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

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(54) **ELECTRIC ROTARY GRIPPER**  
(71) Applicant: **SMC CORPORATION**, Tokyo (JP)  
(72) Inventors: **Hirofumi Watanabe**, Tsukuba (JP);  
**Shunya Kobayashi**, Tsukubamirai (JP)  
(73) Assignee: **SMC CORPORATION**, Tokyo (JP)  
(\*\*) Term: **15 Years**

D668,832 S \* 10/2012 Auf der Maur ..... D34/35  
D674,983 S \* 1/2013 Auf der Maur ..... D34/35  
D781,122 S \* 3/2017 Zimmerman ..... D8/72  
D782,274 S \* 3/2017 Herrick ..... D8/330  
D811,188 S \* 2/2018 Zimmerman ..... D8/72  
D811,189 S \* 2/2018 Zimmerman ..... D8/72  
9,912,130 B1 \* 3/2018 Burns ..... H05K 13/0491  
D819,101 S 5/2018 Ishikawa et al.  
9,956,691 B1 \* 5/2018 Pentzer ..... B25J 15/024  
D821,472 S 6/2018 Ishikawa et al.

(Continued)

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(58) **Field of Classification Search**  
USPC ..... D8/71-74; D15/138, 149, 199  
CPC ..... B25J 11/0045; B25J 13/086; B25J 15/08;  
B25J 15/024; B25J 15/026; B25J 15/028;  
B25J 15/0042; B25J 15/0475; B25J  
15/02262; B65G 47/90; H05K 13/02;  
Y10S 294/902; Y10S 294/907  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,607,873 A \* 8/1986 Nusbaumer ..... B25J 13/086  
294/106  
6,505,871 B2 \* 1/2003 McCormick ..... B25J 15/028  
294/119.1  
6,938,938 B2 \* 9/2005 Risle ..... B25J 15/0253  
294/119.1  
D588,431 S \* 3/2009 Fukano ..... D8/72  
D590,686 S \* 4/2009 Fukano ..... D8/72  
D609,546 S \* 2/2010 Fukano ..... D8/72

**FOREIGN PATENT DOCUMENTS**

DE 3014140 A1 \* 10/1980 ..... B21L 1/02  
DE 10218236 C1 \* 8/2003 ..... B23Q 7/046

(Continued)

*Primary Examiner* — Patricia A Palasik

(74) *Attorney, Agent, or Firm* — Birch, Stewart, Kolasch  
& Birch, LLP

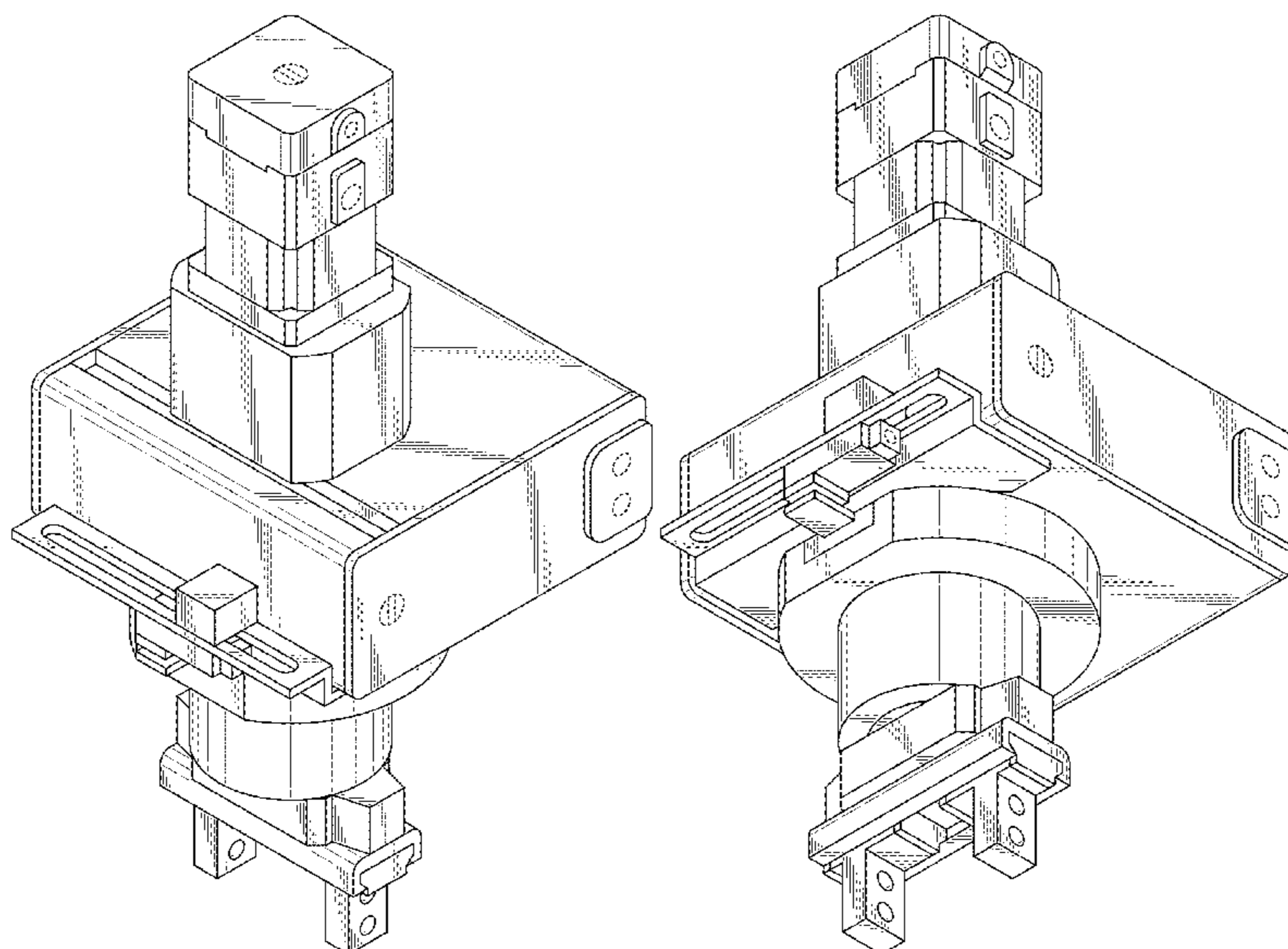
(57) **CLAIM**

The ornamental design for an electric rotary gripper, as  
shown and described.

**DESCRIPTION**

FIG. 1 is a front, top and right side perspective view of an  
electric rotary gripper showing our new design;  
FIG. 2 is a front, bottom and right 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 electric rotary  
grripper that form no part of the claimed design.

**1 Claim, 9 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

D827,677 S \* 9/2018 Zimmerman ..... D15/28  
D846,012 S 4/2019 Ishikawa et al.  
D846,611 S \* 4/2019 Chi ..... D15/144  
D876,919 S \* 3/2020 Sawada ..... D8/72  
D894,247 S \* 8/2020 Ishibashi ..... D15/199  
D900,182 S \* 10/2020 Haddadin ..... D15/199  
2001/0038175 A1 \* 11/2001 Nagai ..... B25B 5/122  
269/237  
2004/0070225 A1 \* 4/2004 Meinicke ..... G01N 35/0099  
294/86.4  
2004/0113343 A1 \* 6/2004 McIntosh ..... B25B 5/087  
269/32  
2018/0354130 A1 \* 12/2018 Preisinger ..... G05B 19/427

FOREIGN PATENT DOCUMENTS

DE 10349127 A1 \* 5/2005 ..... D05B 1/24  
JP D1604719 S 5/2018  
WO WO-9626813 A1 \* 9/1996 ..... B25J 15/0213

\* cited by examiner

FIG. 1

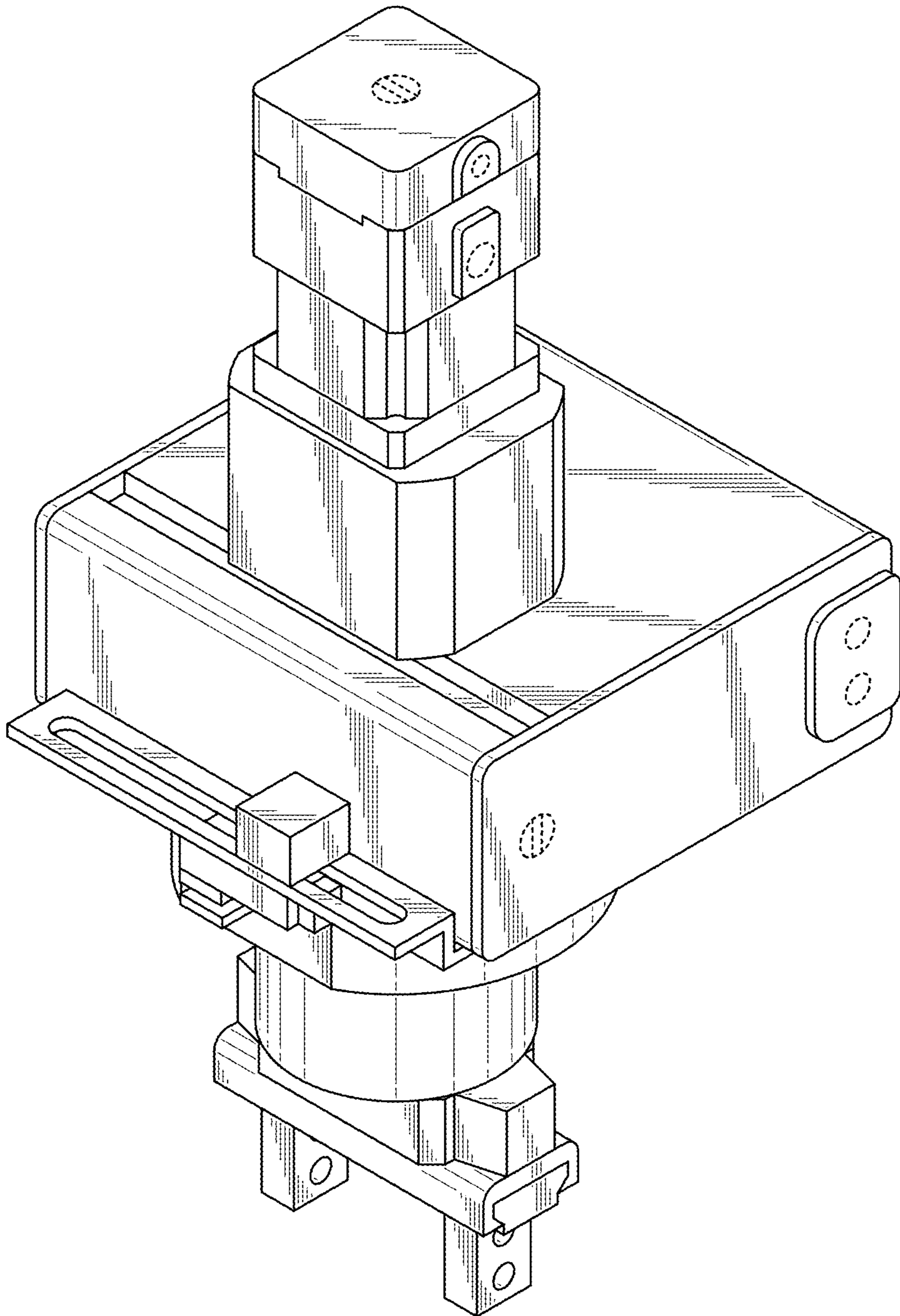




FIG. 2

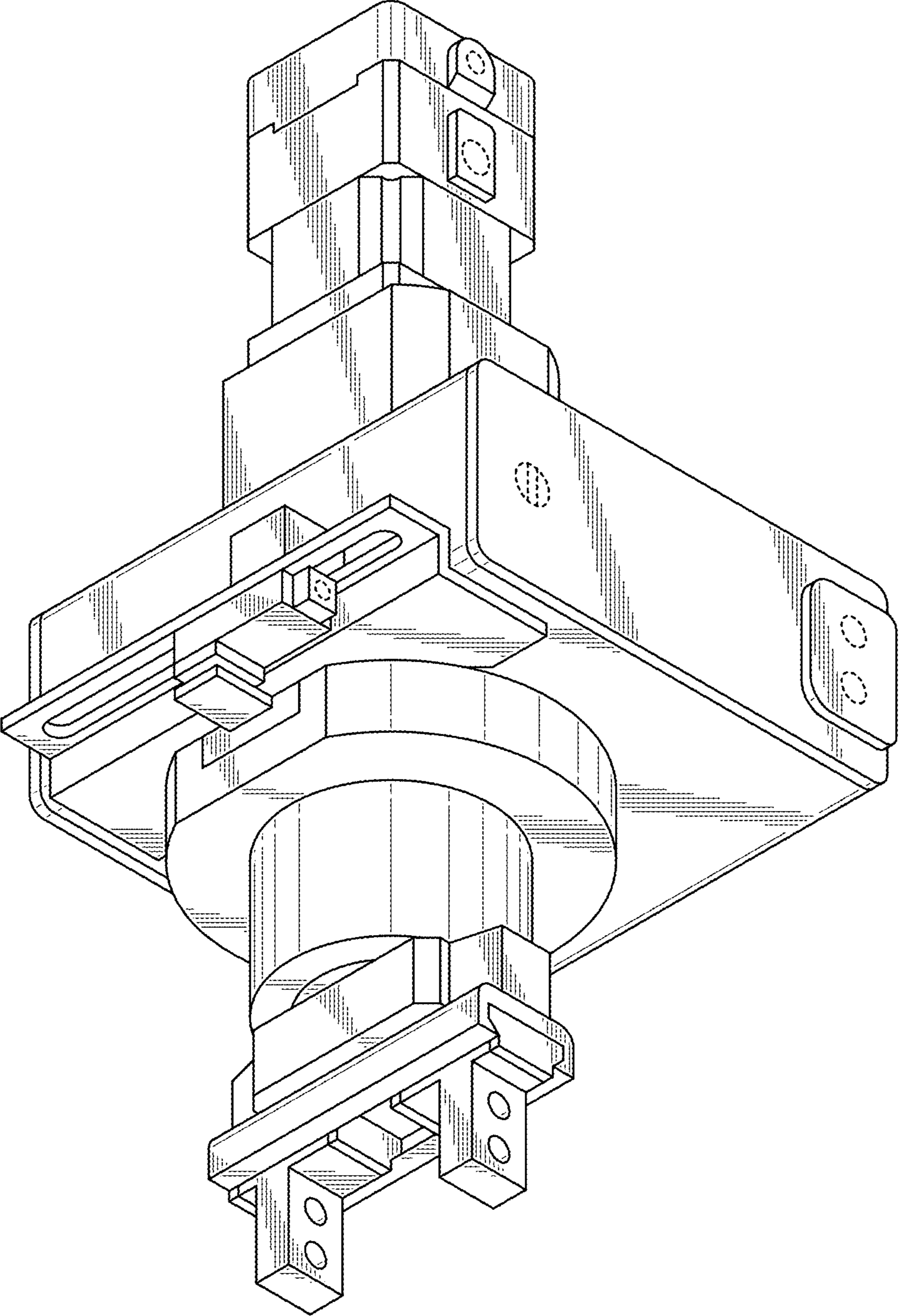


FIG. 3

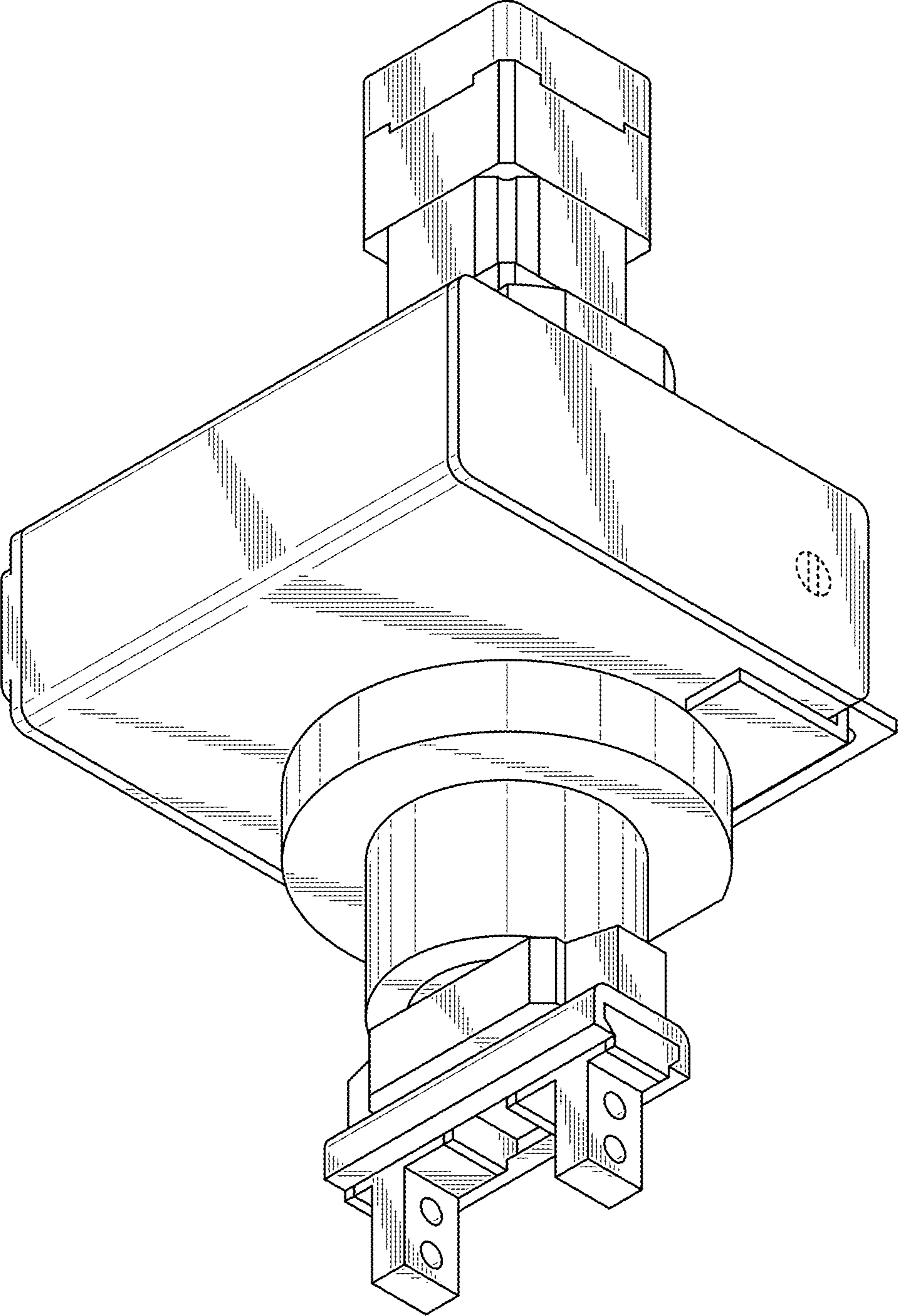




FIG. 5

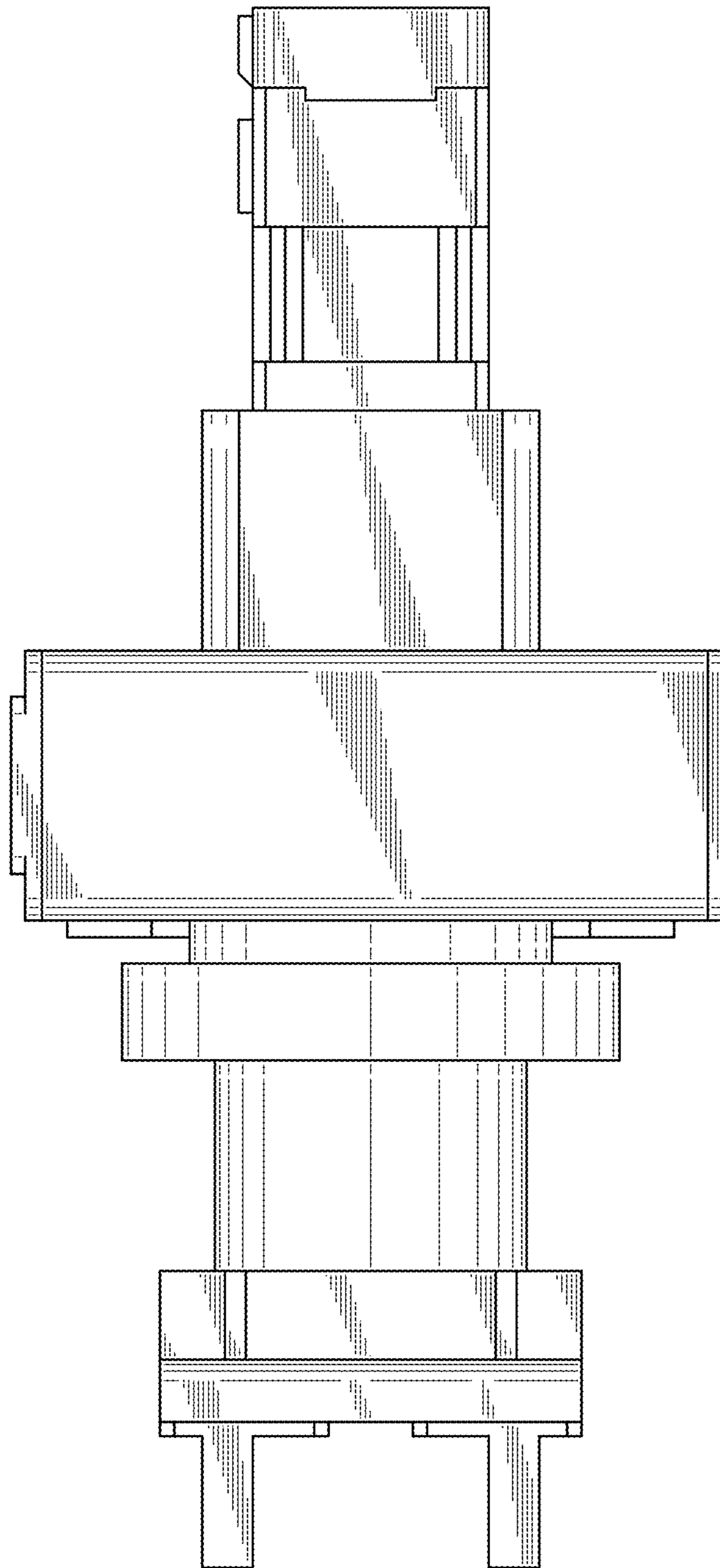


FIG. 6

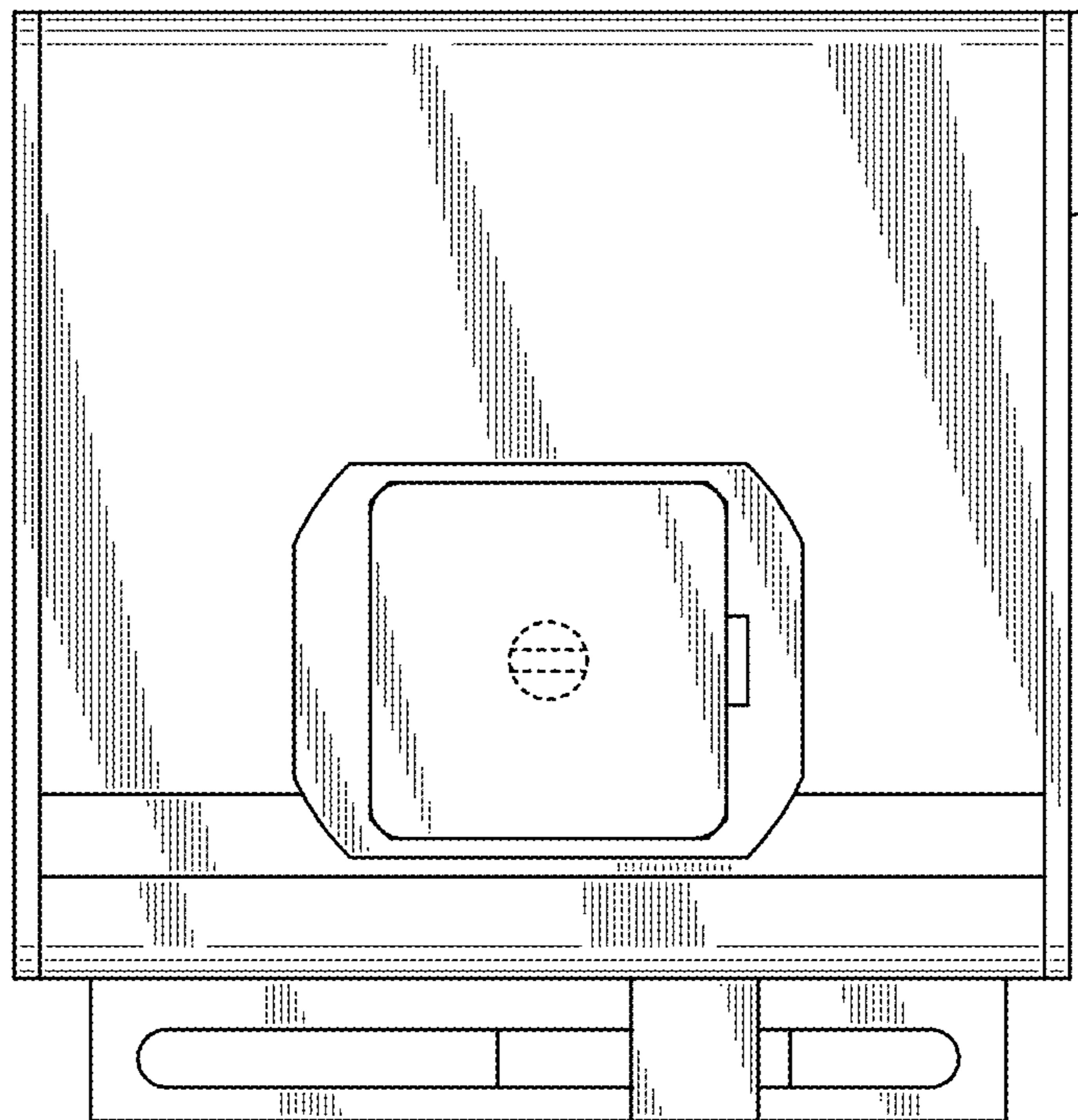




FIG. 7

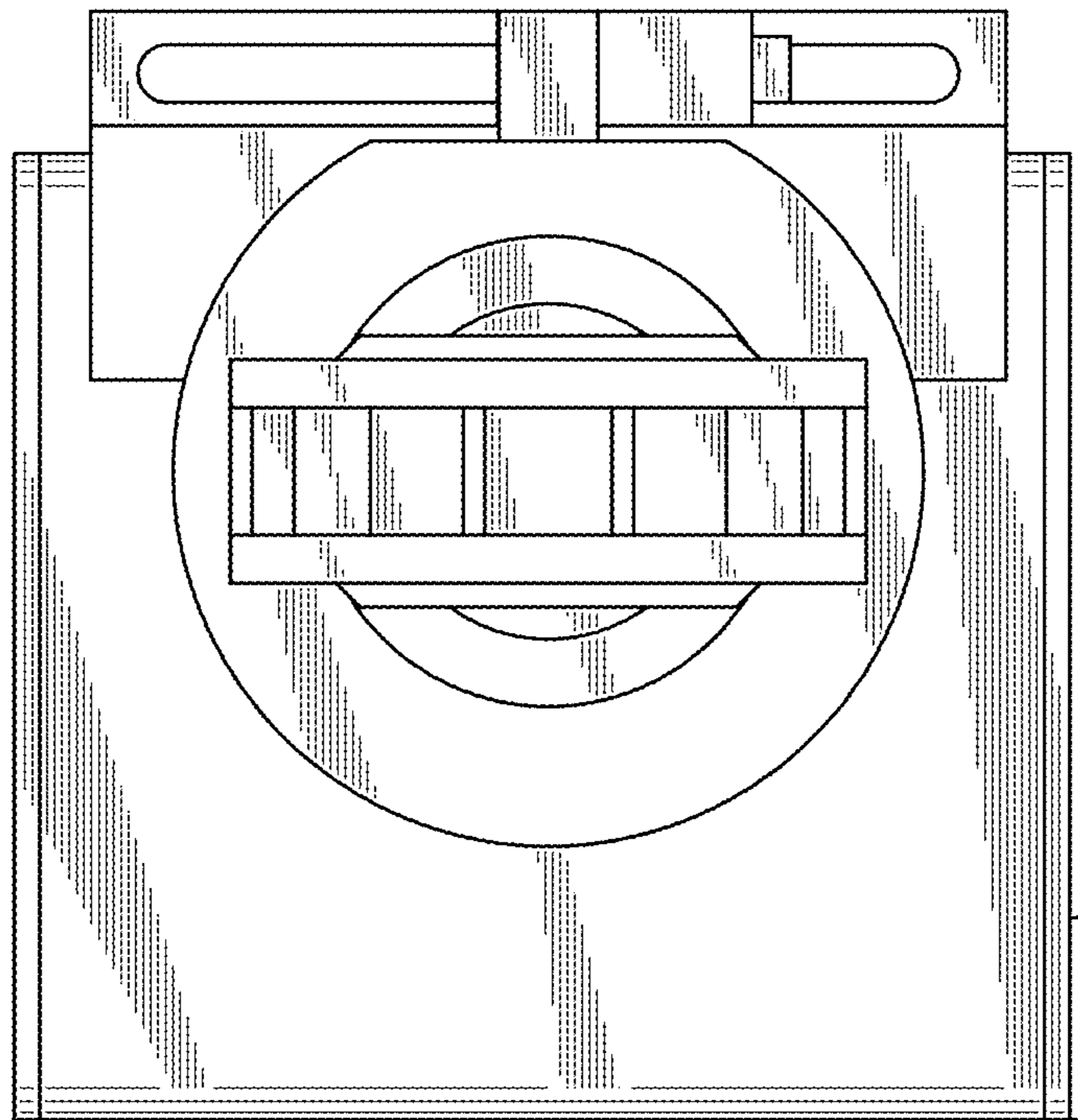


FIG. 8

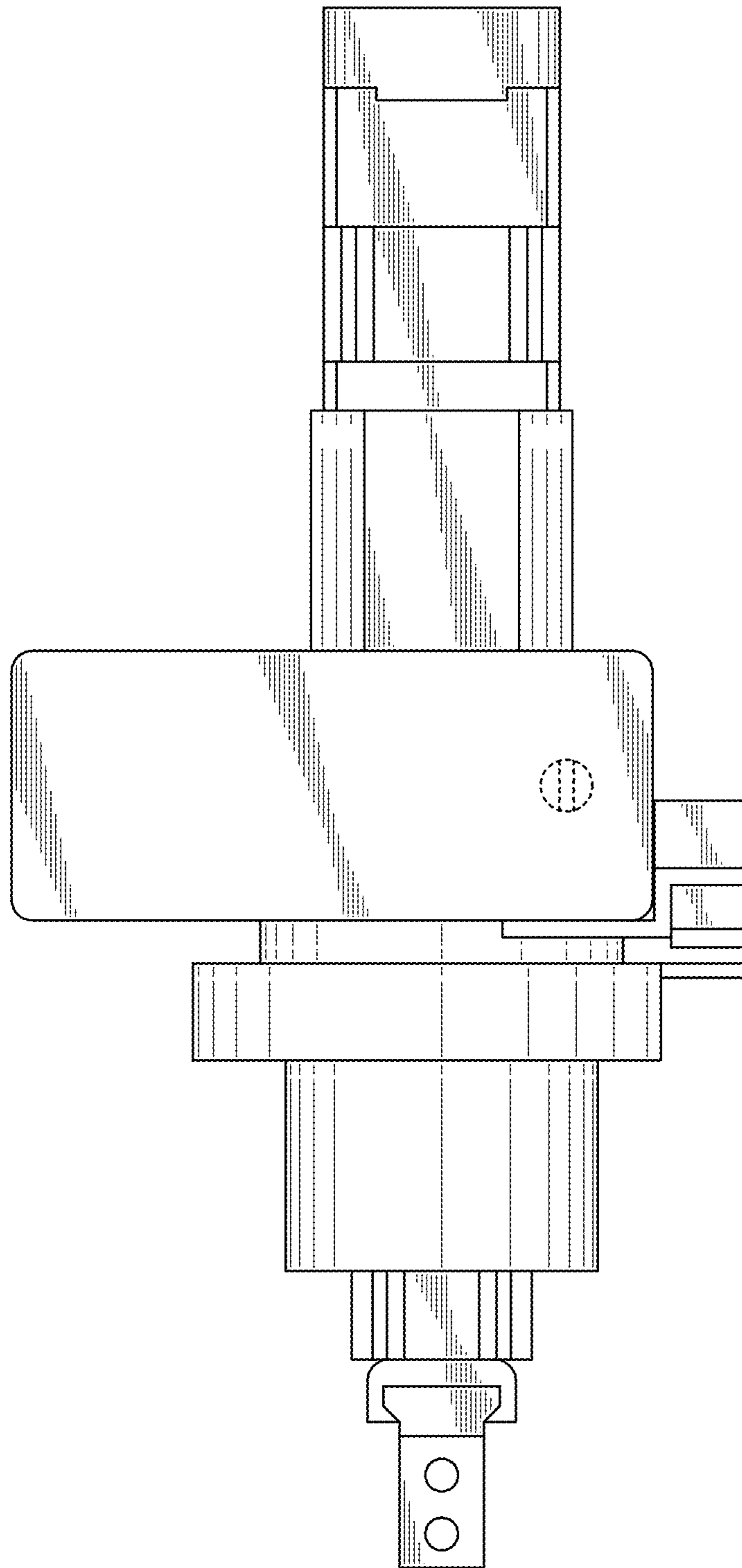


FIG. 9

