



US00D803283S

(12) **United States Design Patent** (10) **Patent No.:** **US D803,283 S**
Rashkovsky et al. (45) **Date of Patent:** **** Nov. 21, 2017**

(54) **WAFER HANDLING ASSEMBLY**
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(73) Assignee: **Veeco Instruments Inc.**, Plainview, NY (US)
(**) Term: **15 Years**
(21) Appl. No.: **29/564,740**
(22) Filed: **May 16, 2016**
(51) **LOC (10) Cl.** **15-09**
(52) **U.S. Cl.**
USPC **D15/138**
(58) **Field of Classification Search**
USPC D3/315; D13/182; D15/138
(Continued)

(56) **References Cited**
U.S. PATENT DOCUMENTS
4,029,351 A 6/1977 Apgar et al.
5,643,366 A 7/1997 Somekh et al.
(Continued)

FOREIGN PATENT DOCUMENTS
JP 2012099755 A 5/2012
WO 2016001863 A1 1/2016
Primary Examiner — Patricia A Palasik
(74) *Attorney, Agent, or Firm* — Holzer Patel Drennan

(57) **CLAIM**
The ornamental design for a wafer handling assembly, as shown and described.

DESCRIPTION

FIG. 1 is a top perspective view of a first embodiment of a wafer handling assembly.

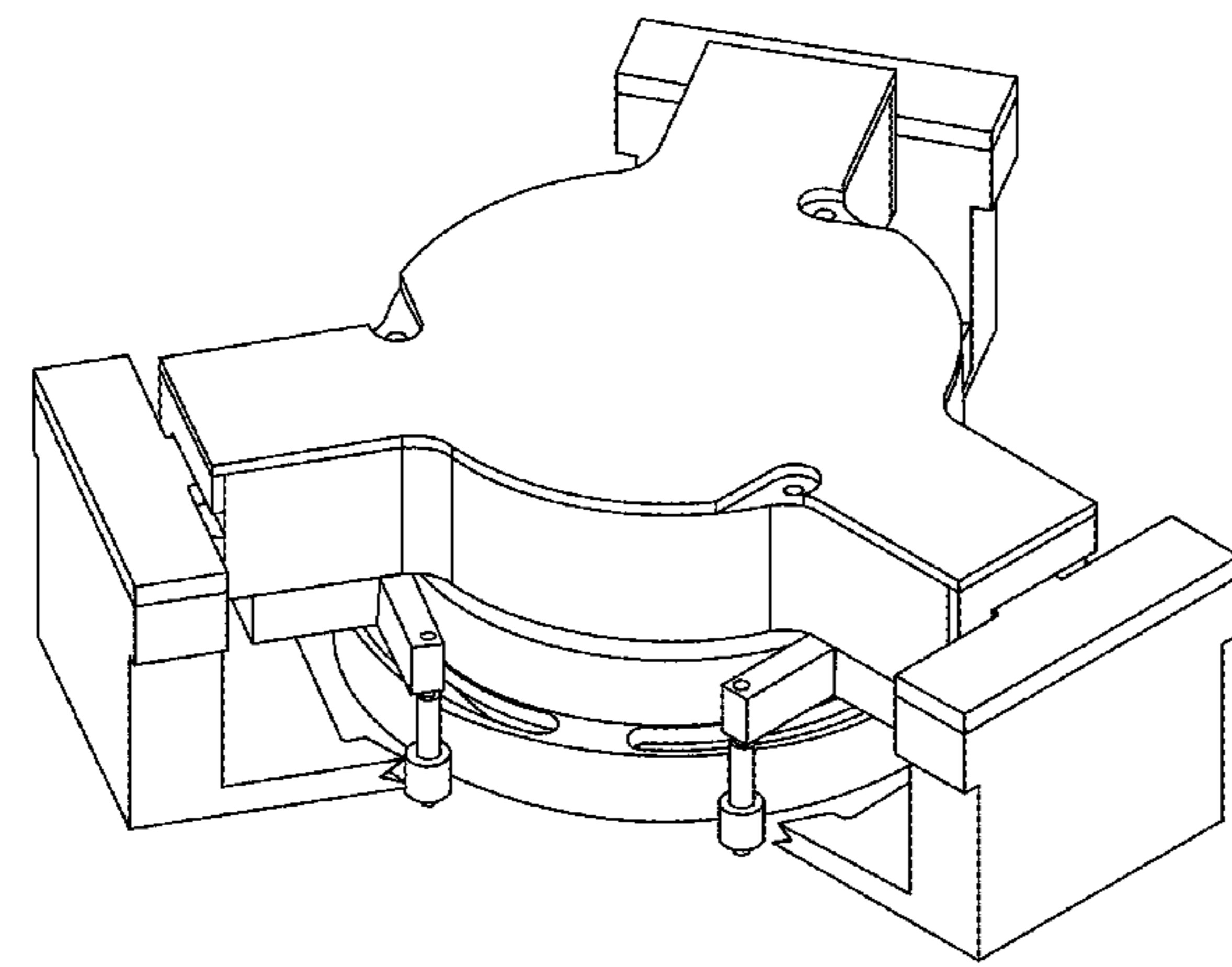


FIG. 2 is a top view of the wafer handling assembly of FIG. 1.
FIG. 3 is a side view of the wafer handling assembly of FIG. 1.
FIG. 4 is another side view of the wafer handling assembly of FIG. 1.
FIG. 5 is a bottom perspective view of the wafer handling assembly of FIG. 1.
FIG. 6 is a top perspective view of a second embodiment of a wafer handling assembly.
FIG. 7 is a top view of the wafer handling assembly of FIG. 6.
FIG. 8 is a side view of the wafer handling assembly of FIG. 6.
FIG. 9 is another side view of the wafer handling assembly of FIG. 6.
FIG. 10 is a bottom perspective view of the wafer handling assembly of FIG. 6.
FIG. 11 is a top perspective view of a third embodiment of a wafer handling assembly.
FIG. 12 is a top view of the wafer handling assembly of FIG. 11.
FIG. 13 is a side view of the wafer handling assembly of FIG. 11.
FIG. 14 is another side view of the wafer handling assembly of FIG. 11.
FIG. 15 is a bottom perspective view of the wafer handling assembly of FIG. 11.
FIG. 16 is a top perspective view of a fourth embodiment of a wafer handling assembly.
FIG. 17 is a top view of the wafer handling assembly of FIG. 16.
FIG. 18 is a side view of the wafer handling assembly of FIG. 16.
FIG. 19 is another side view of the wafer handling assembly of FIG. 16.
FIG. 20 is a bottom perspective view of the wafer handling assembly of FIG. 16.
FIG. 21 is a top perspective view of a fifth embodiment of a wafer handling assembly.
FIG. 22 is a top view of the wafer handling assembly of FIG. 21.
FIG. 23 is a side view of the wafer handling assembly of FIG. 21.
FIG. 24 is another side view of the wafer handling assembly of FIG. 21.

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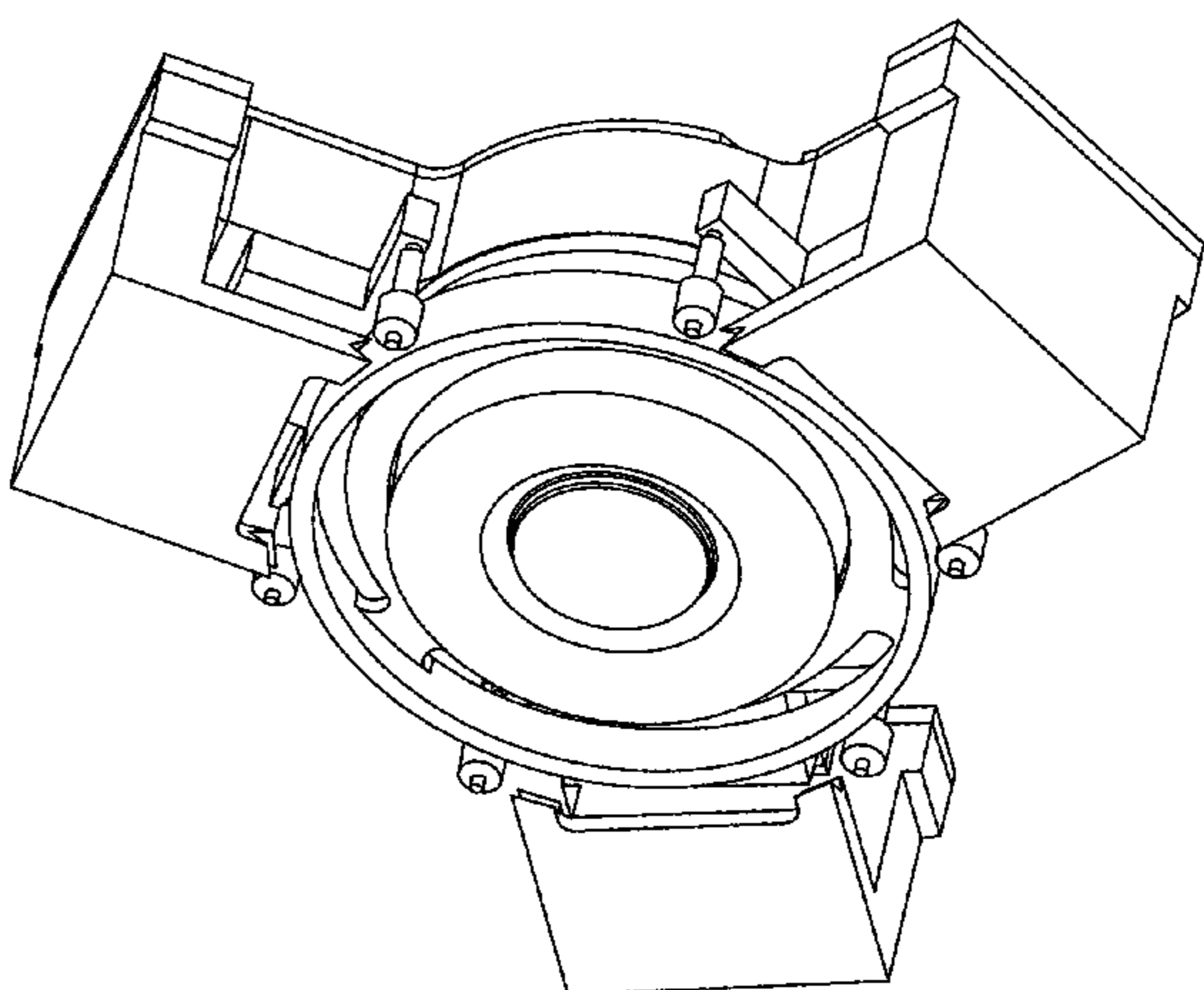


FIG. 25 is a bottom perspective view of the wafer handling assembly of FIG. 21.
 FIG. 26 is a top perspective view of a sixth embodiment of a wafer handling assembly.
 FIG. 27 is a top view of the wafer handling assembly of FIG. 26.
 FIG. 28 is a side view of the wafer handling assembly of FIG. 26.
 FIG. 29 is another side view of the wafer handling assembly of FIG. 26; and,
 FIG. 30 is a bottom perspective view of the wafer handling assembly of FIG. 26.

1 Claim, 30 Drawing Sheets

(58) **Field of Classification Search**

CPC B25J 15/0028; B25J 15/0052; B25J 11/0095; H01L 21/6838; H01L 21/68742
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,791,895 A * 8/1998 Kyung C30B 31/14
 118/503

6,249,342 B1 * 6/2001 Cheng G01R 31/2887
 356/237.2
 6,276,892 B1 * 8/2001 Haraguchi H01L 21/67742
 414/744.5
 6,357,996 B2 3/2002 Bacchi et al.
 6,514,033 B2 2/2003 Sundar
 6,537,011 B1 * 3/2003 Wang H01L 21/68707
 118/728
 6,692,219 B2 2/2004 Coomer et al.
 6,935,466 B2 * 8/2005 Lubomirsky H01L 21/68742
 118/724
 8,008,884 B2 * 8/2011 Krupyshev H01L 21/67742
 318/560
 D674,366 S * 1/2013 Kajiwara D13/182
 D674,761 S * 1/2013 Iida D13/182
 8,920,097 B2 * 12/2014 Chan H01L 21/67766
 414/217
 2005/0111944 A1 * 5/2005 Aho H01L 21/67766
 414/416.01
 2008/0107508 A1 * 5/2008 Chan H01L 21/67766
 414/217.1
 2015/0075431 A1 3/2015 Barriss et al.
 2017/0256434 A1 * 9/2017 Rashkovsky H01L 21/68785
 2017/0256436 A1 * 9/2017 Rashkovsky H01L 21/68742

* cited by examiner

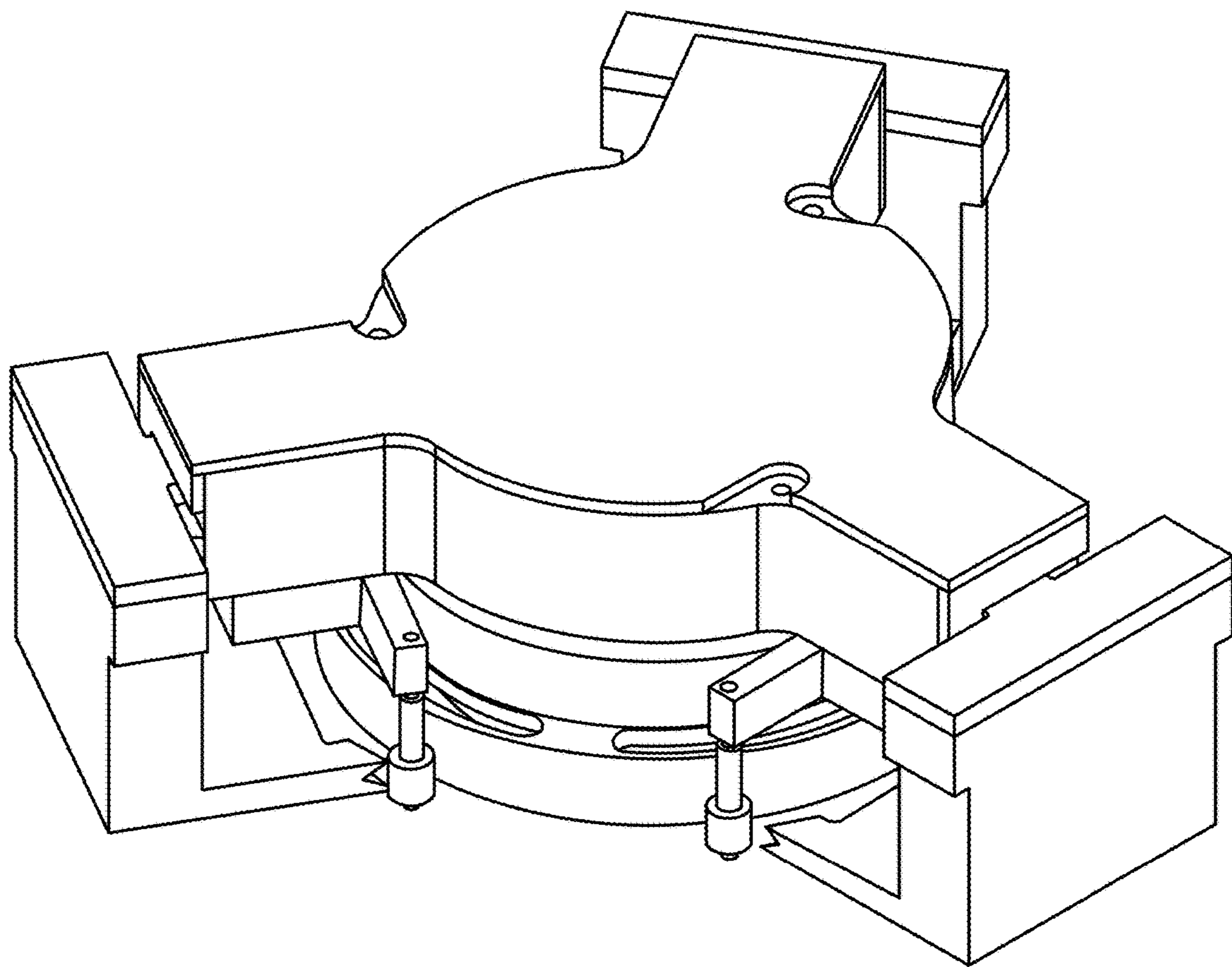


FIG. 1

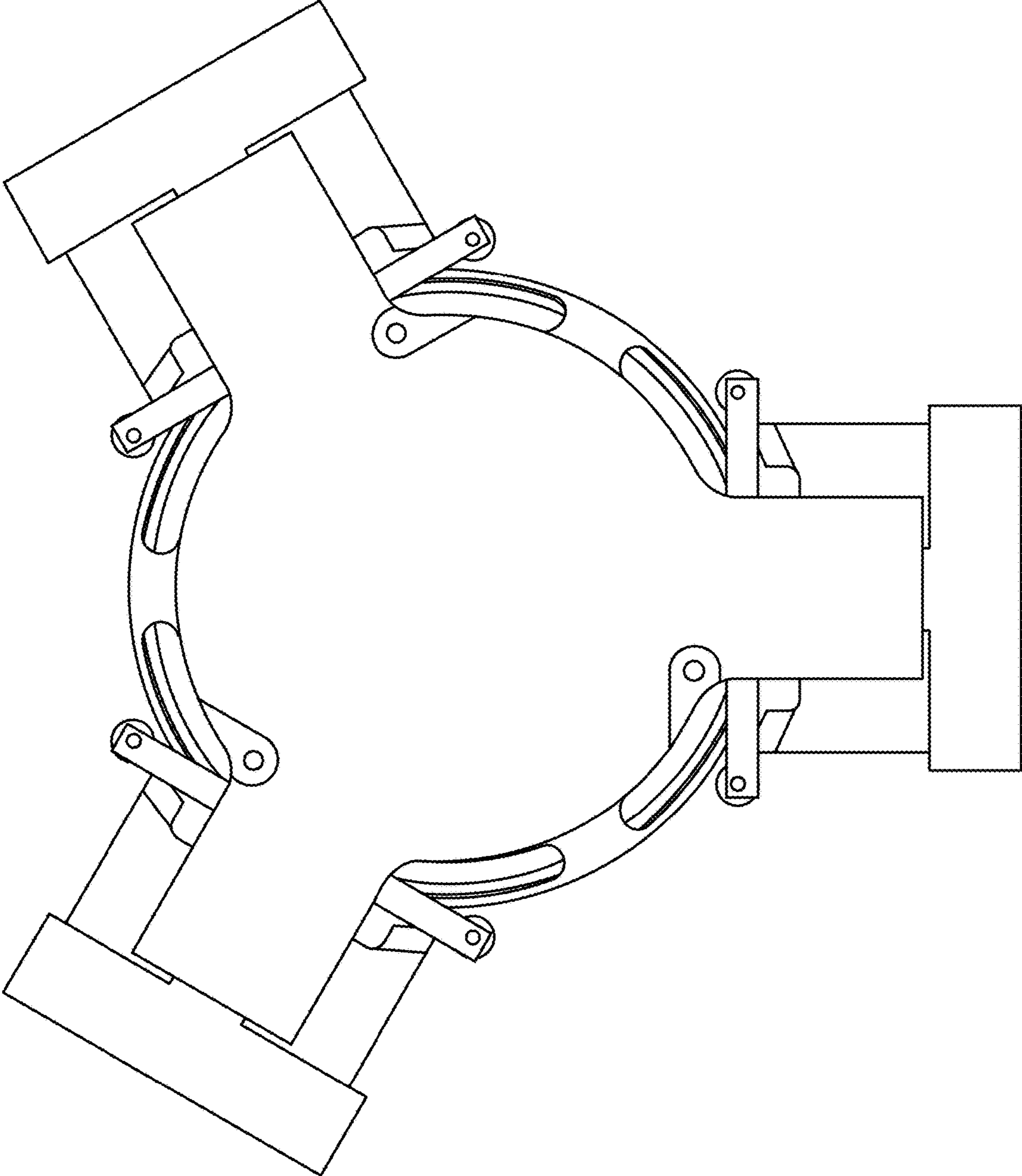


FIG. 2

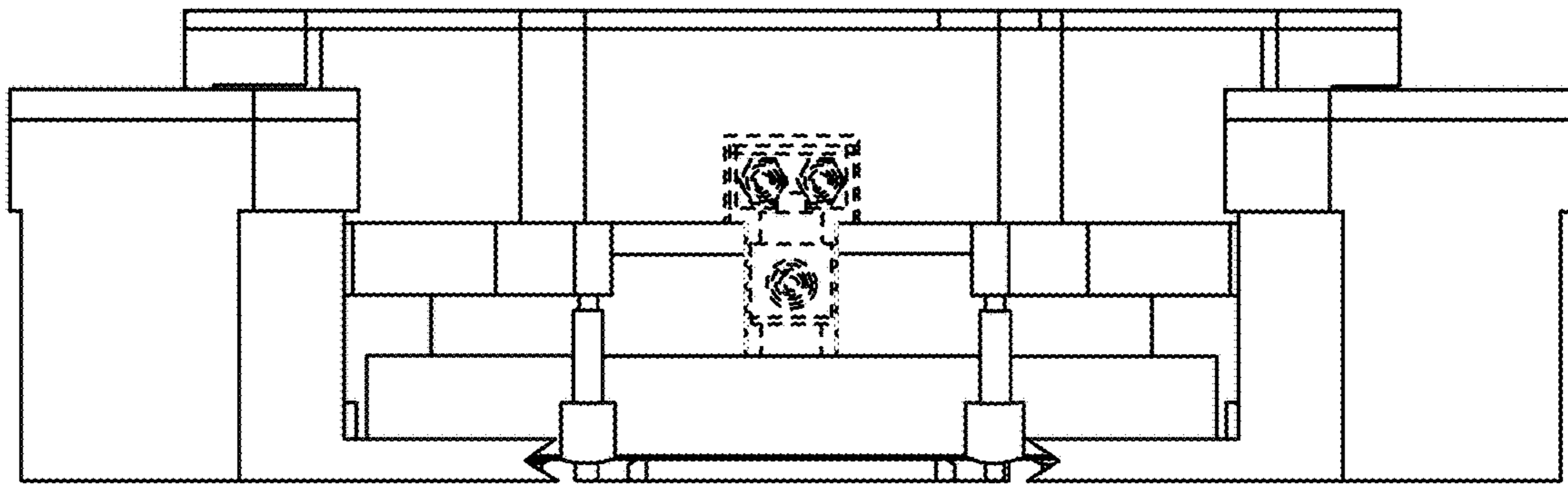


FIG. 3

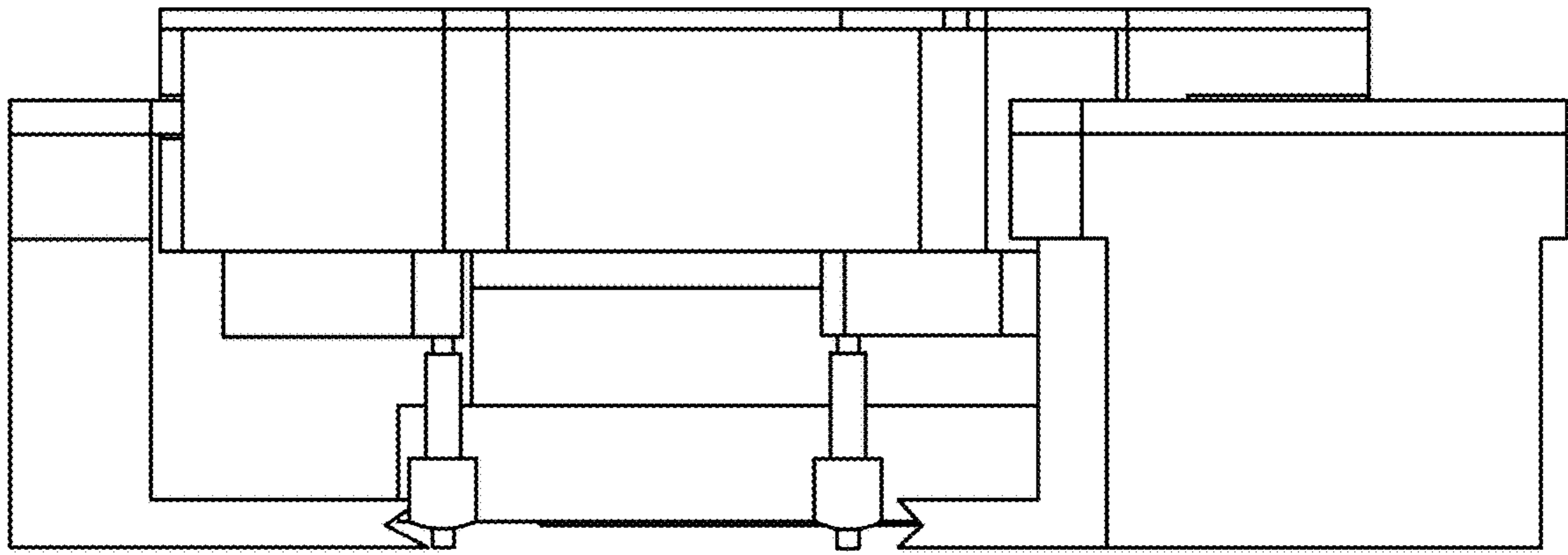


FIG. 4

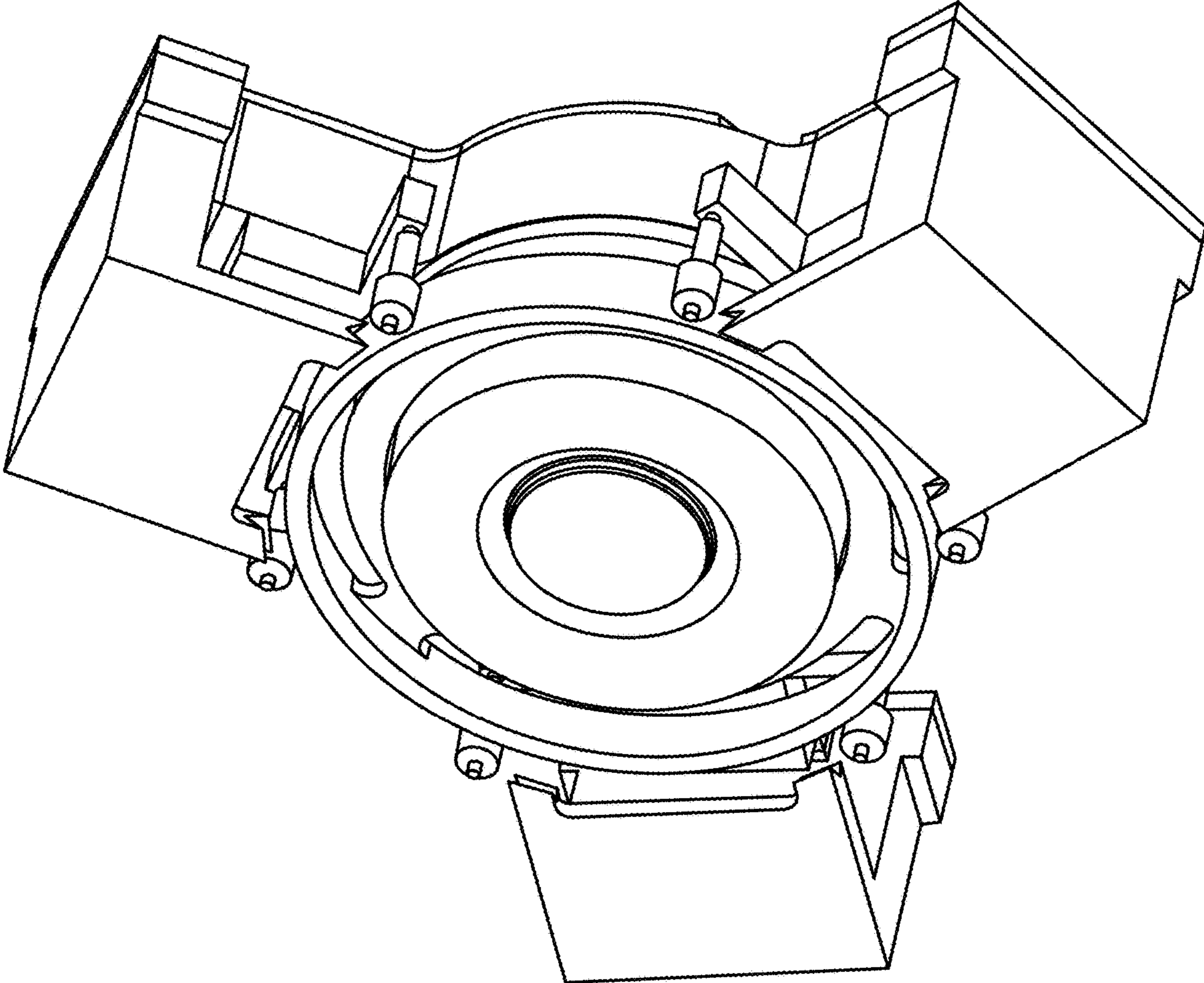


FIG. 5

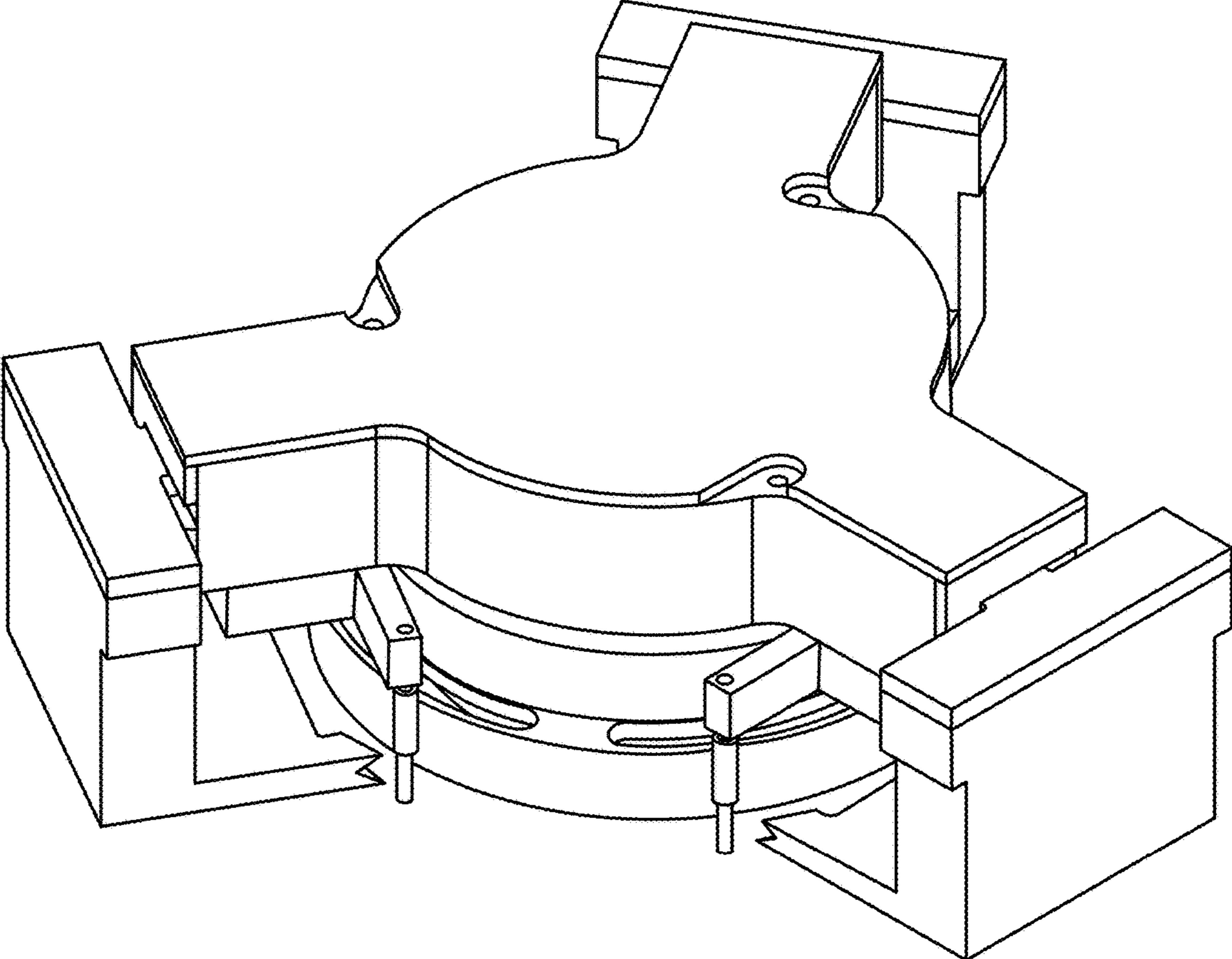


FIG. 6

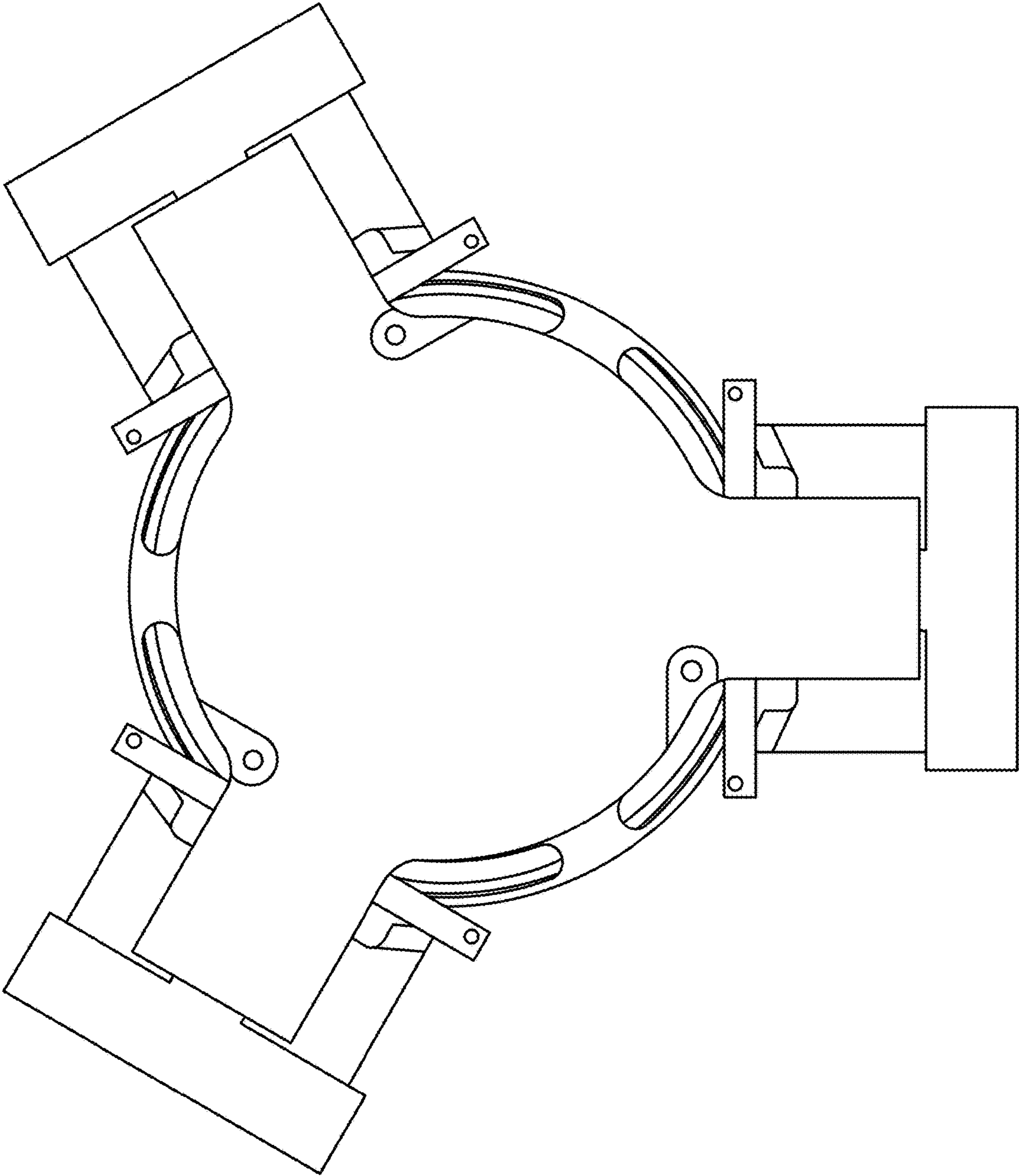


FIG. 7

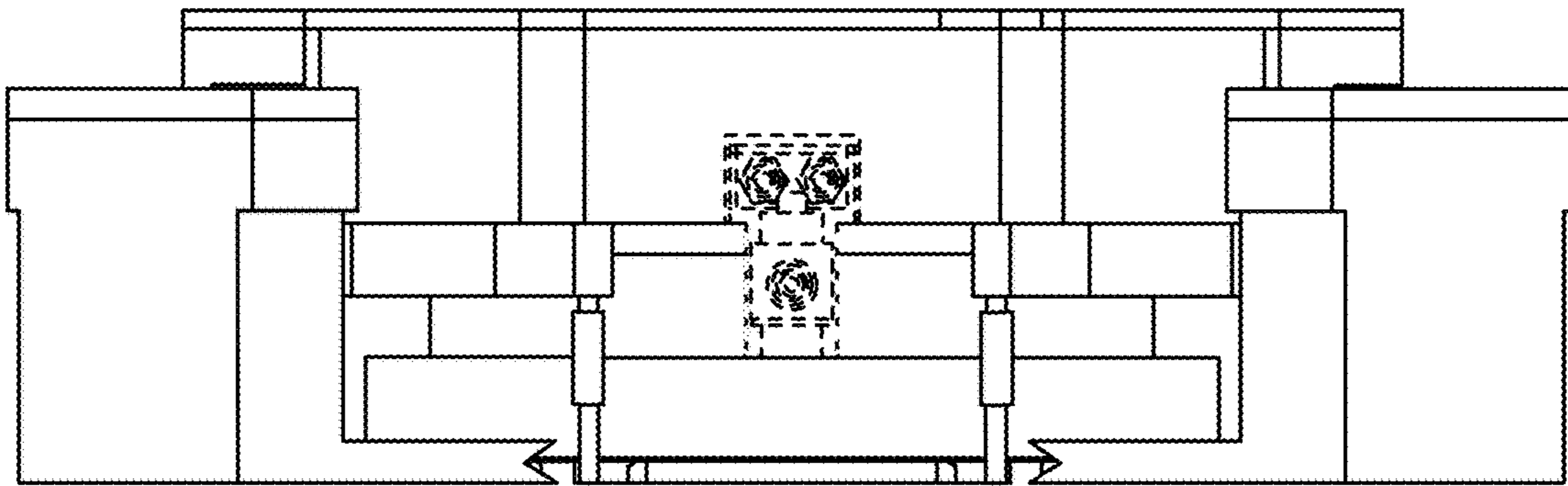


FIG. 8

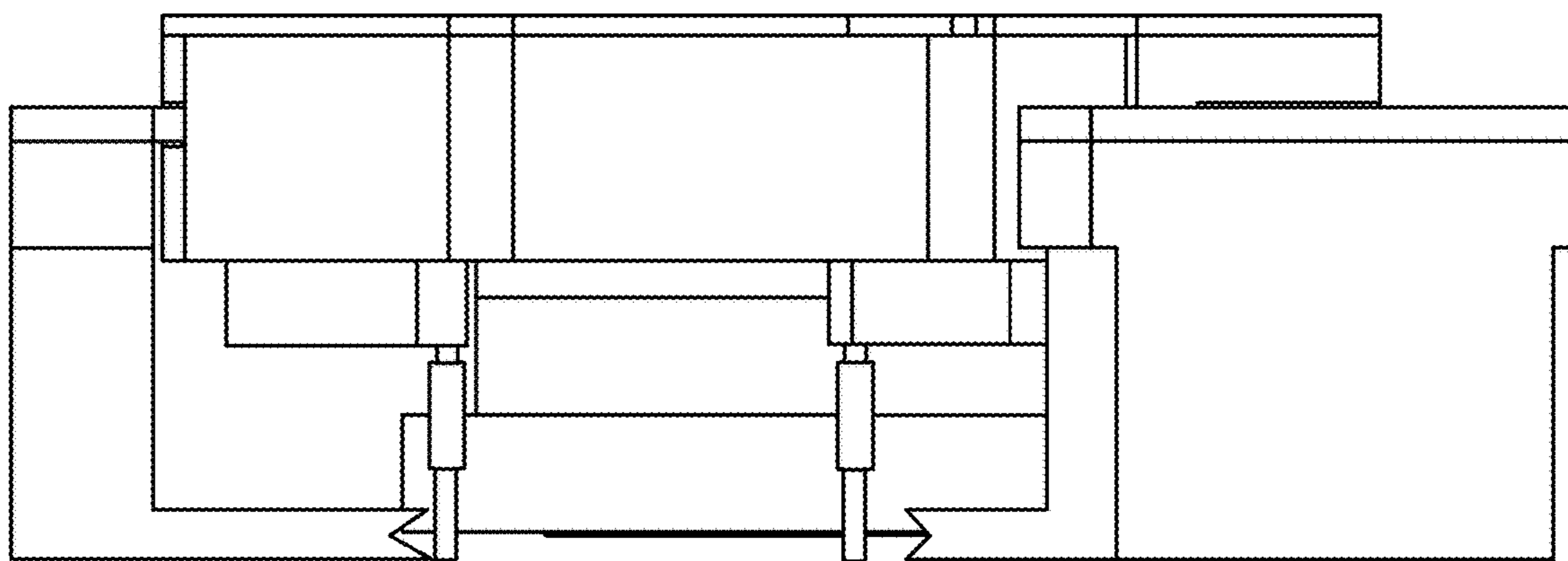


FIG. 9

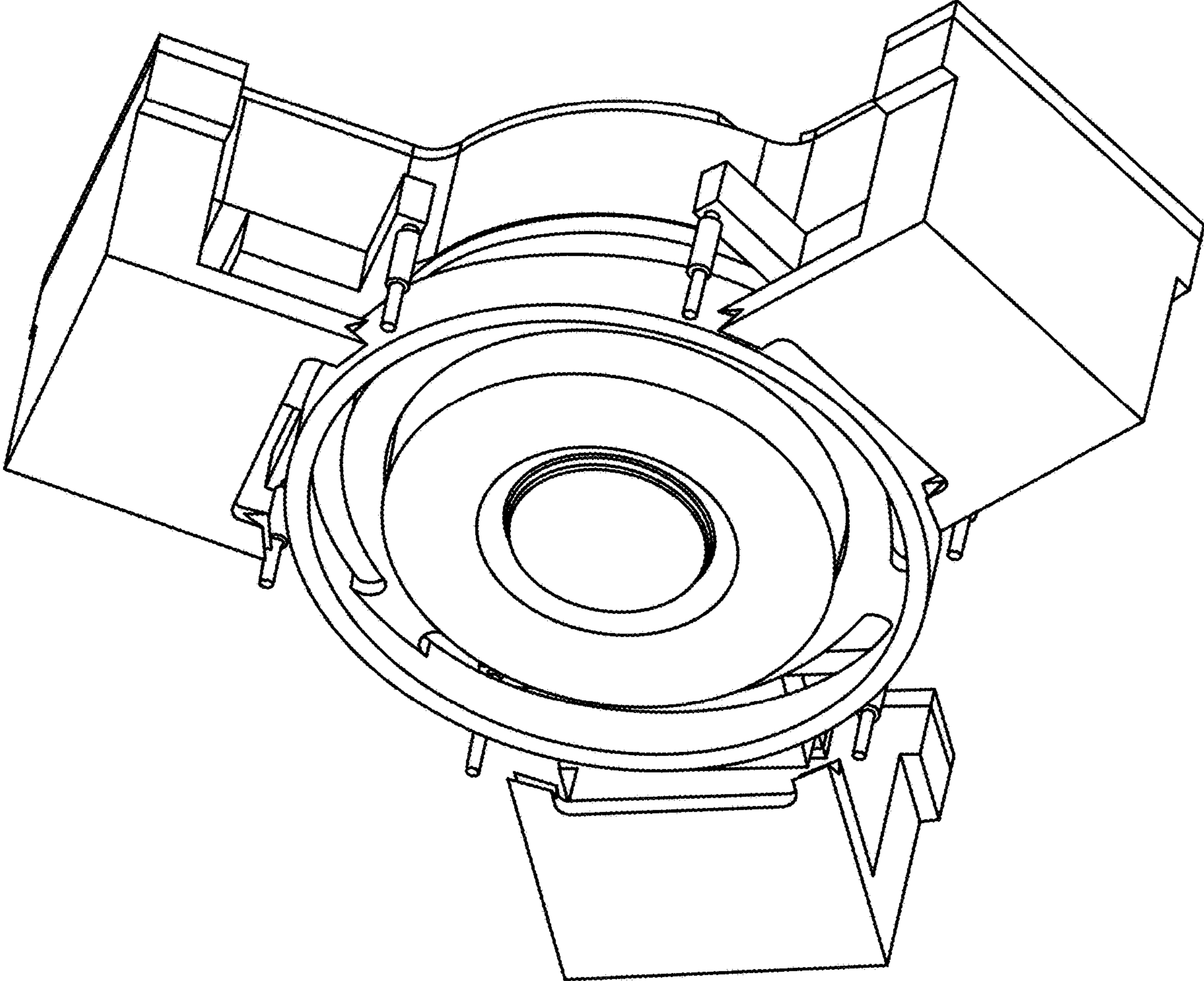


FIG. 10

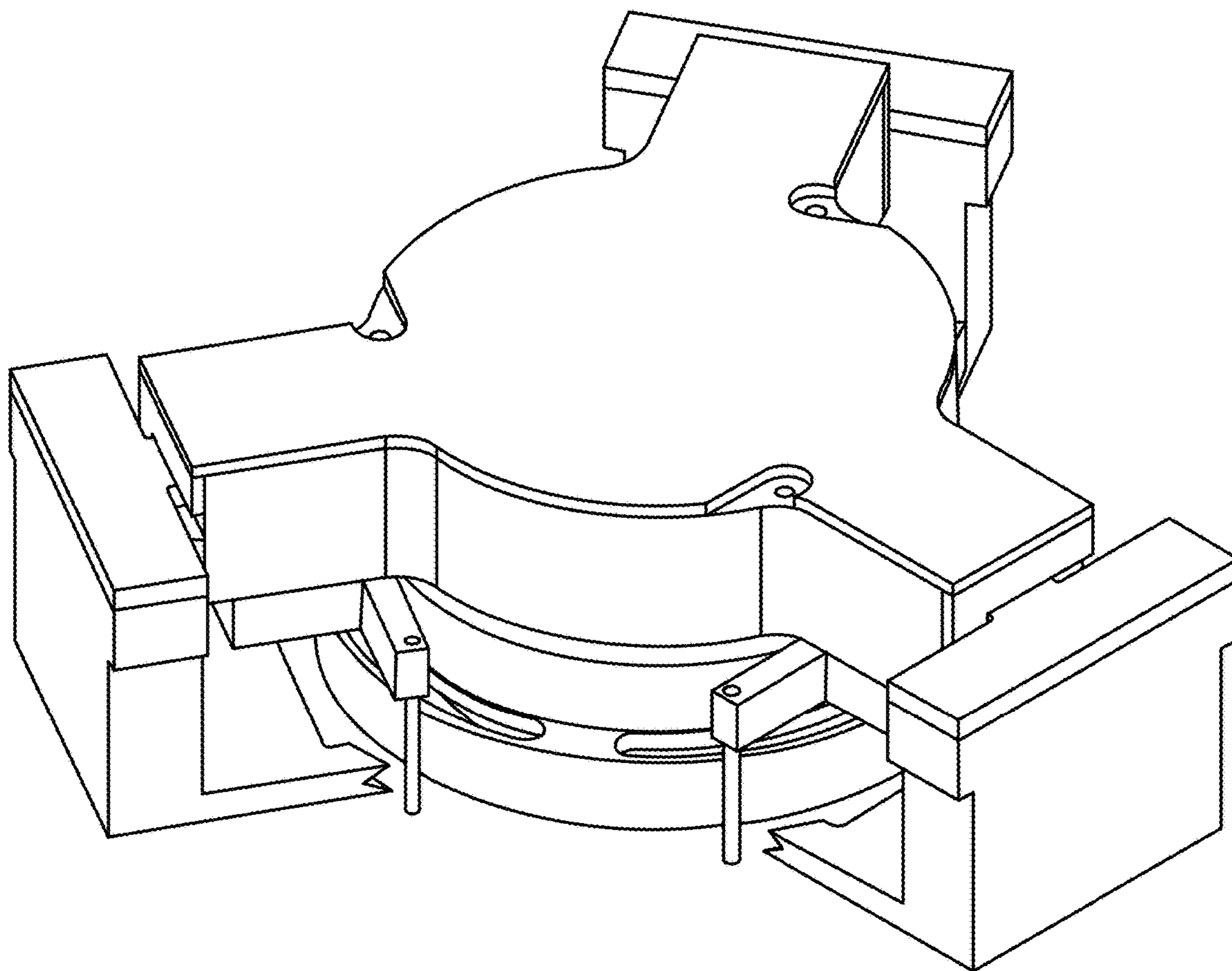


FIG. 11

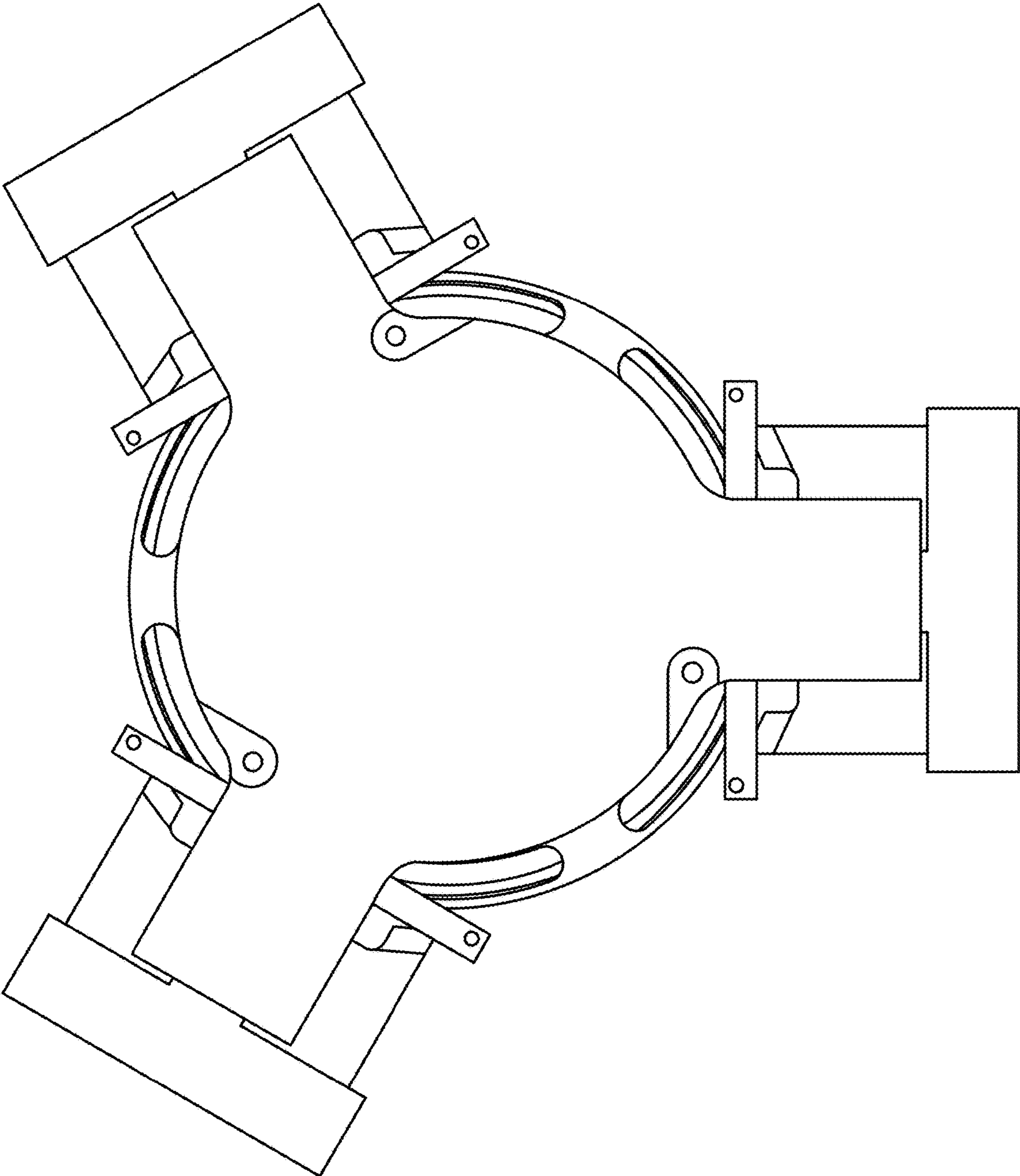


FIG. 12

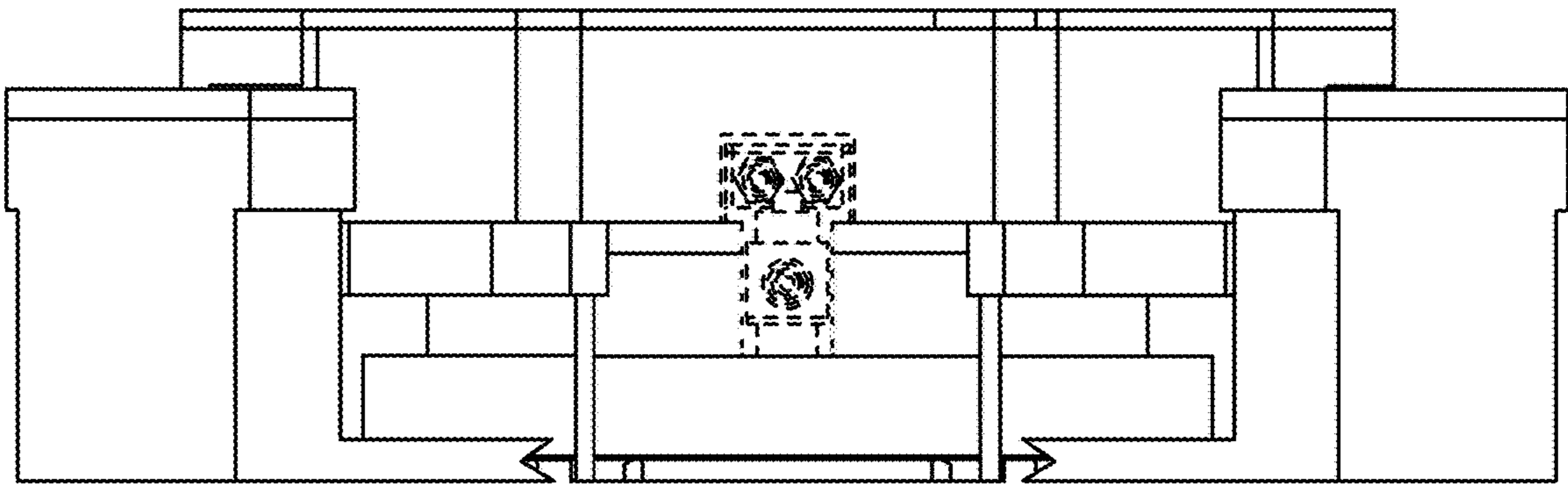


FIG. 13

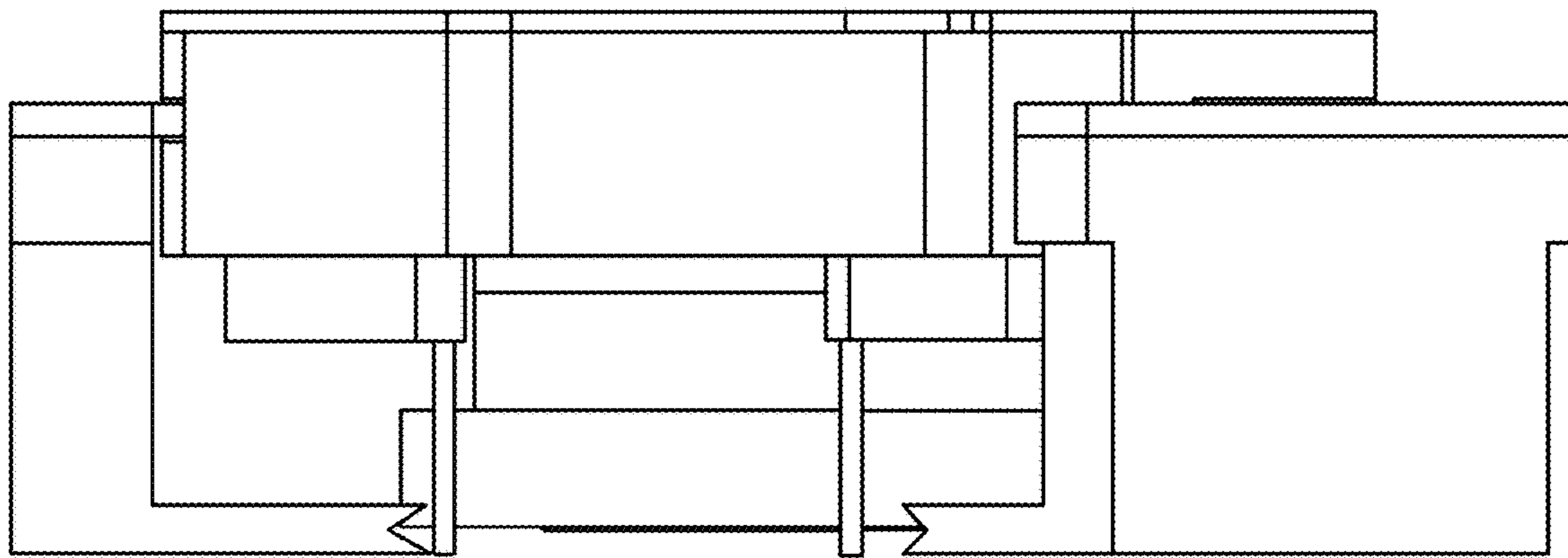


FIG. 14

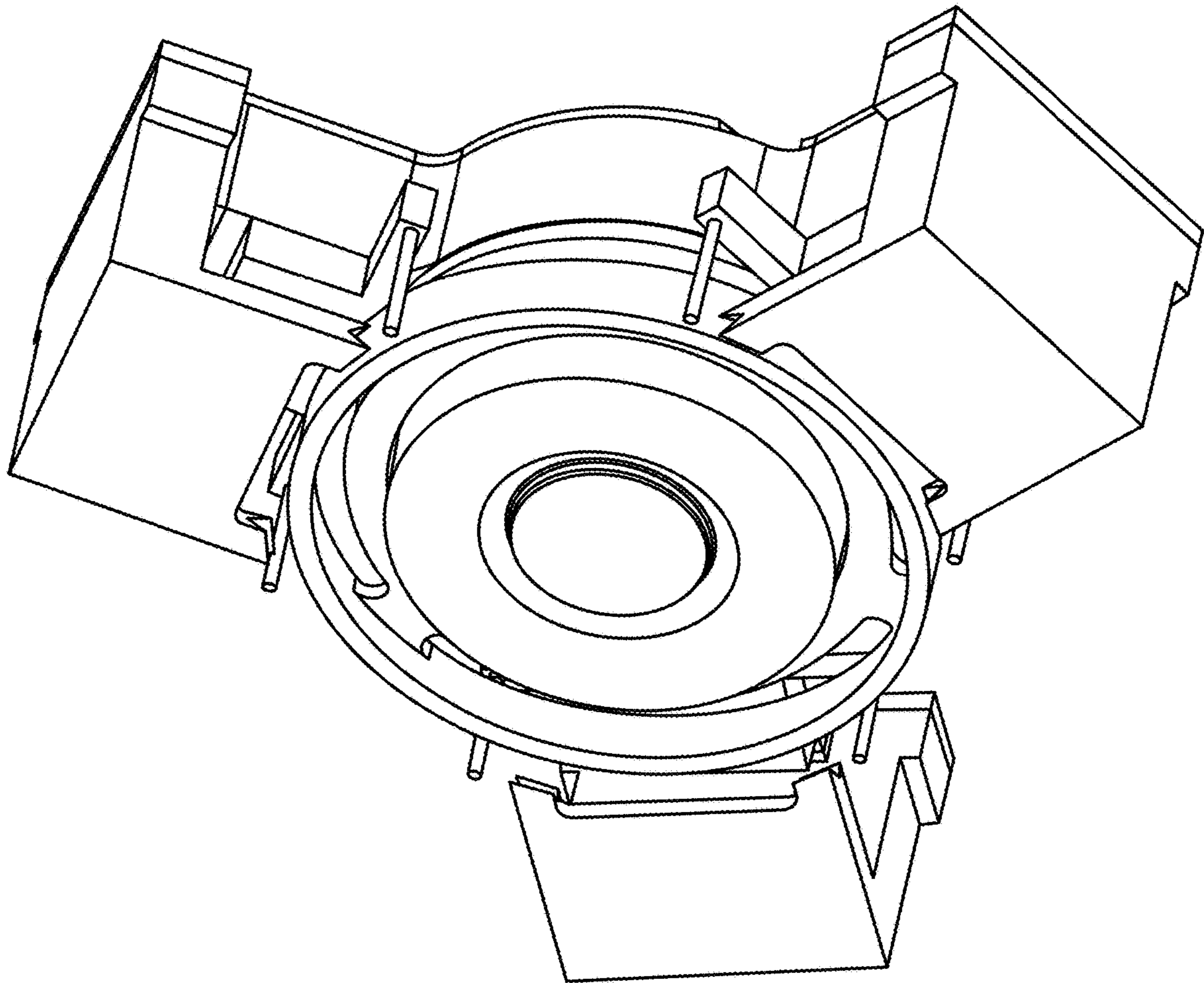


FIG. 15

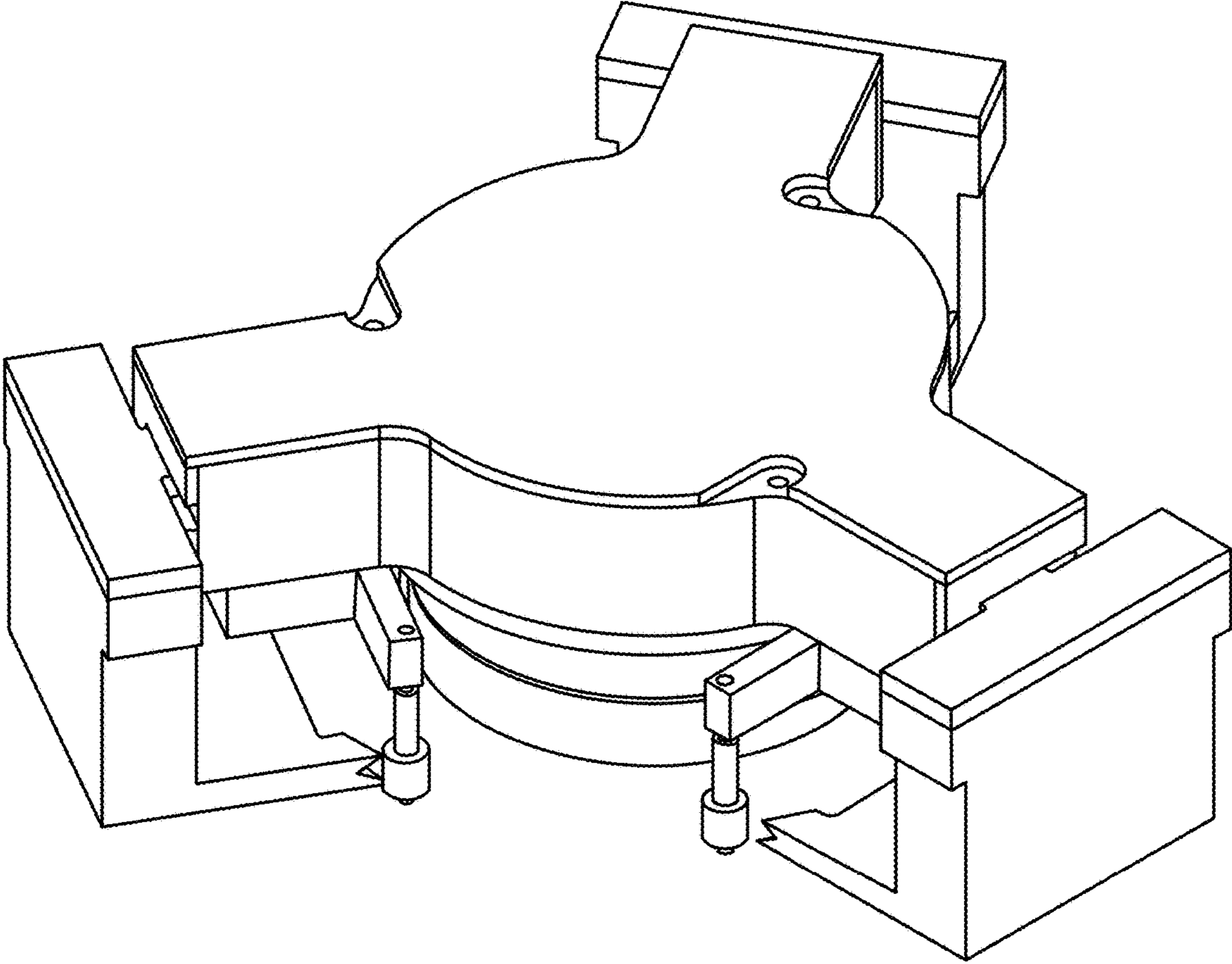


FIG. 16

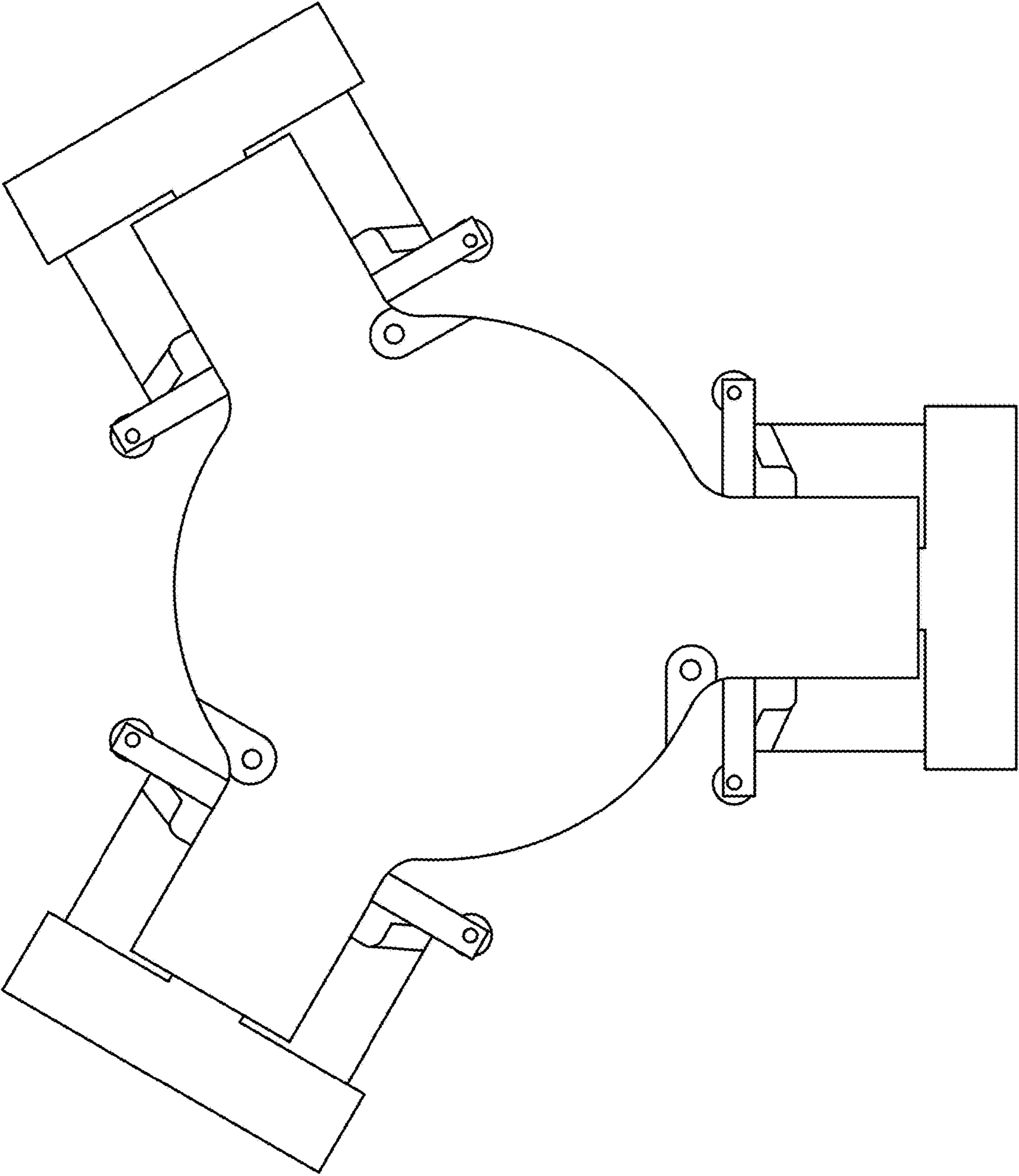


FIG. 17

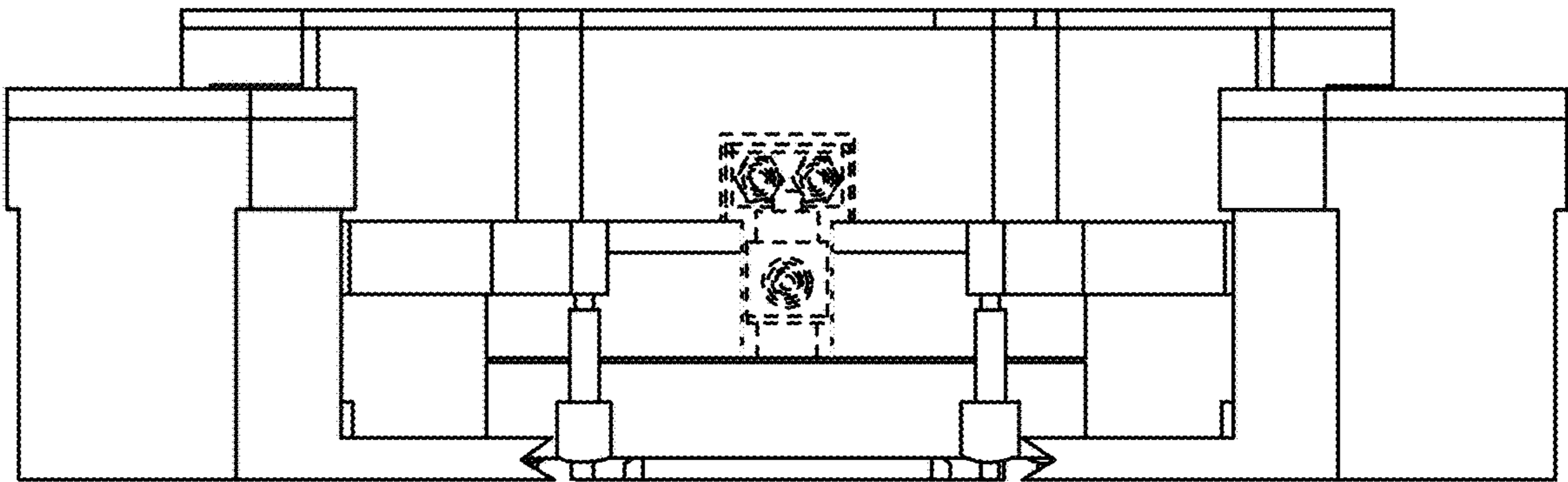


FIG. 18

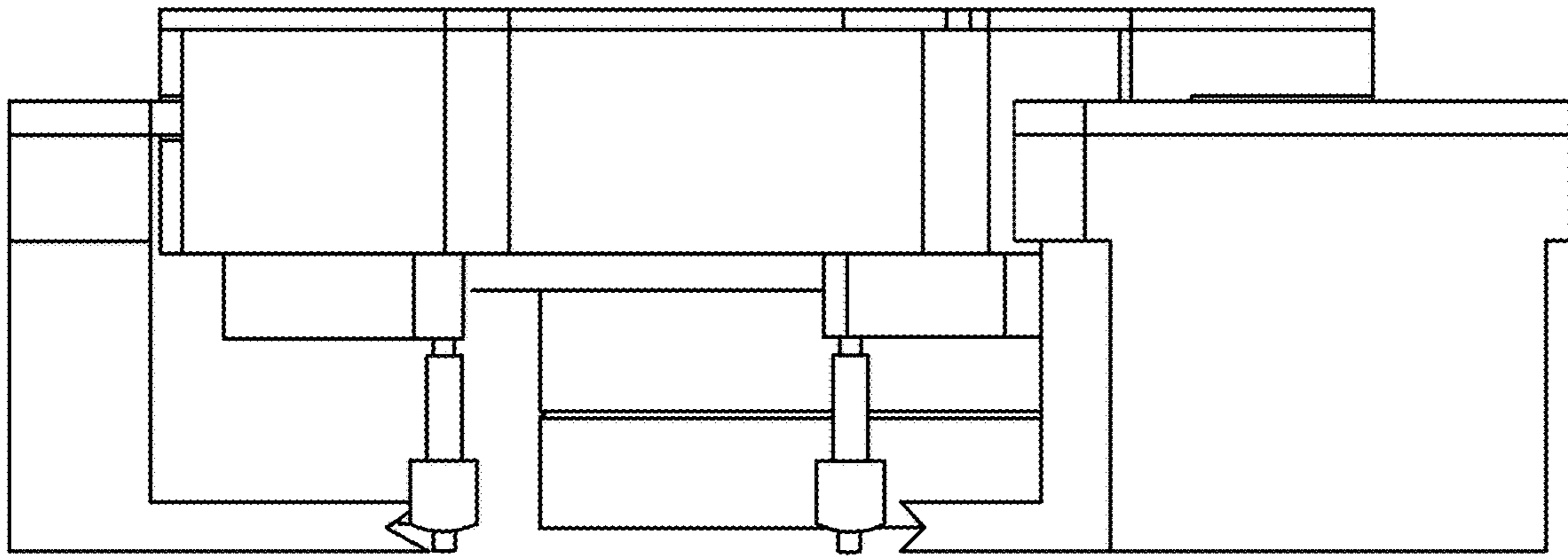


FIG. 19

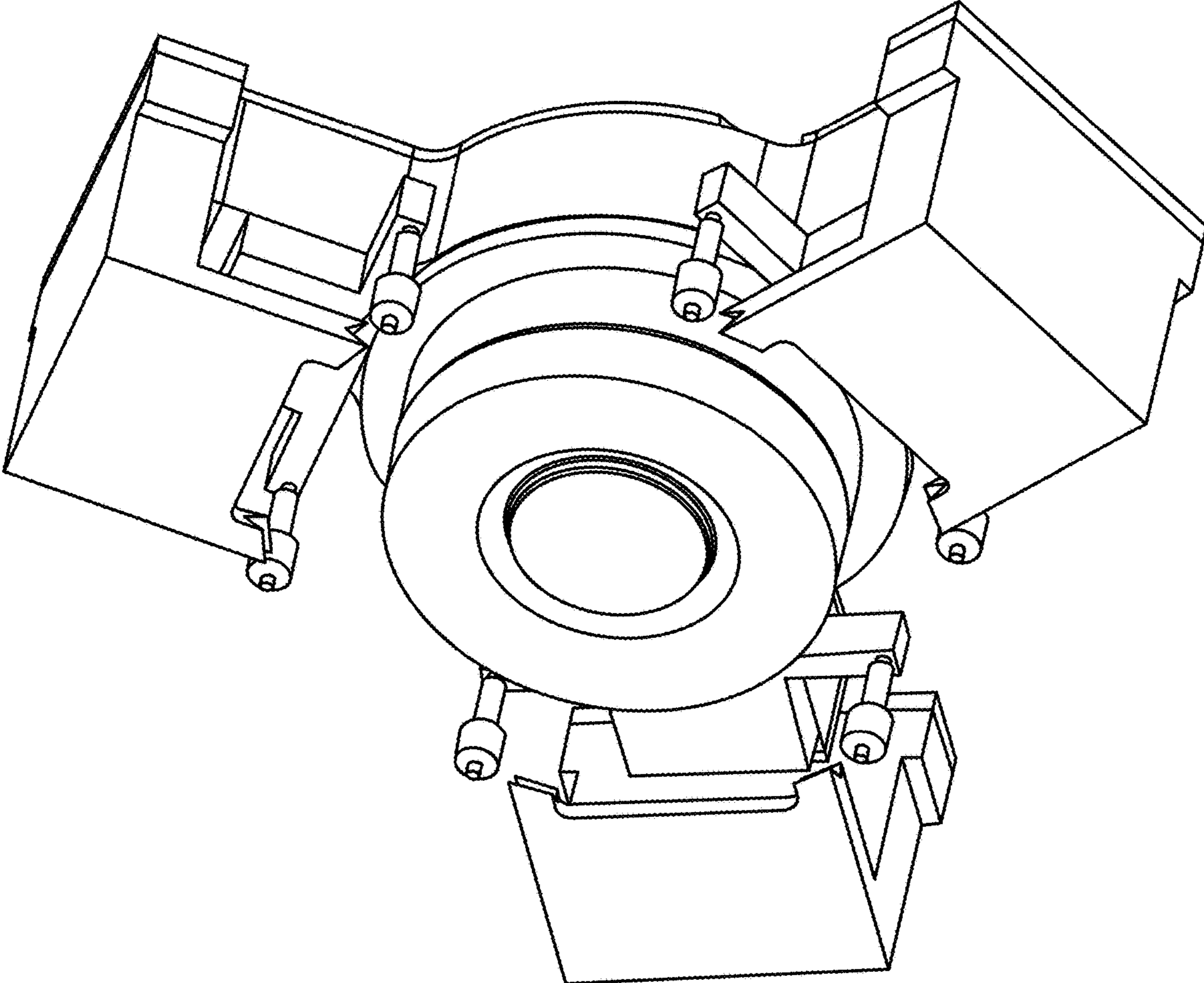


FIG. 20

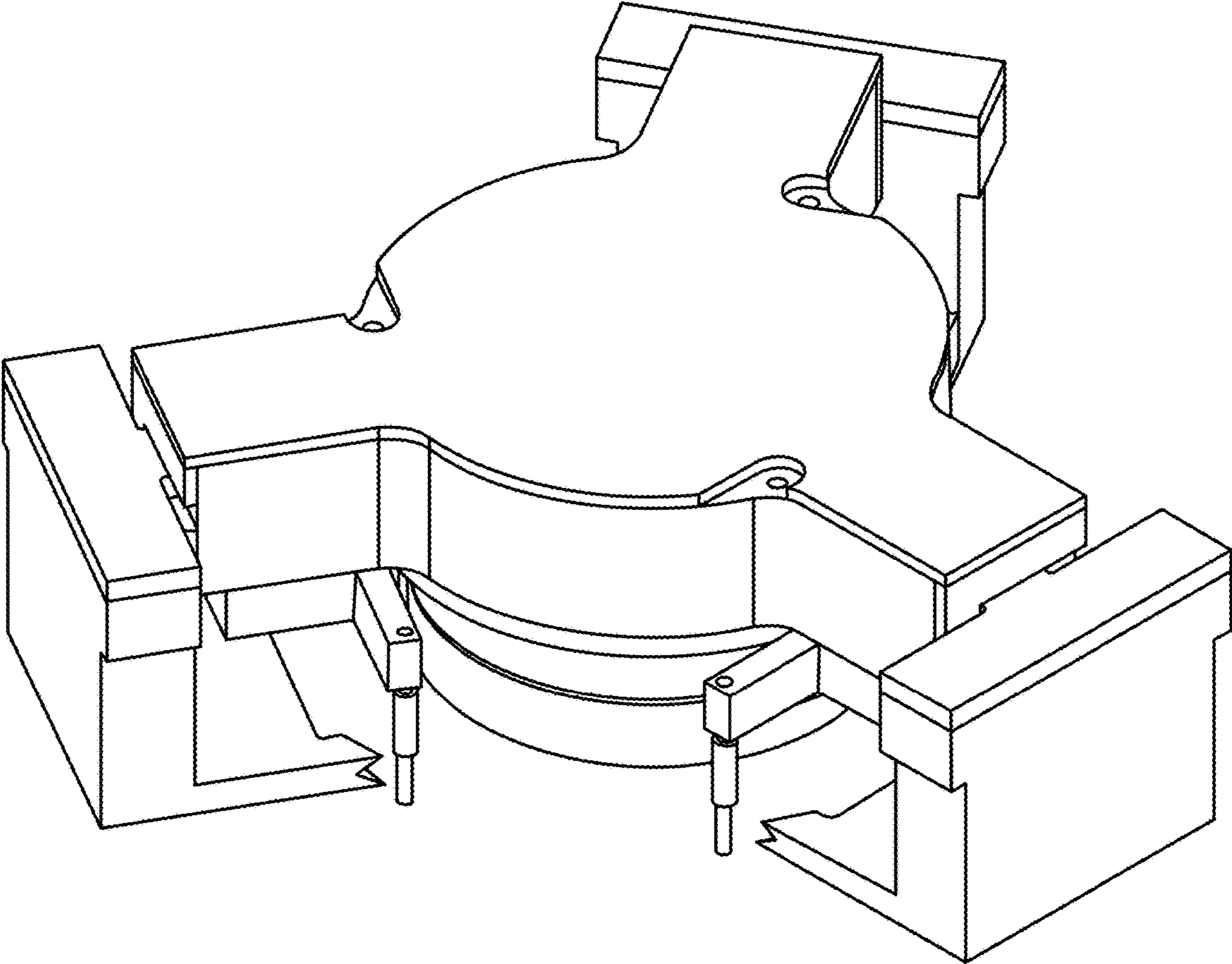


FIG. 21

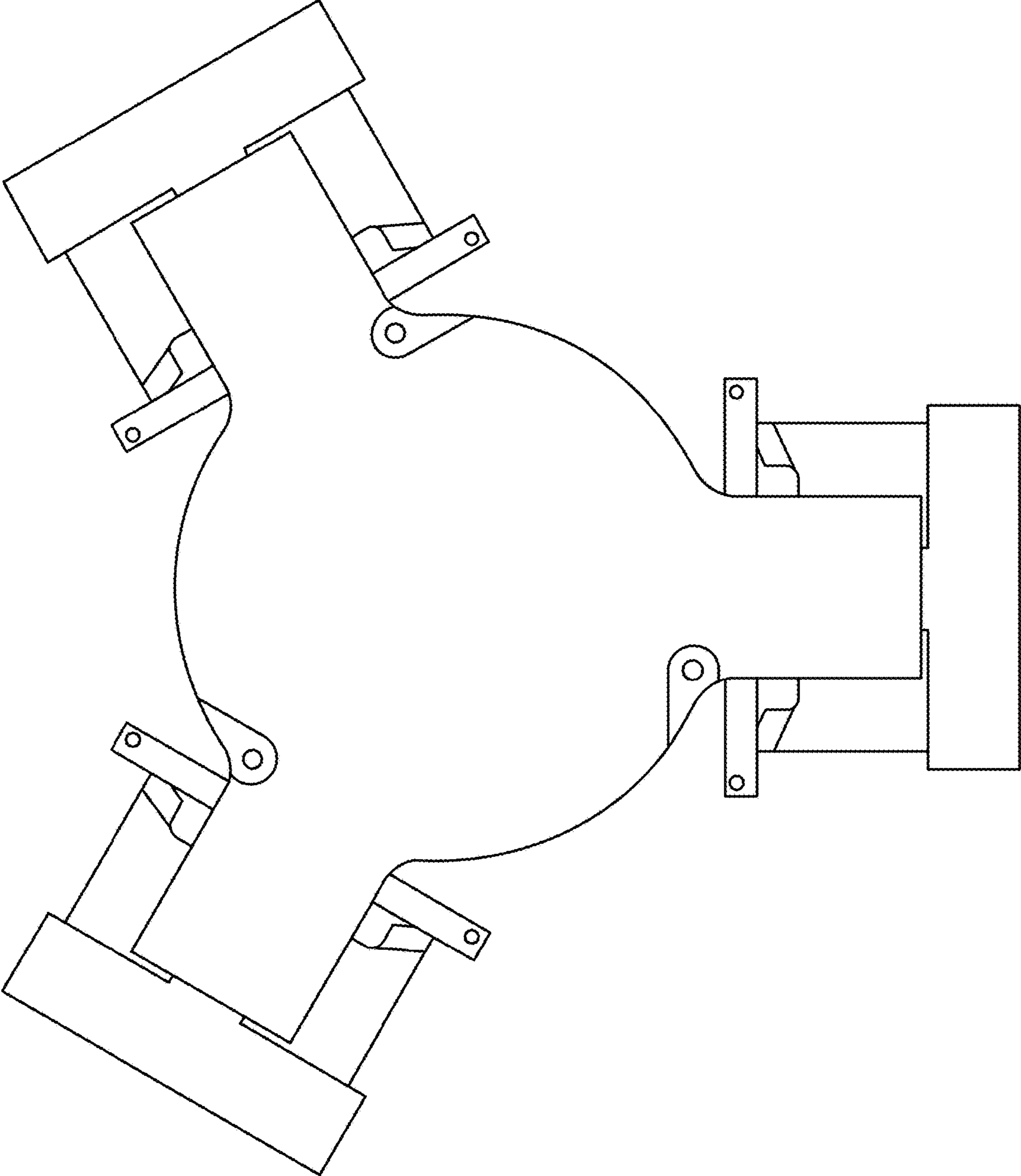


FIG. 22

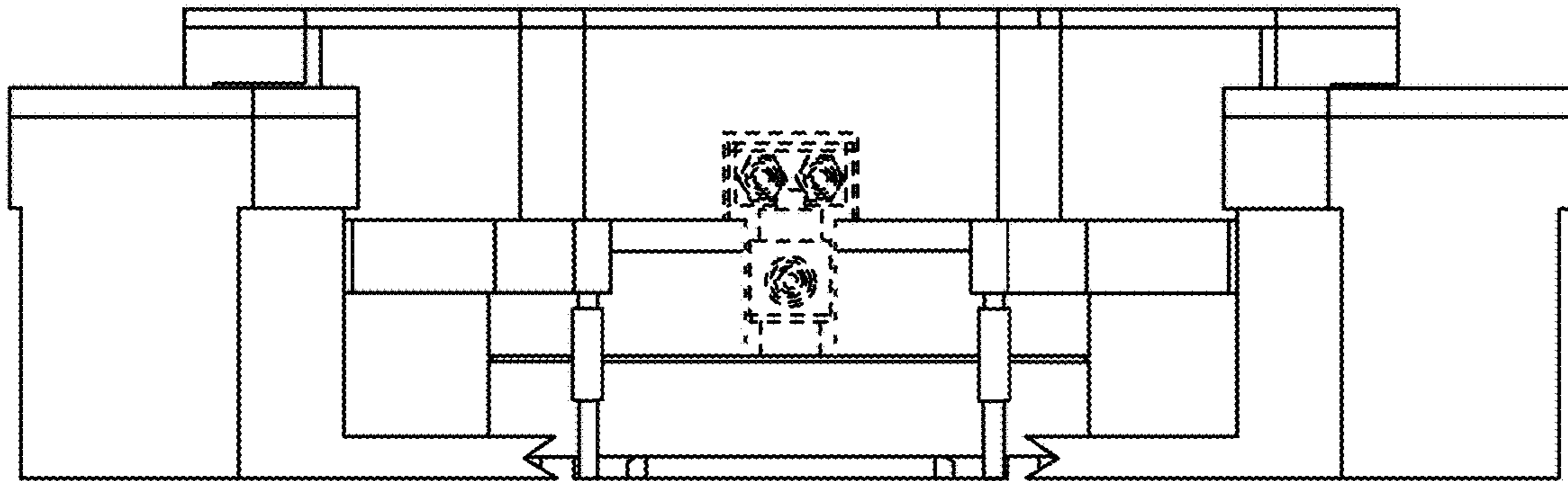


FIG. 23

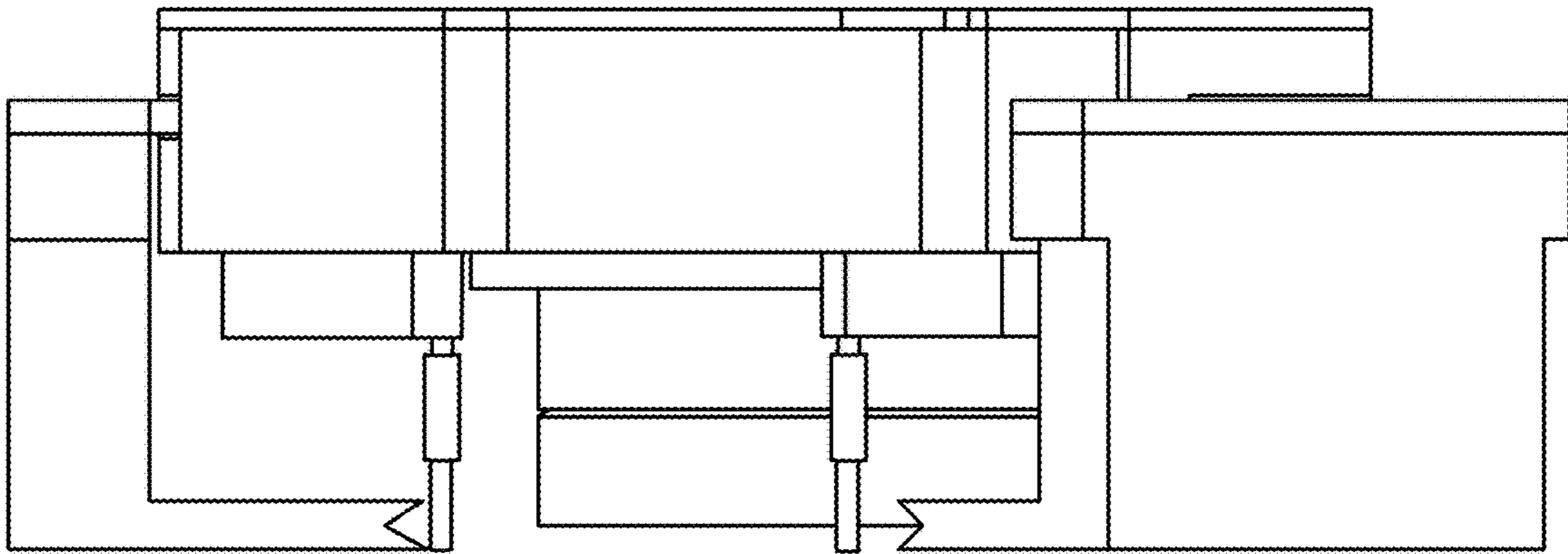


FIG. 24

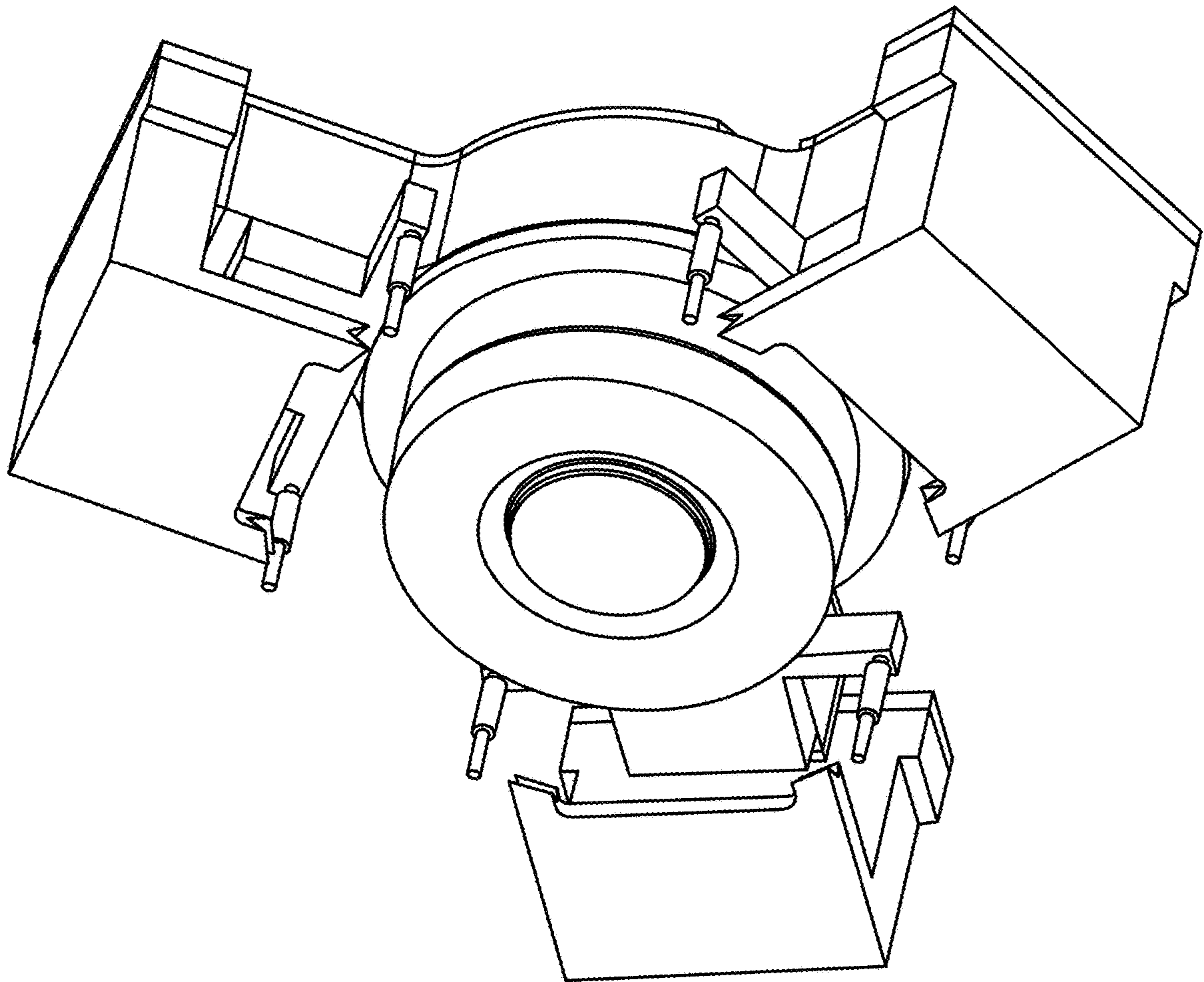


FIG. 25

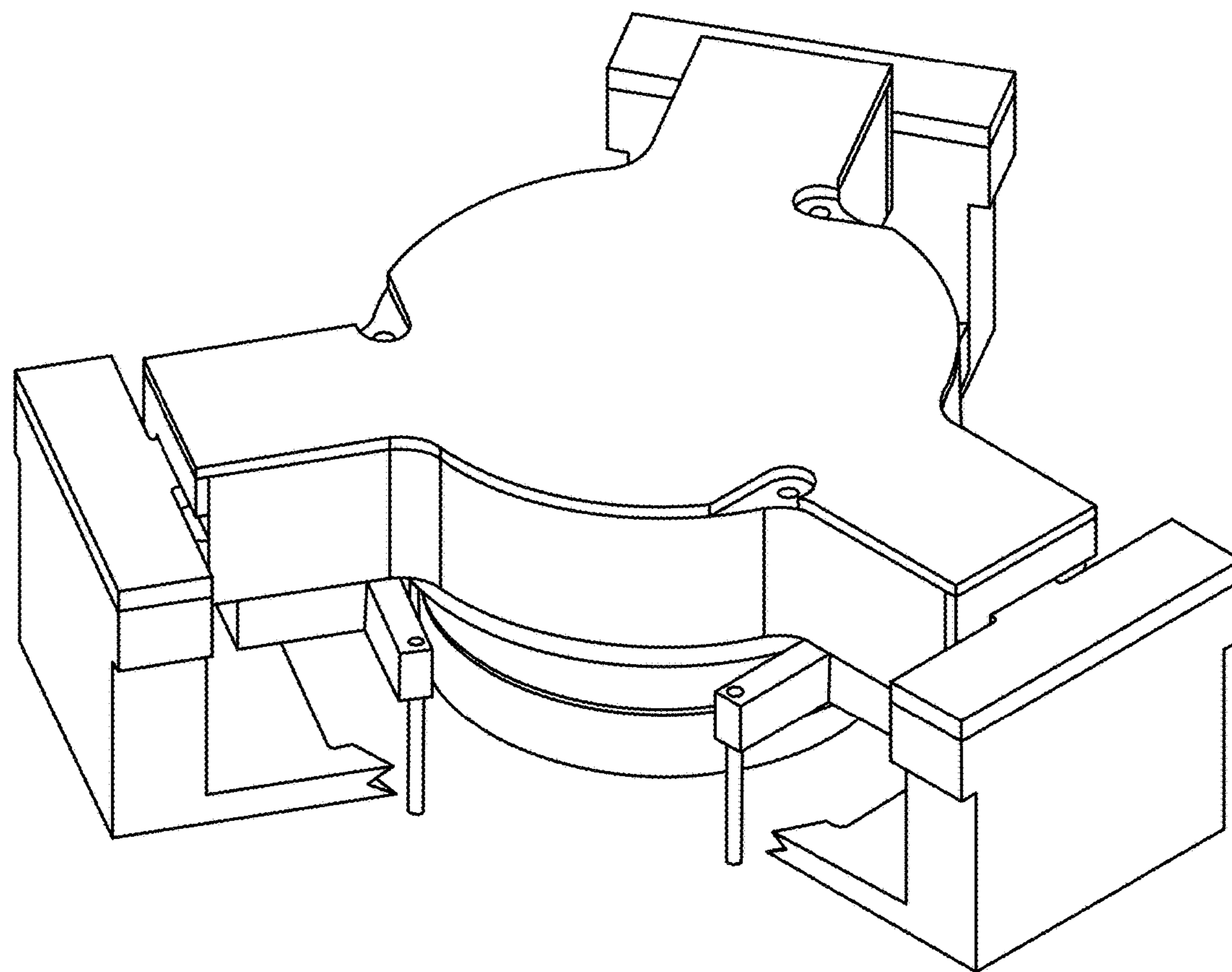


FIG. 26

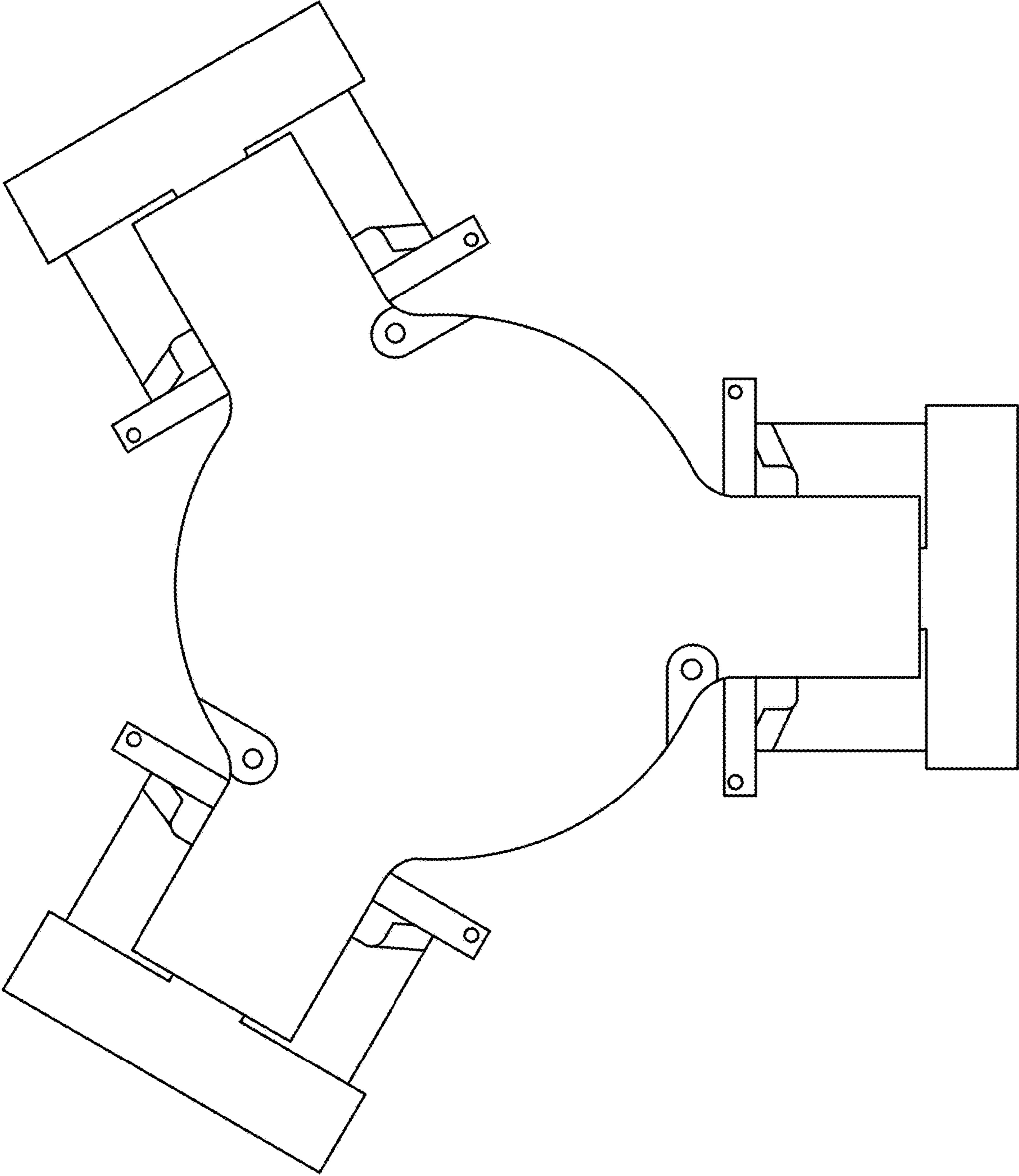


FIG. 27

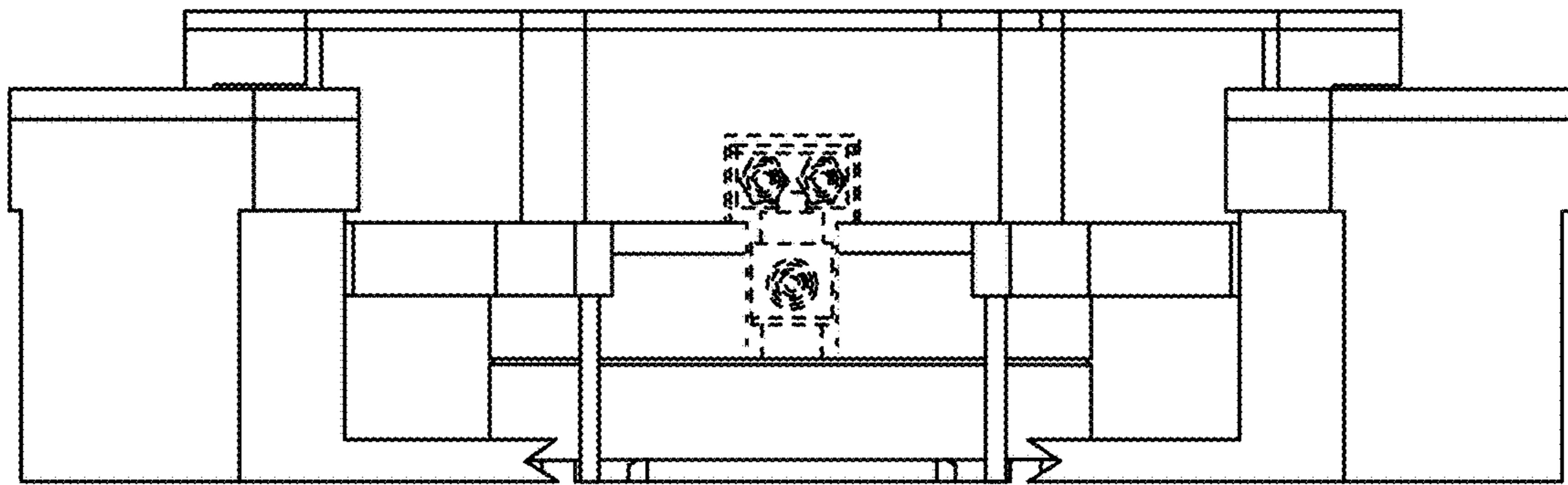


FIG. 28

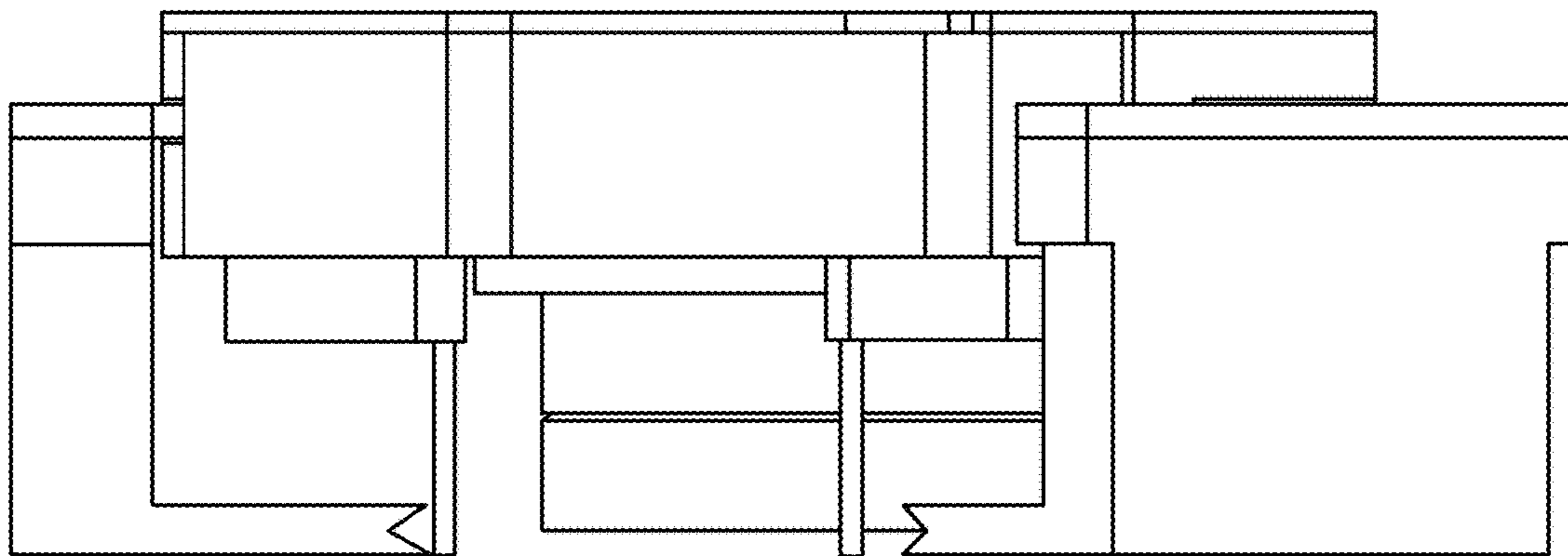


FIG. 29

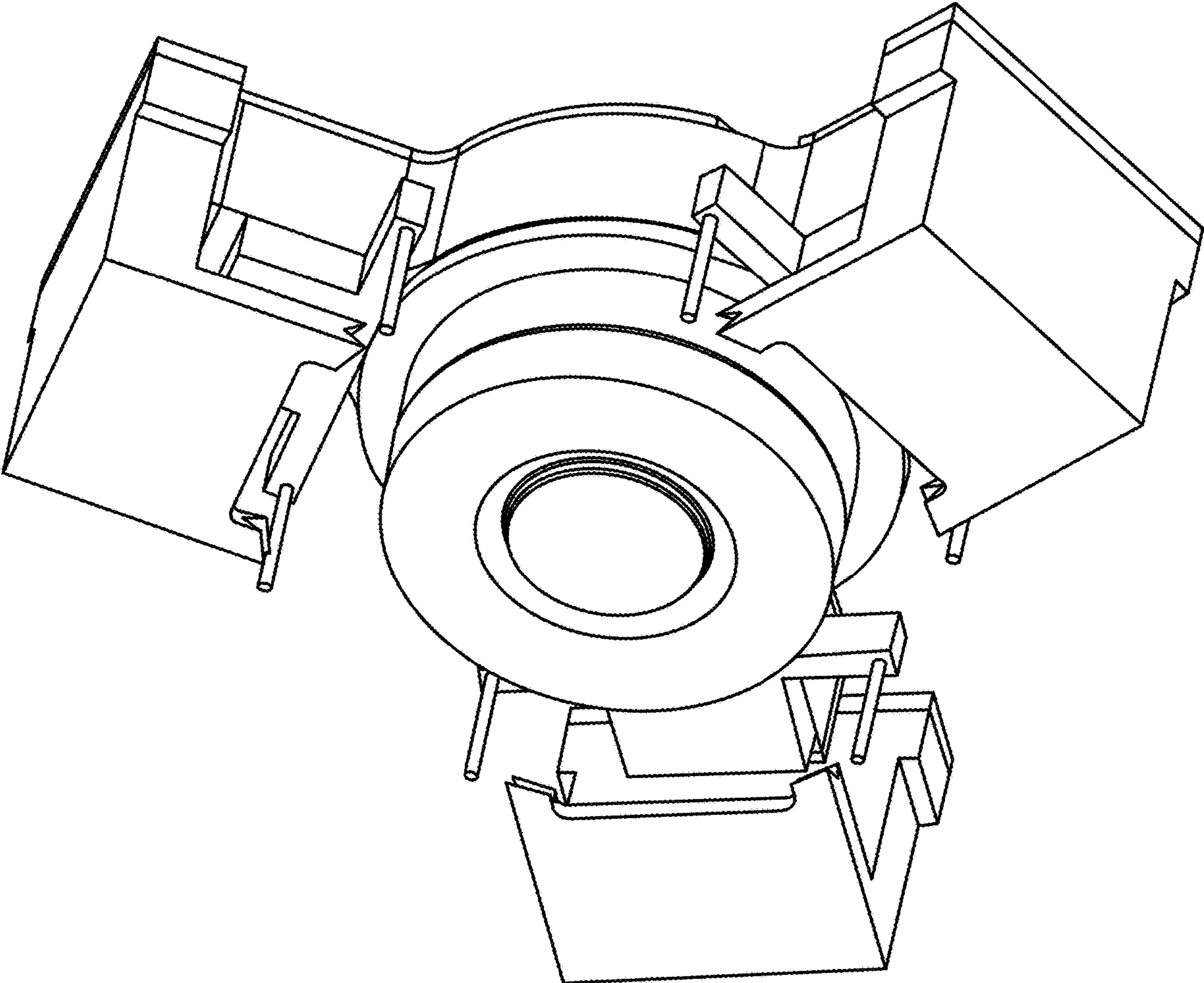


FIG. 30