



US00D988368S

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

(10) **Patent No.:** **US D988,368 S**  
(45) **Date of Patent:** **\*\* Jun. 6, 2023**

(54) **BOOSTER REGULATOR**  
(71) Applicant: **SMC CORPORATION**, Tokyo (JP)  
(72) Inventors: **Youji Takakuwa**, Saitama-ken (JP);  
**Kengo Monden**, Ushiku (JP);  
**Kazutaka Someya**, Kashiwa (JP)  
(73) Assignee: **SMC CORPORATION**, Tokyo (JP)

D554,164 S \* 10/2007 Naruse ..... D15/143  
D572,272 S 7/2008 Igarashi et al.  
D626,968 S 11/2010 Iwata et al.  
(Continued)

(\*\*) Term: **15 Years**  
(21) Appl. No.: **29/761,728**  
(22) Filed: **Dec. 11, 2020**

**FOREIGN PATENT DOCUMENTS**

CN 305308373 S 8/2019

**OTHER PUBLICATIONS**

SCM, Web Catalog Booster Regulators, (site visited Feb. 22, 2023),  
SCM world website, URL:<<https://www.smcworld.com/webcatalog/en-jp/modular-fil-units-pressure-control-equipment/booster-regulators/VBA-AS-E/#detail>> (Year: 2023).\*  
(Continued)

(30) **Foreign Application Priority Data**

Jun. 25, 2020 (JP) ..... 2020-012746 D

(51) **LOC (14) Cl.** ..... **15-02**  
(52) **U.S. Cl.**  
USPC ..... **D15/7**

(58) **Field of Classification Search**  
USPC ..... D15/5, 7, 9, 143; D23/235, 249, 499  
CPC ..... F02D 35/023; F02D 41/008; F02D  
2200/0406; F15B 15/149; F15B 15/1428;  
F15B 15/1438; F15B 15/1447; F15B  
15/1457; F15B 15/1461  
See application file for complete search history.

*Primary Examiner* — Calvin E Vansant  
*Assistant Examiner* — Mark T. Philipps  
(74) *Attorney, Agent, or Firm* — Birch, Stewart, Kolasch  
& Birch, LLP

(57) **CLAIM**

The ornamental design for a booster regulator, as shown and described.

**DESCRIPTION**

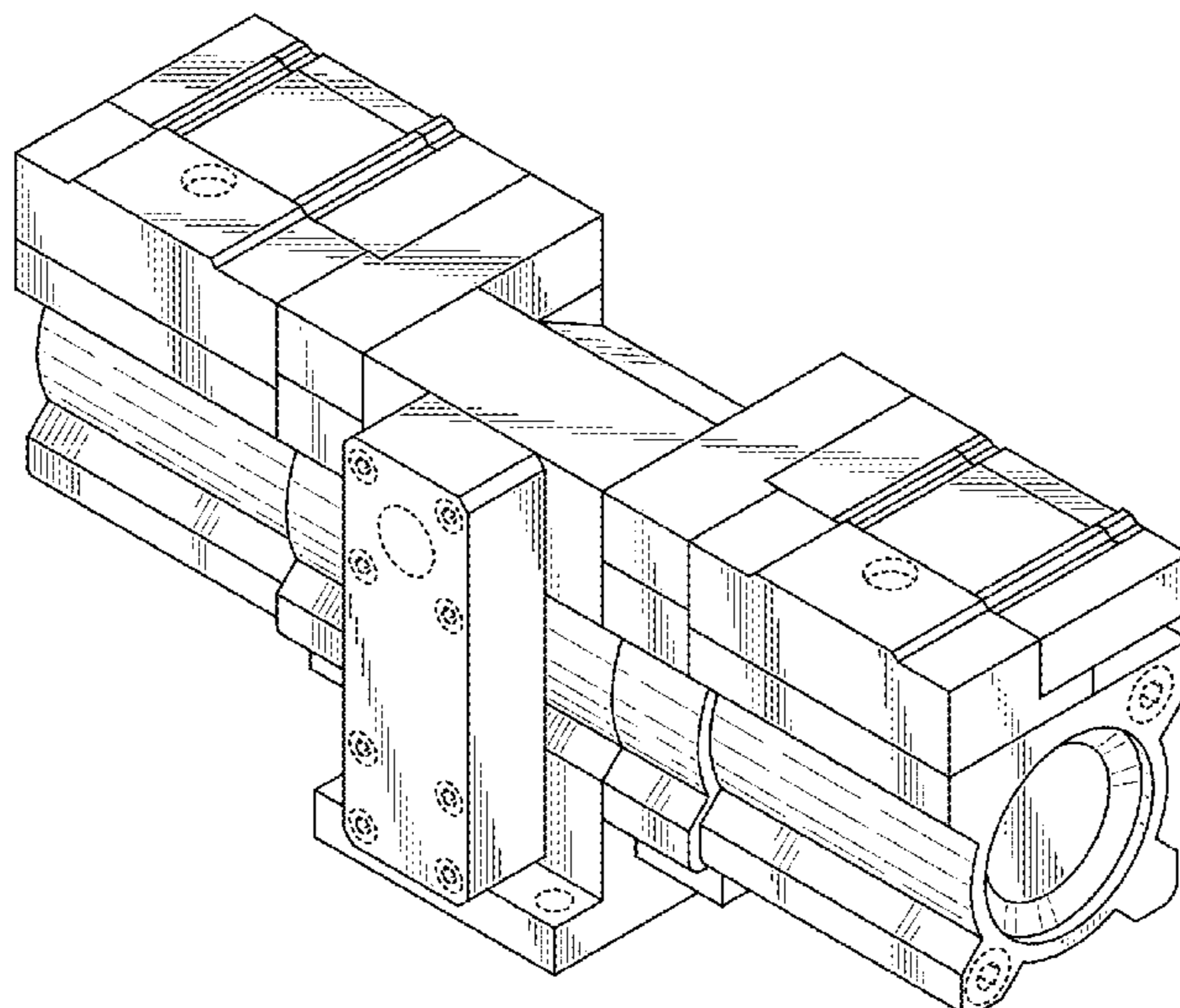
FIG. 1 is a front, top and right side perspective view of a booster regulator showing our new design;  
FIG. 2 is a rear, top and left side perspective view thereof;  
FIG. 3 is a rear, bottom and left side perspective view thereof;  
FIG. 4 is a front view thereof;  
FIG. 5 is a rear view thereof;  
FIG. 6 is a top plan view thereof;  
FIG. 7 is a bottom plan view thereof;  
FIG. 8 is a left side view thereof; and,  
FIG. 9 is a right side view thereof.  
The broken lines depict portions of the booster regulator that form no part of the claimed design.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D317,922 S \* 7/1991 Toyoda ..... D15/5  
D329,434 S \* 9/1992 Toyoda ..... D15/5  
D332,268 S \* 1/1993 Cook ..... D15/7  
D365,352 S \* 12/1995 Miyamoto ..... D15/199  
D373,363 S \* 9/1996 Miyachi ..... D15/7  
D380,217 S \* 6/1997 Jermeay ..... D15/7  
D399,830 S \* 10/1998 Nagai ..... D13/199  
D413,129 S \* 8/1999 Nagai ..... D15/199  
D422,075 S \* 3/2000 Hakuta ..... D23/499  
D429,737 S \* 8/2000 Kuan ..... D15/7  
D441,768 S \* 5/2001 Nagai ..... D15/7

**1 Claim, 9 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

D629,494 S 12/2010 Sato  
D689,525 S \* 9/2013 Peschel ..... D15/7  
D700,625 S \* 3/2014 Iwagoshi ..... D15/7  
D704,238 S \* 5/2014 Fukano ..... D15/199  
D792,916 S \* 7/2017 Kobayashi ..... D15/148  
D846,076 S \* 4/2019 Ezura ..... D23/235  
D888,774 S \* 6/2020 Asahara ..... D15/7  
D898,774 S \* 10/2020 Monden ..... D15/7  
D900,166 S \* 10/2020 Nemoto ..... D15/7  
D900,167 S \* 10/2020 Monden ..... D15/7  
D900,168 S \* 10/2020 Monden ..... D15/7  
D951,999 S \* 5/2022 Asahara ..... D15/7  
2021/0301838 A1 \* 9/2021 Takakuwa ..... F04B 9/133

OTHER PUBLICATIONS

SCM Corporation, VBA11A-F02 Booster Regulator, (first available Sep. 27, 2021), Amazon.com, URL:<<https://www.amazon.com/SMC-CORPORATION-VBA11A-F02-Regulator-Increase/dp/B09H6VMY6K>> (Year: 2021).\*

\* cited by examiner

FIG. 1

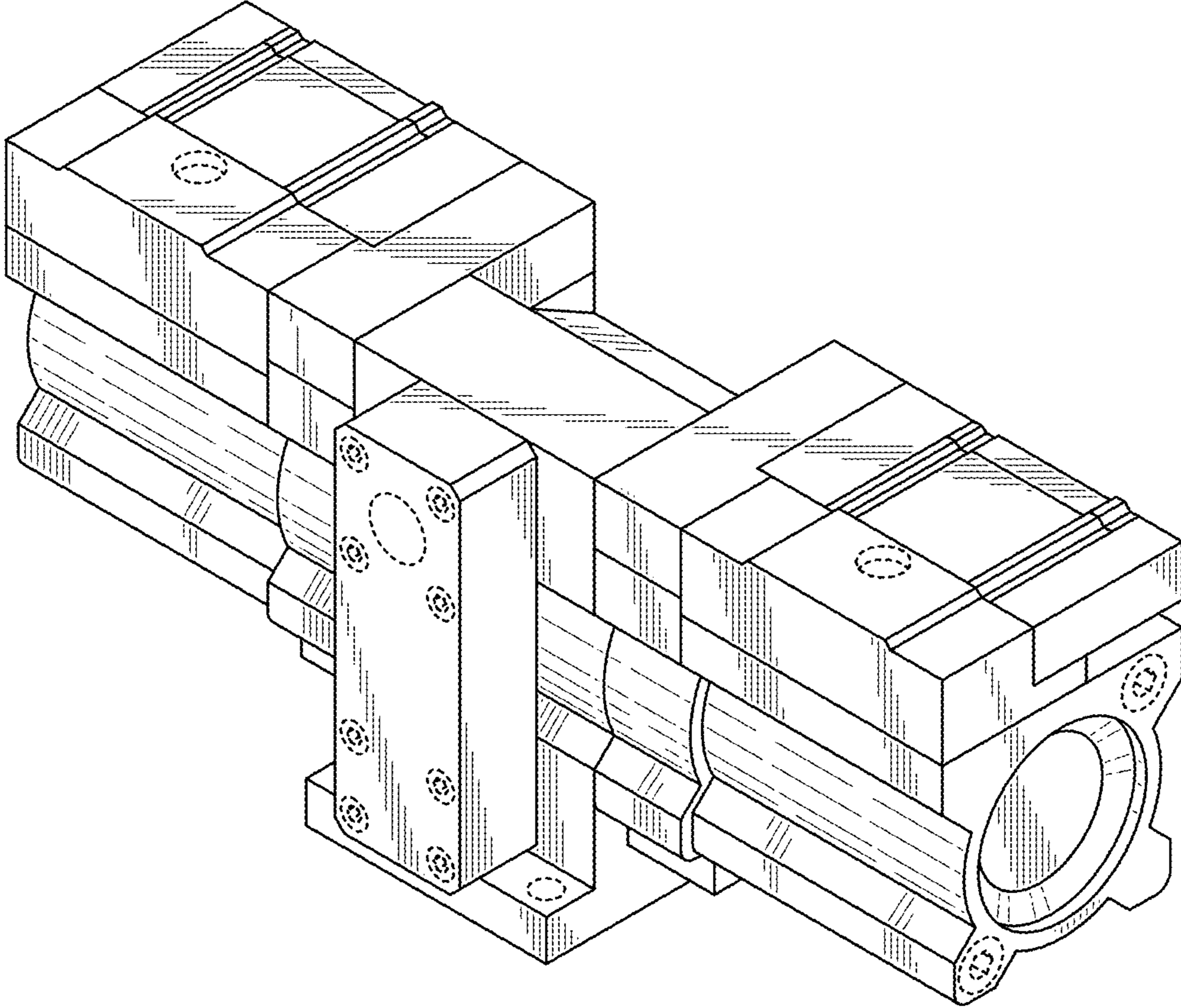




FIG. 2

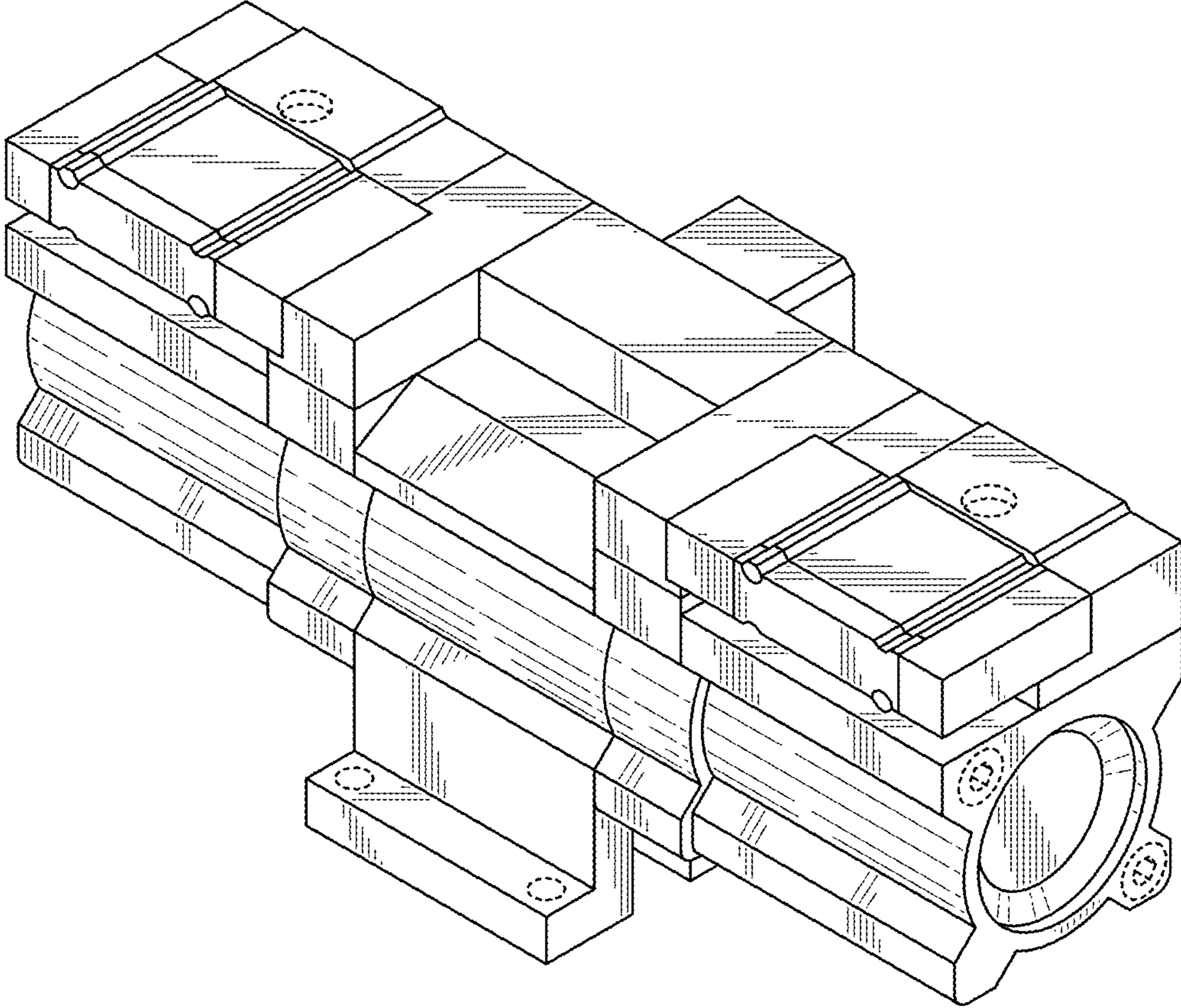


FIG. 3

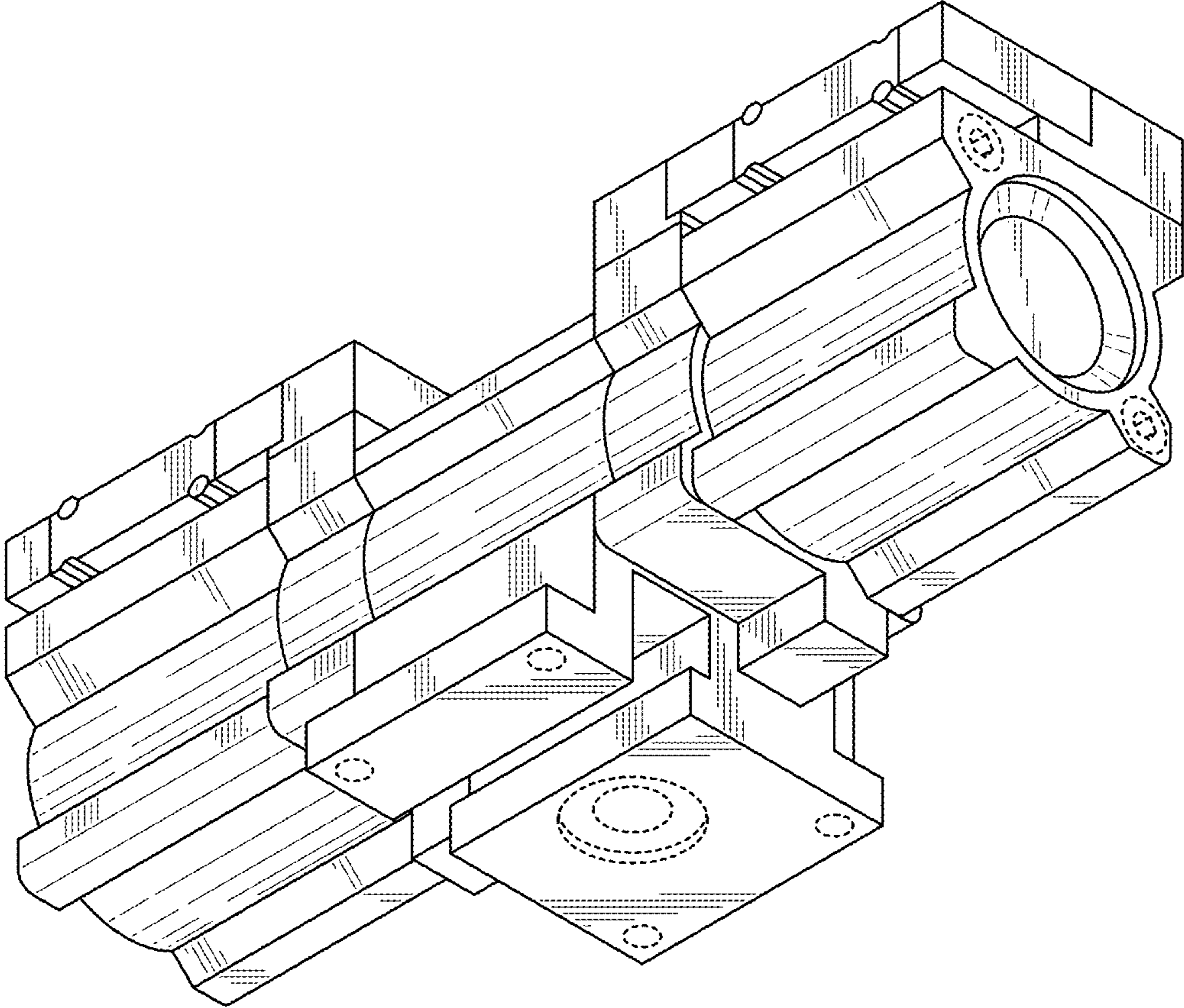


FIG. 4

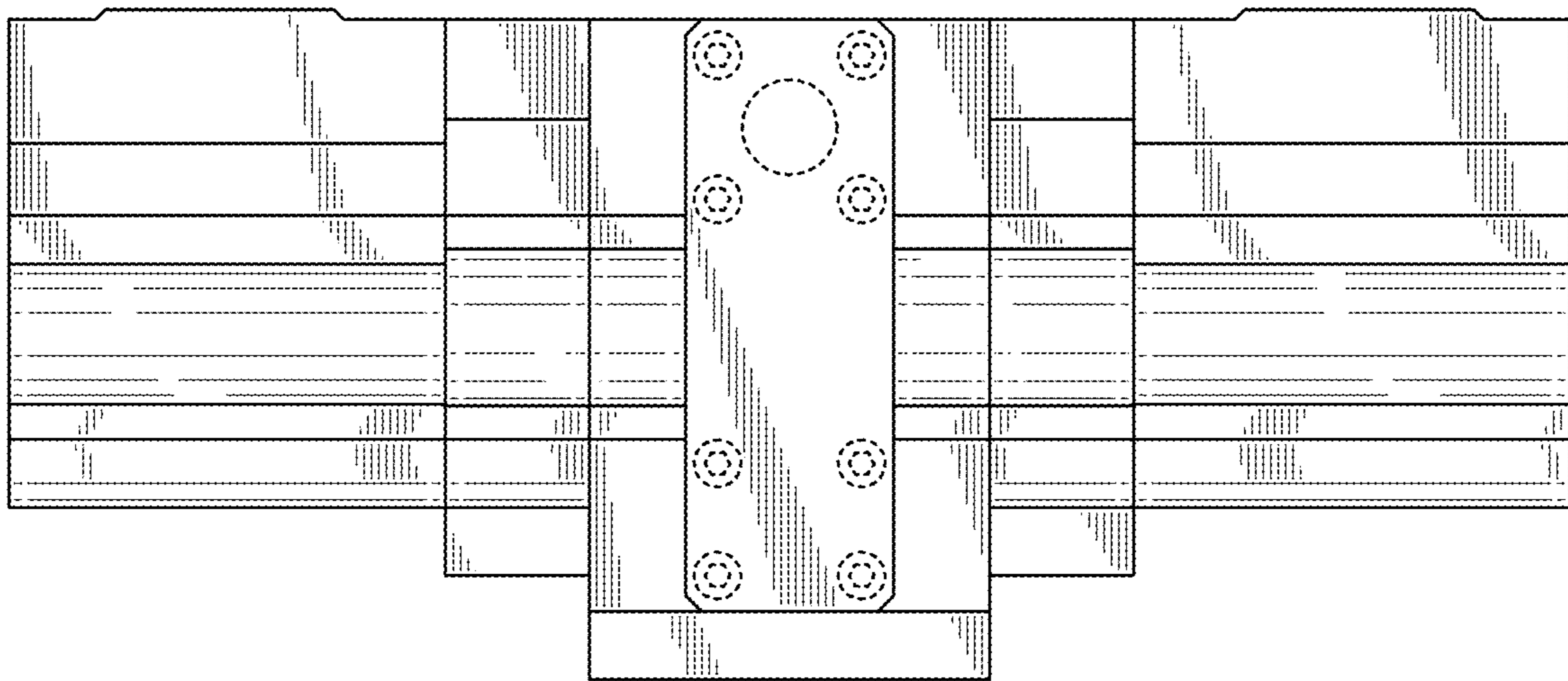


FIG. 5

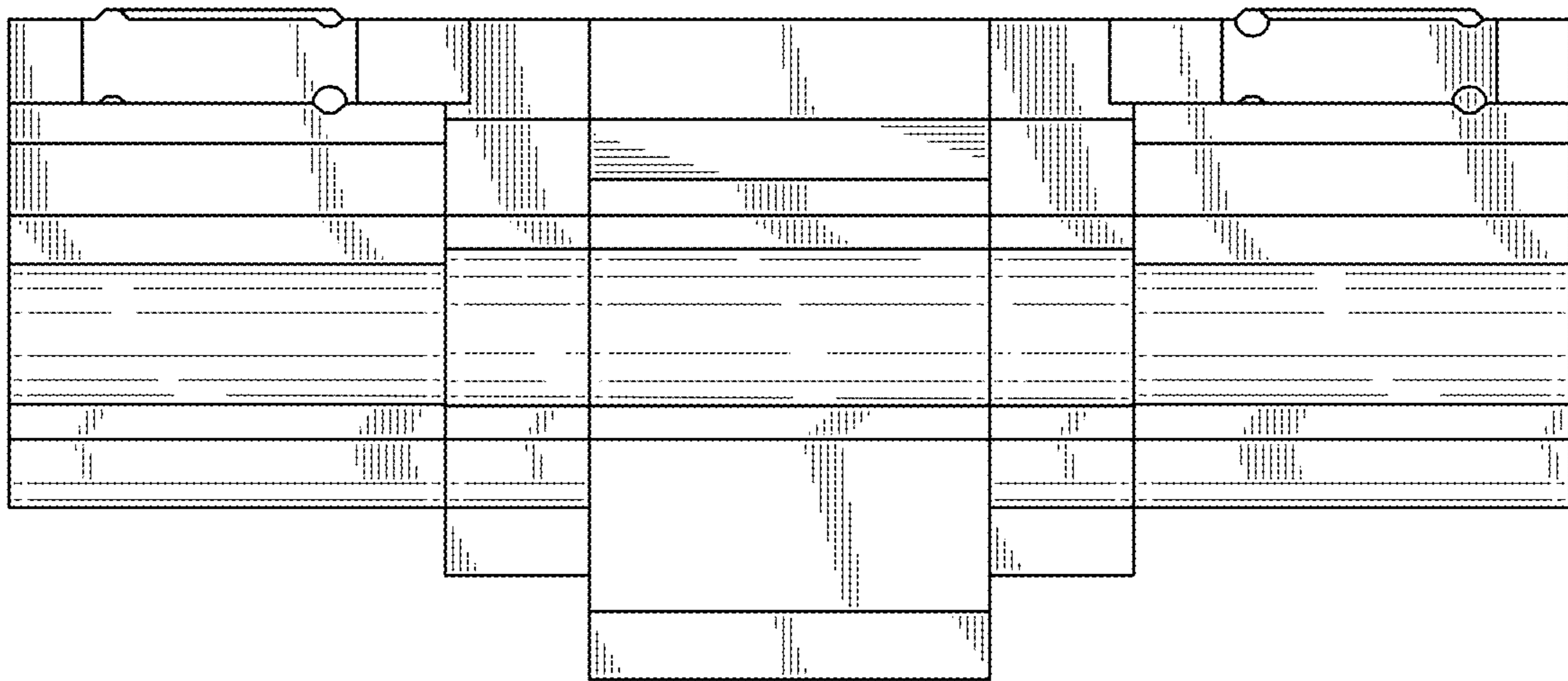


FIG. 6

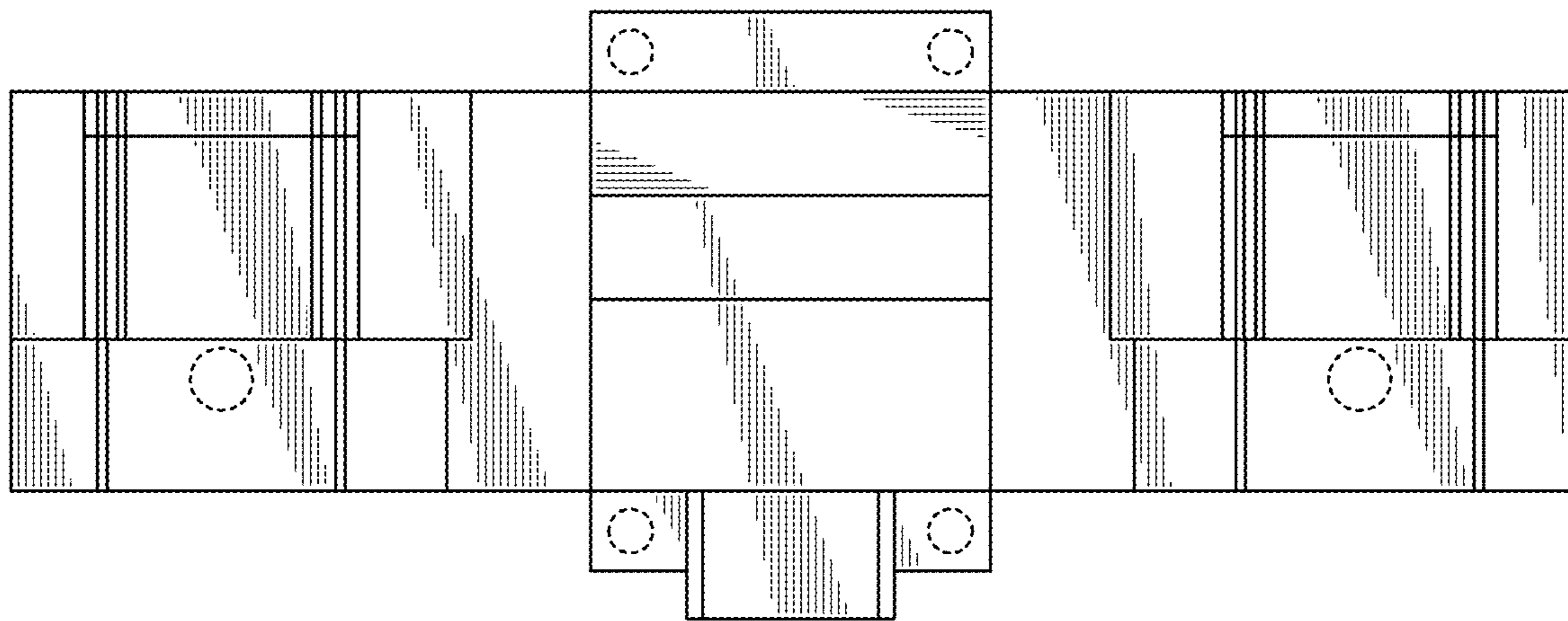




FIG. 7

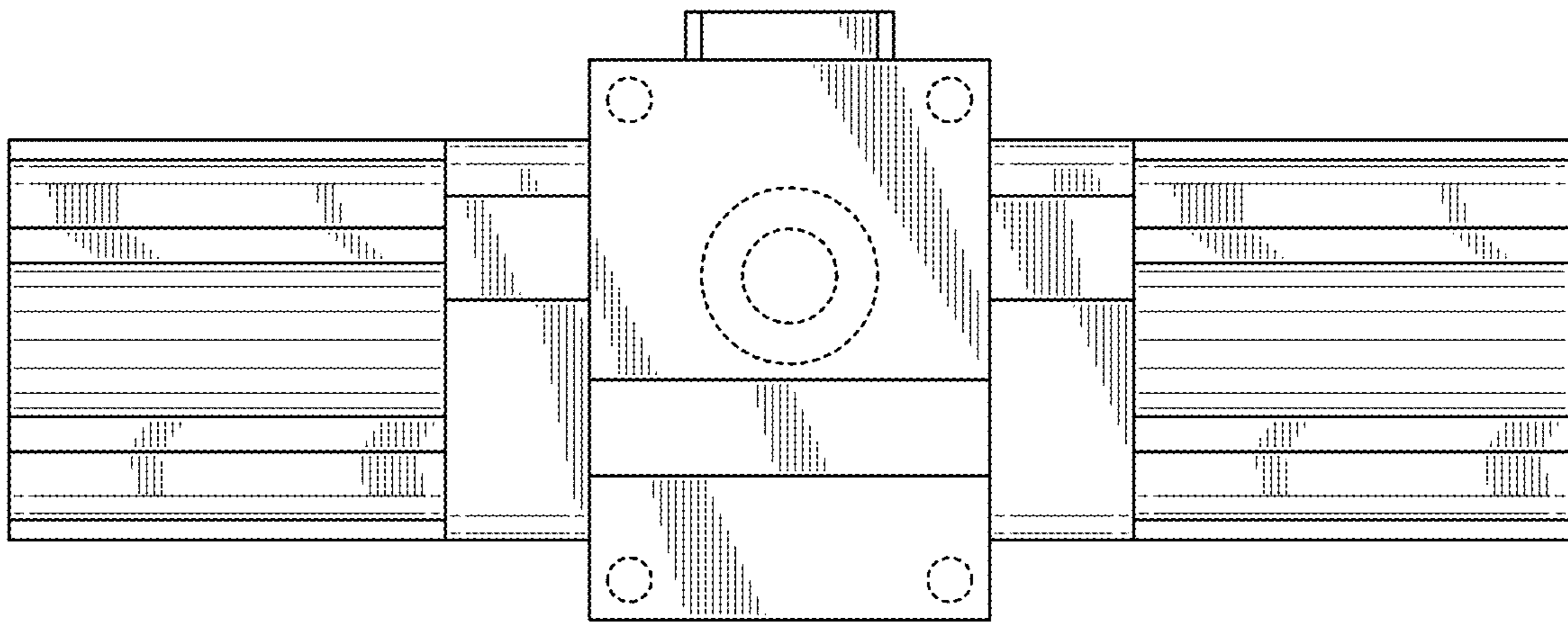


FIG. 8

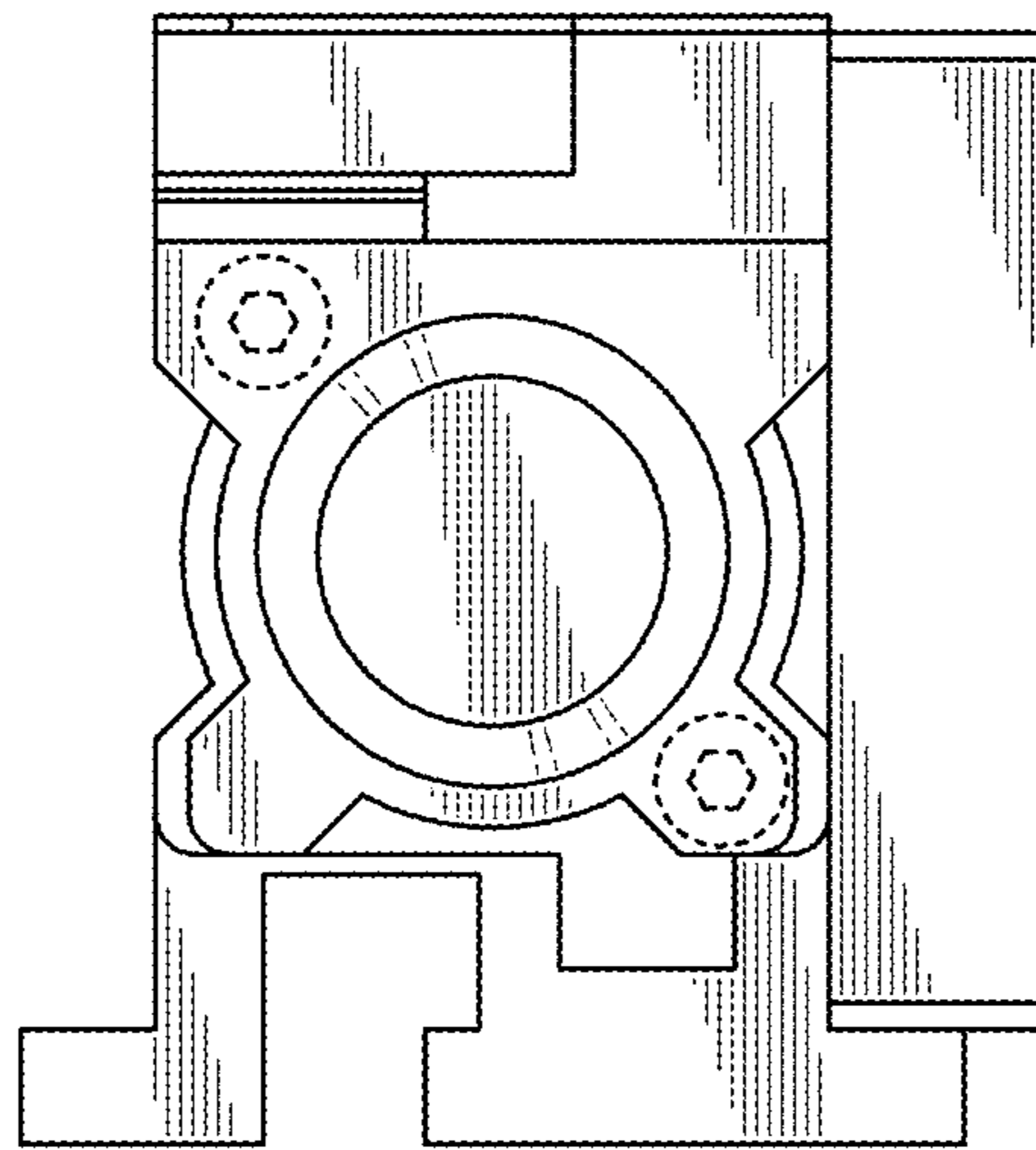


FIG. 9

