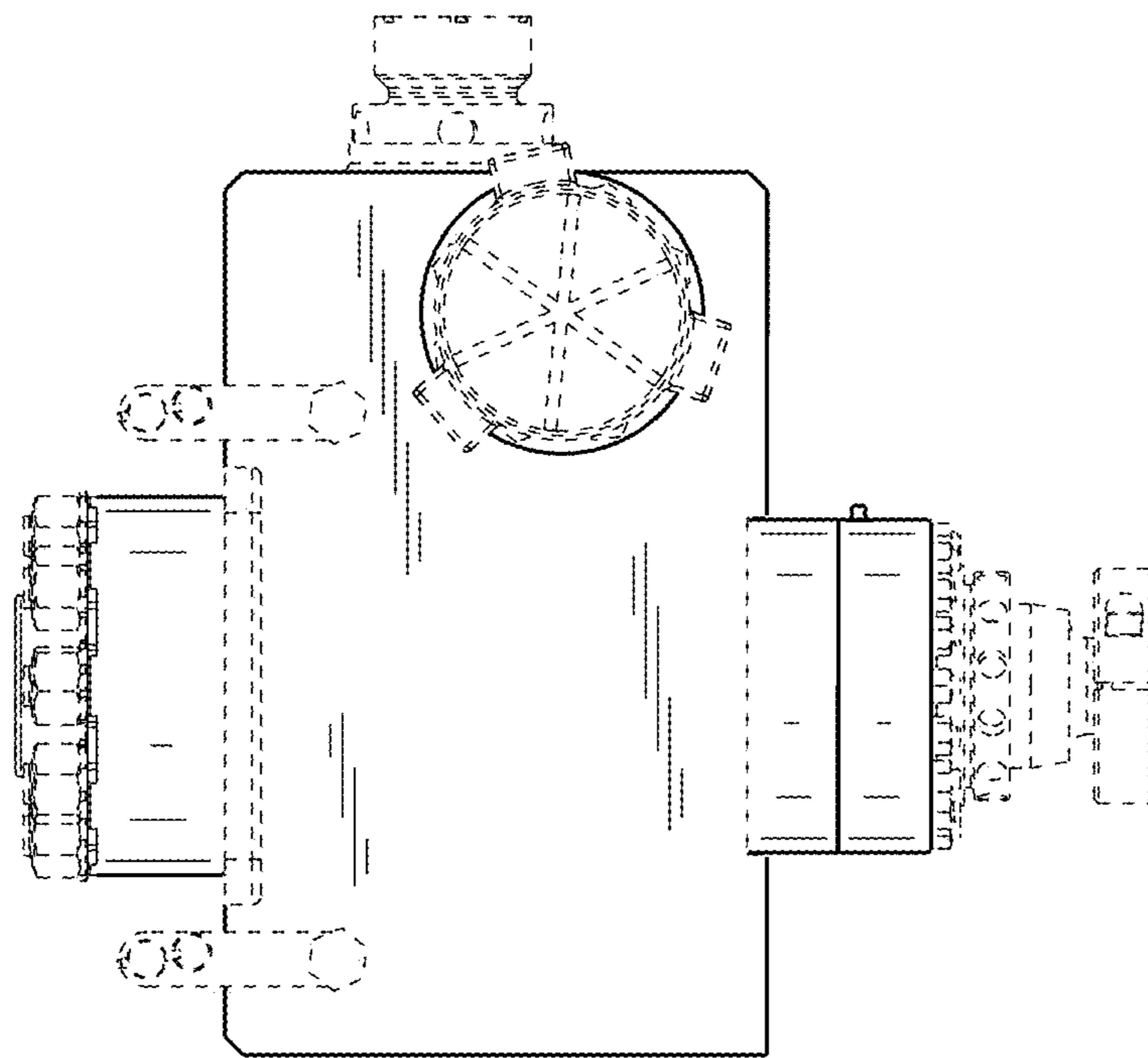


FIG. 6

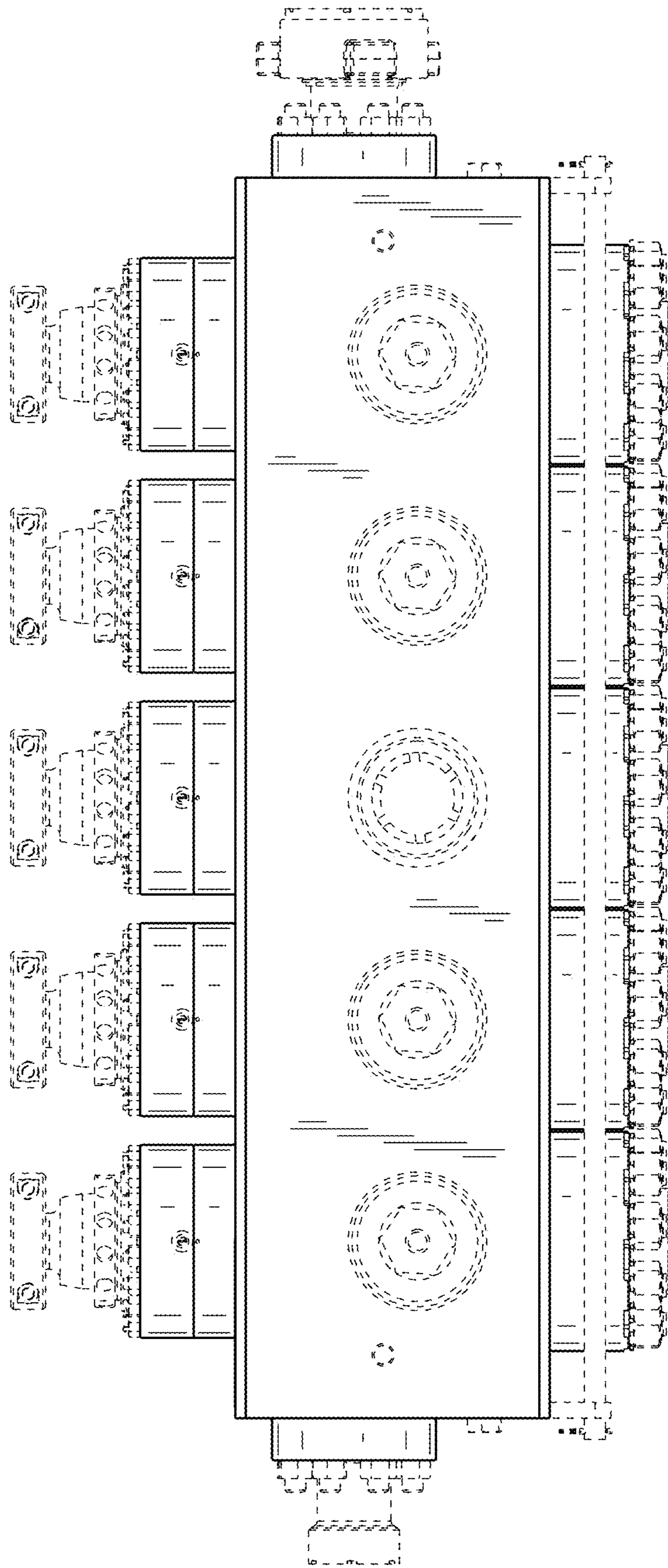


FIG. 7

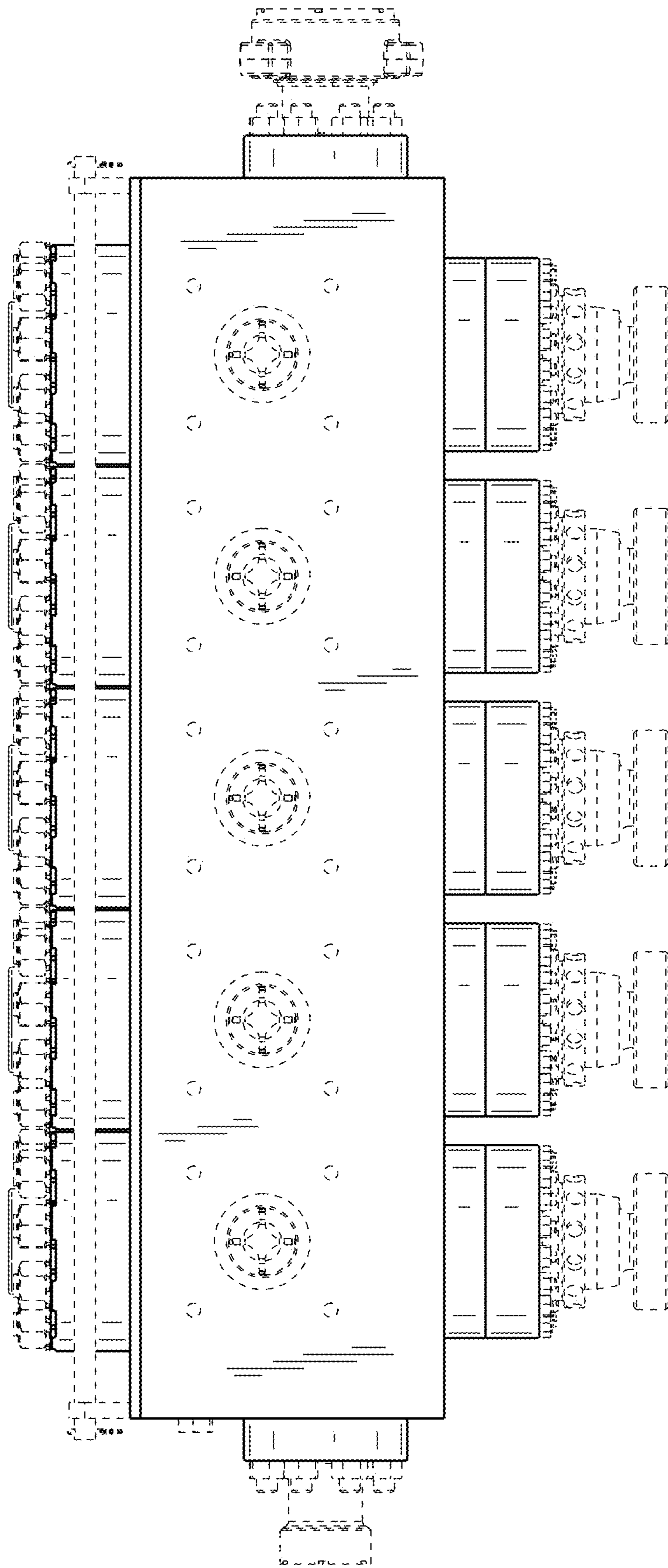


FIG. 8