

US00D975135S

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

(10) **Patent No.:** **US D975,135 S**  
(45) **Date of Patent:** **\*\* Jan. 10, 2023**

(54) **SEAL PLATE FOR ROTARY MACHINE**

(71) Applicant: **Mitsubishi Hitachi Power Systems, Ltd.**, Yokohama (JP)  
(72) Inventors: **Masahiro Murata**, Yokohama (JP); **Eiichi Tsutsumi**, Yokohama (JP)  
(73) Assignee: **MITSUBISHI HEAVY INDUSTRIES, LTD.**, Tokyo (JP)

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/670,869**

(22) Filed: **Nov. 20, 2018**

(30) **Foreign Application Priority Data**

May 23, 2018 (JP) ..... 2018-011233  
May 23, 2018 (JP) ..... 2018-011234  
May 23, 2018 (JP) ..... 2018-011235

(51) **LOC (14) Cl.** ..... **15-01**

(52) **U.S. Cl.**  
USPC ..... **D15/5; D15/138**

(58) **Field of Classification Search**  
USPC ..... D15/5, 138; D13/101, 112-115, 118, D13/122, 184  
CPC ..... F01D 11/00; F01D 11/006; F01D 5/081; F01D 5/3015; F01D 5/326  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D55,628 S \* 7/1920 Mason ..... D15/5  
D59,397 S \* 10/1921 Wilson ..... D15/5  
RE16,093 E \* 6/1925 Wilson ..... D15/143  
(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 1944472 A1 7/2008  
FR 3020407 A1 10/2015  
(Continued)

**OTHER PUBLICATIONS**

International Search Report and Written Opinion, dated Mar. 6, 2018, issued in International Application No. PCT/JP2017/044653 (14 pages; w/ English translation of ISR).

(Continued)

*Primary Examiner* — Michael C Stout  
*Assistant Examiner* — Fritzgerald L Butac  
(74) *Attorney, Agent, or Firm* — WHDA, LLP

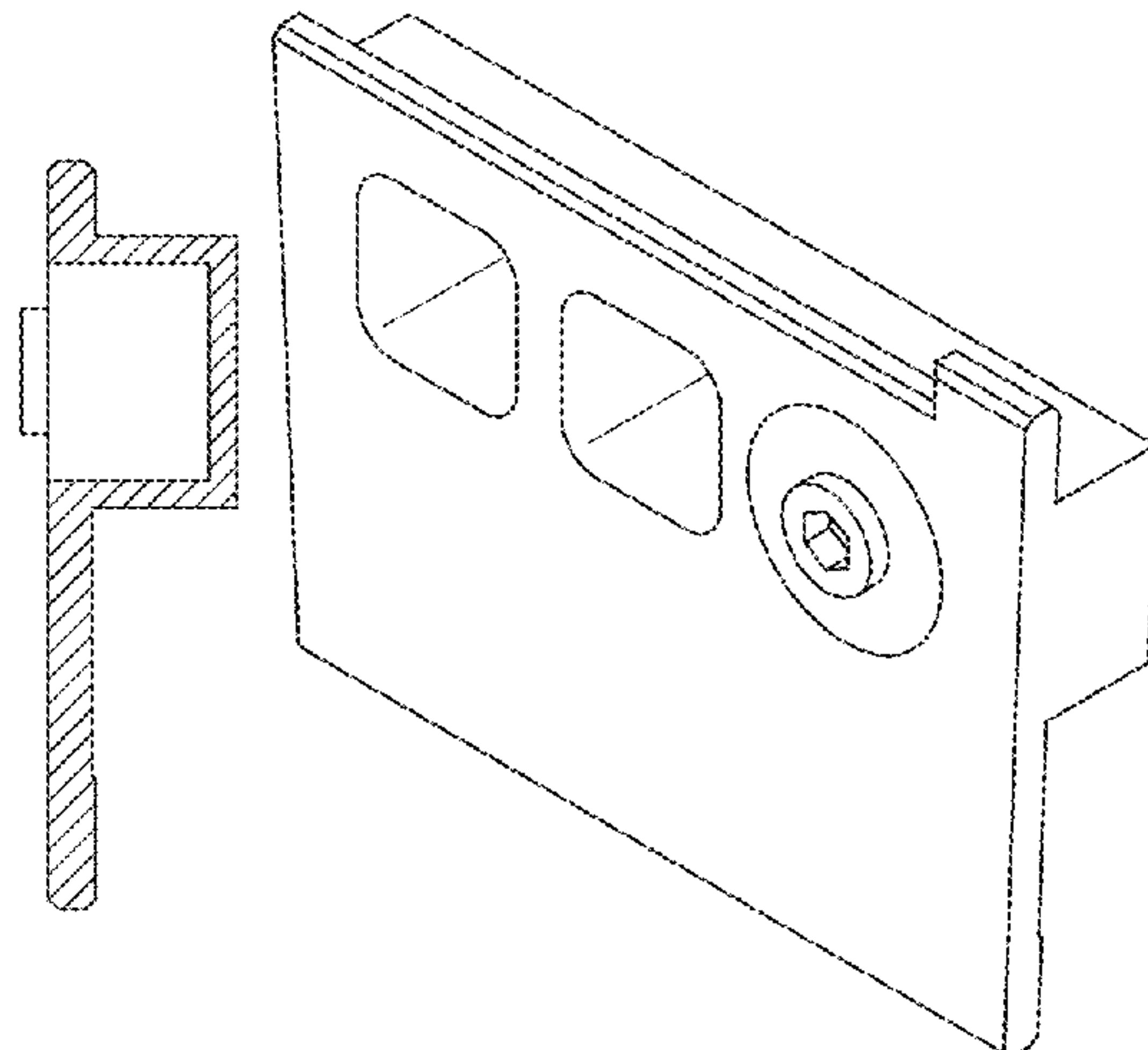
(57) **CLAIM**

The ornament design for a seal plate for rotary machine, as shown and described.

**DESCRIPTION**

FIG. 1 is a front view of a seal plate for rotary machine according to a first embodiment of our new design.  
FIG. 2 is a rear view thereof.  
FIG. 3 is a left side view thereof.  
FIG. 4 is a right side view thereof.  
FIG. 5 is a top view thereof.  
FIG. 6 is a bottom view thereof.  
FIG. 7 is a perspective view thereof.  
FIG. 8 is a cross-section view taken along line 8-8 in FIG. 1.  
FIG. 9 is a cross-section view taken along line 9-9 in FIG. 1.  
FIG. 10 is a front view of a seal plate for rotary machine according to a second embodiment of our new design.  
FIG. 11 is a rear view thereof.  
FIG. 12 is a left side view thereof.  
FIG. 13 is a right side view thereof.  
FIG. 14 is a top view thereof.  
FIG. 15 is a bottom view thereof; and,  
FIG. 16 is a perspective view thereof.

**1 Claim, 16 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

3,501,249 A \* 3/1970 Scalzo ..... F01D 5/081  
416/193 A  
3,572,966 A \* 3/1971 Borden ..... F01D 5/081  
415/177  
3,748,060 A \* 7/1973 Hugoson ..... F01D 5/3015  
416/193 A  
D243,714 S \* 3/1977 Younger ..... D15/5  
4,279,572 A \* 7/1981 Auriemma ..... F01D 5/323  
416/220 R  
D353,768 S \* 12/1994 Hayes ..... D9/439  
D390,825 S \* 2/1998 Chen ..... D13/184  
D516,088 S \* 2/2006 Kortyna ..... D15/7  
D556,214 S \* 11/2007 Fretwell ..... D15/5  
D628,607 S \* 12/2010 Irion ..... D15/138  
D841,695 S \* 2/2019 Pirollo ..... D15/5  
D875,682 S \* 2/2020 Joutsiniemi ..... D13/115  
D917,587 S \* 4/2021 Sauter ..... D15/138  
D934,929 S \* 11/2021 Kremerman ..... D15/138  
D940,212 S \* 1/2022 Meron ..... D15/138  
2006/0073021 A1 \* 4/2006 Garner ..... F01D 5/323  
416/220 R  
2008/0008593 A1 \* 1/2008 Zagar ..... F01D 5/3015  
416/220 R  
2008/0173062 A1 \* 7/2008 Brucher ..... B21D 39/02  
29/889.22  
2013/0294927 A1 \* 11/2013 Dimmick, III ..... F01D 11/006  
29/525.01  
2015/0369062 A1 \* 12/2015 Tanaka ..... F01D 5/081  
29/889.21

FOREIGN PATENT DOCUMENTS

GB 2258273 A 2/1993  
JP S46-11683 B1 3/1971  
JP S48-37530 A 6/1973  
JP S48-25686 B1 7/1973  
JP S61-51406 U 4/1986  
JP 2007-32282 A 2/2007  
JP 2008-106765 A 5/2008  
JP 2013-234659 A 11/2013  
JP 2014-185552 A 10/2014  
WO 2014/148566 A1 9/2014  
WO 2015/129580 A1 9/2015

OTHER PUBLICATIONS

International Search Report and Written Opinion, dated Jan. 23,  
2018, issued in International Application No. PCT/JP2017/044657  
(19 pages; w/ English translation of ISR).  
International Search Report and Written Opinion, dated Jan. 30,  
2018, issued in International Application No. PCT/JP2017/044664  
(11 pages; w/ English translation of ISR).  
\* cited by examiner

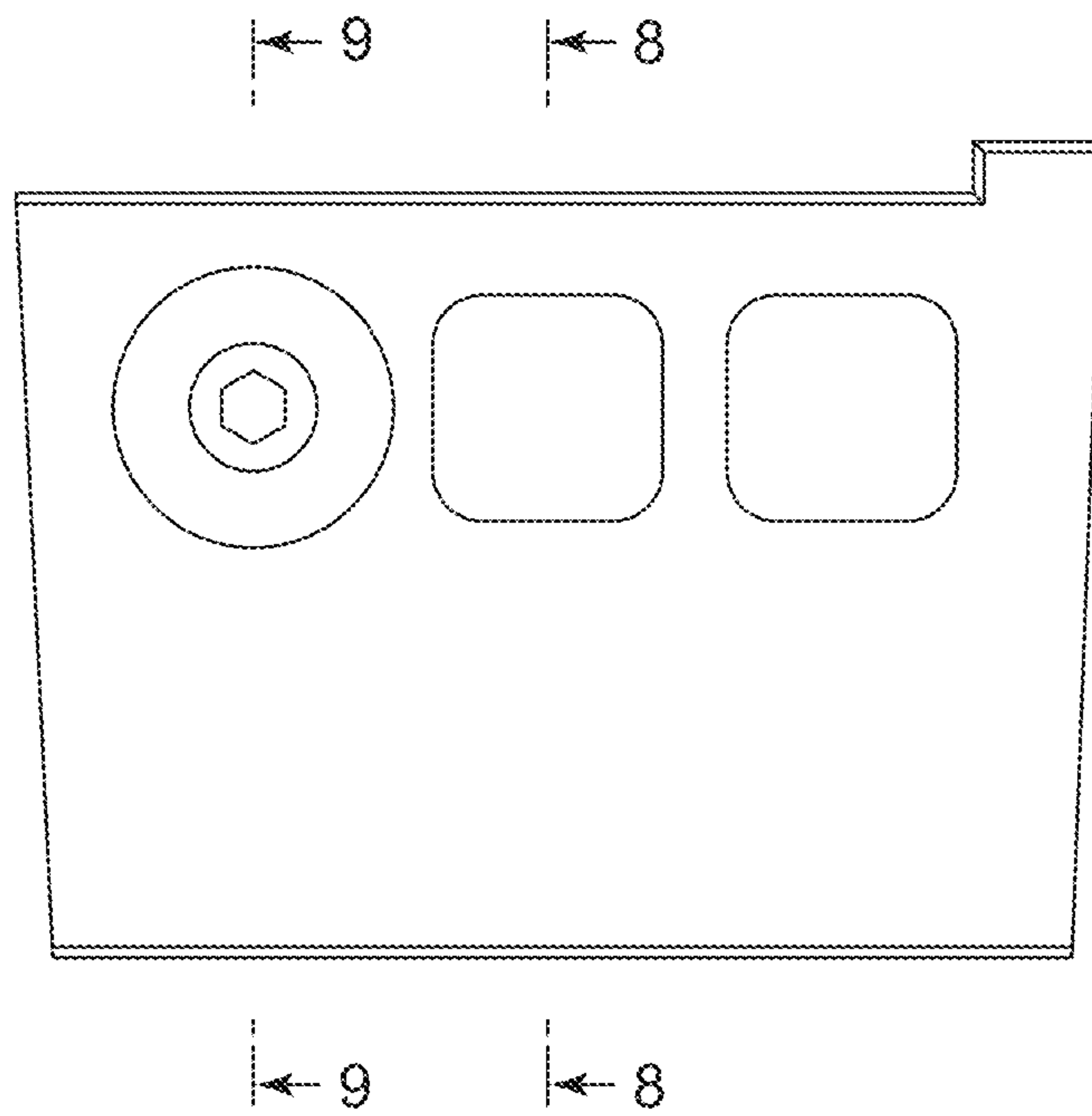


FIG. 1

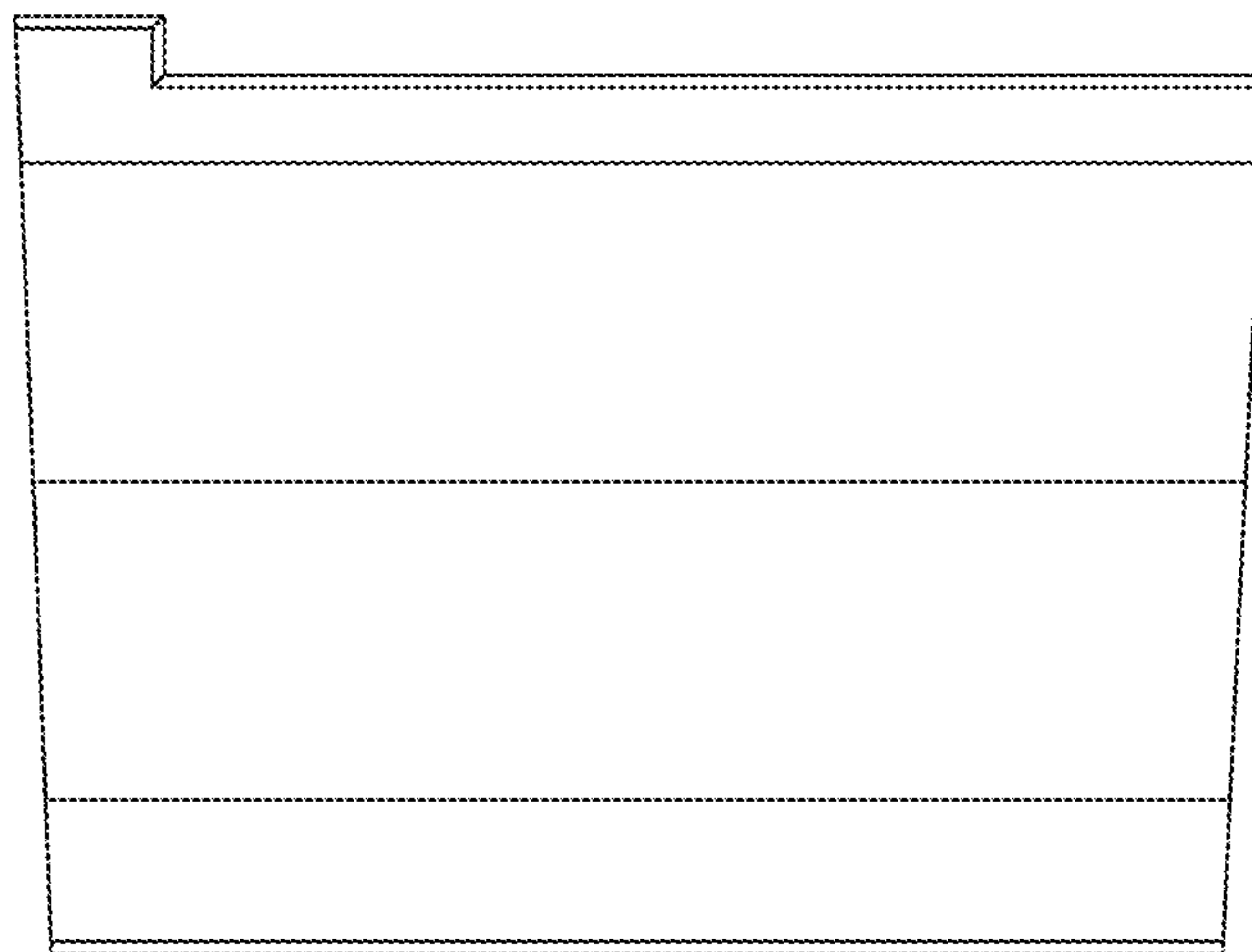


FIG. 2

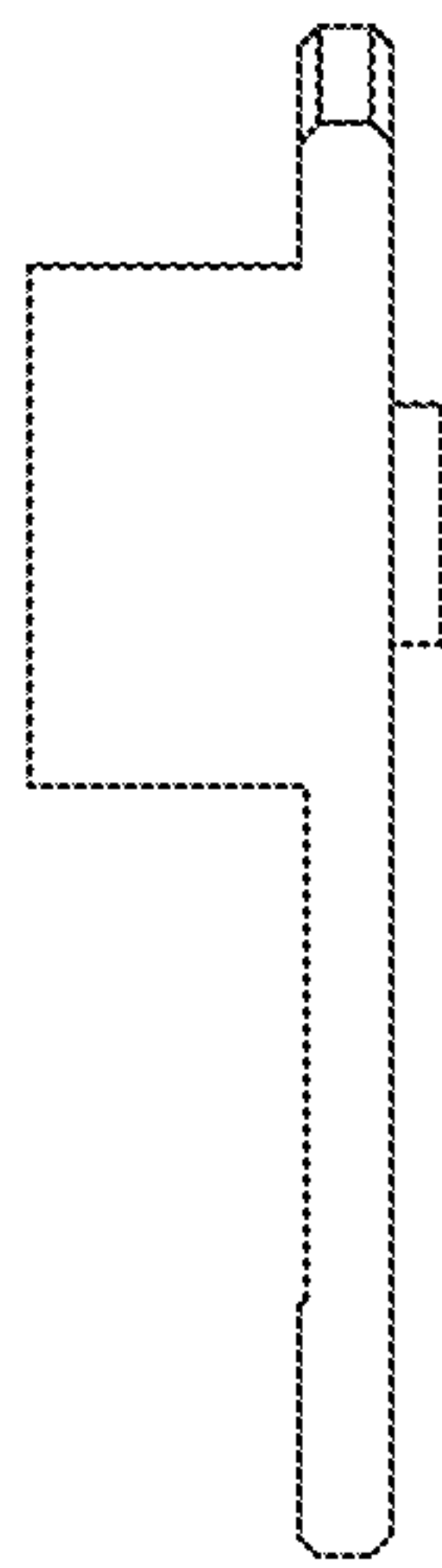


FIG. 3

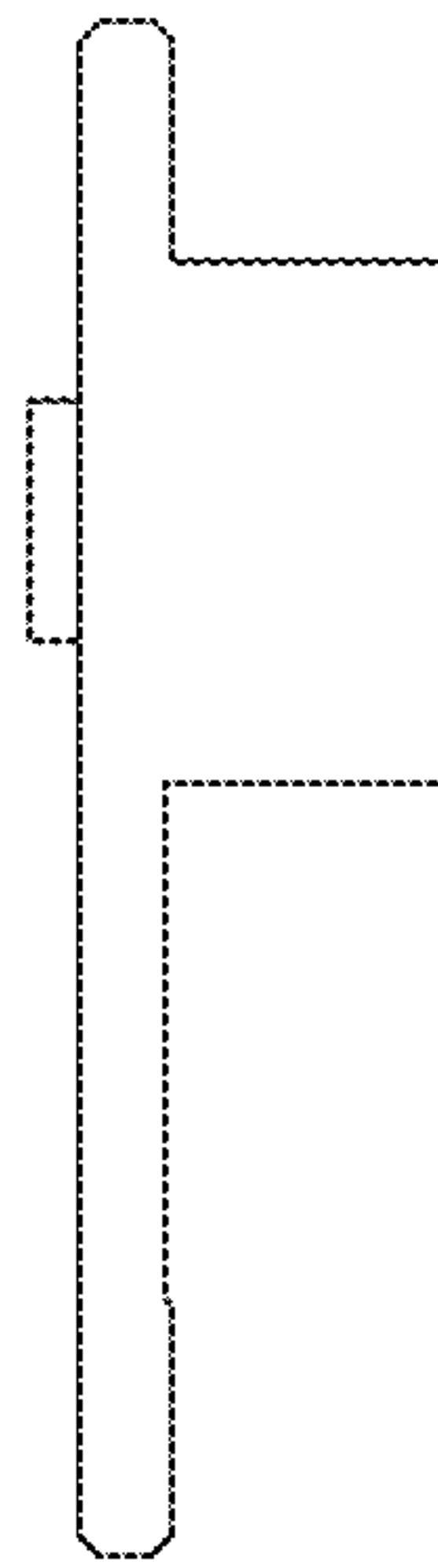


FIG. 4

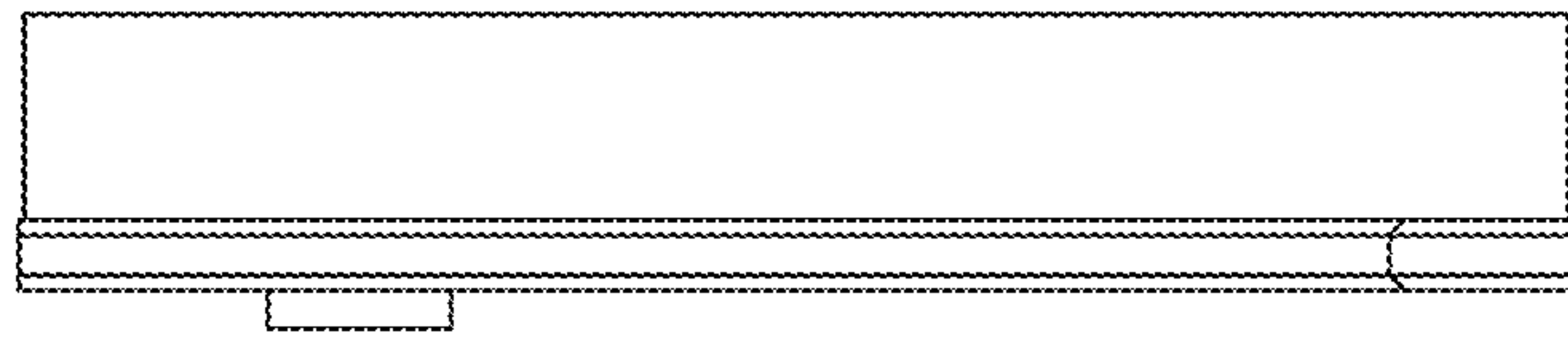


FIG. 5

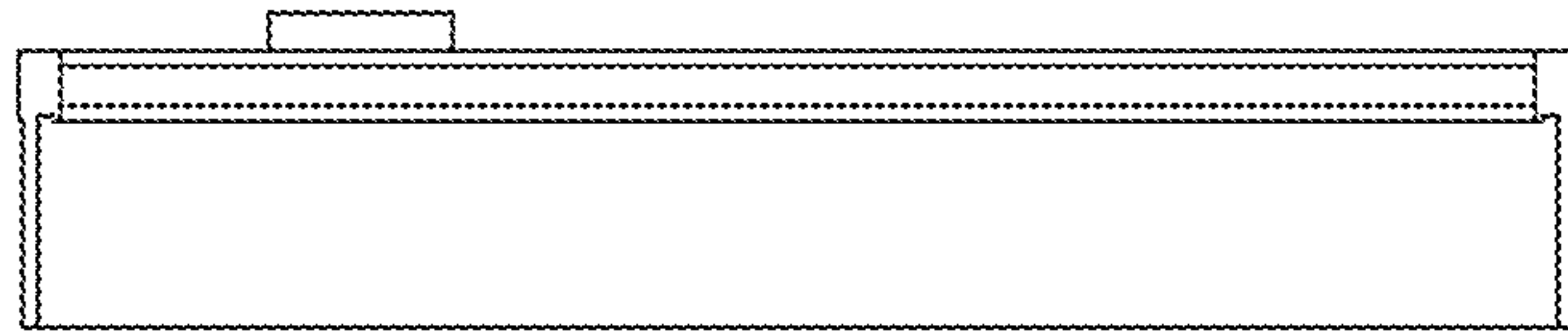


FIG. 6



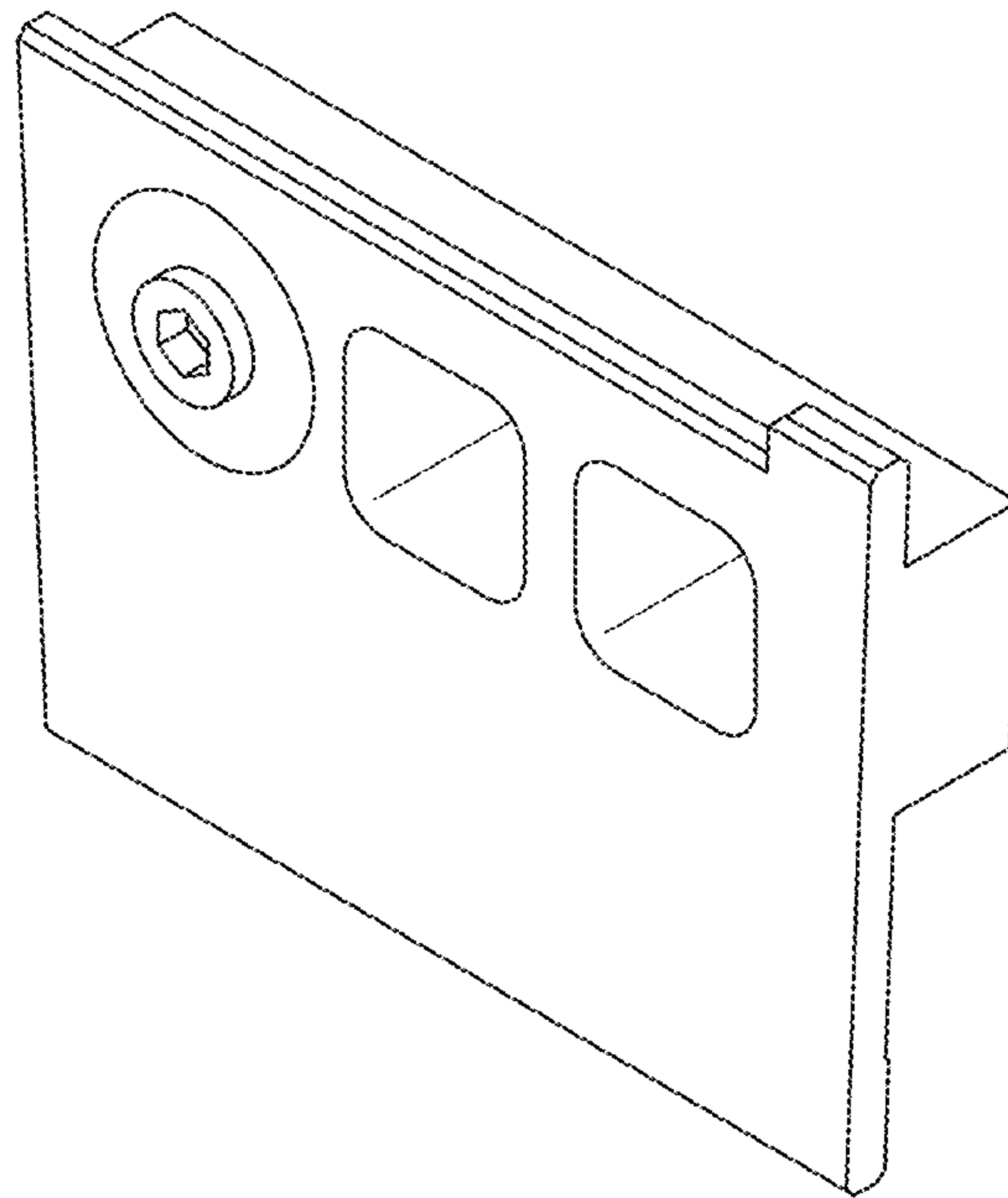


FIG. 7

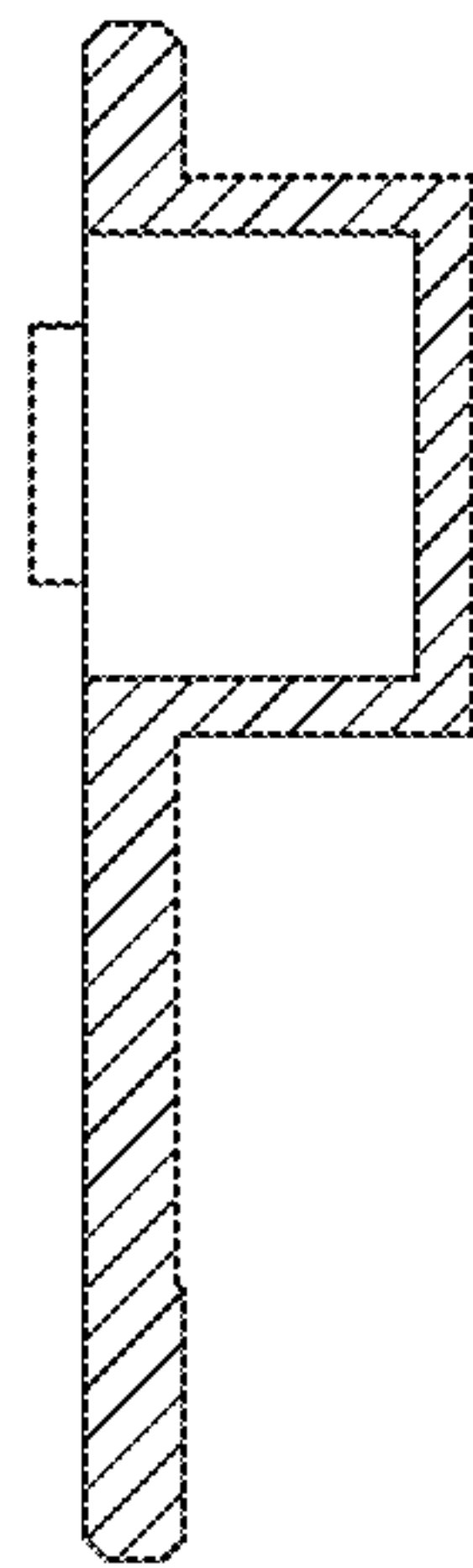


FIG. 8

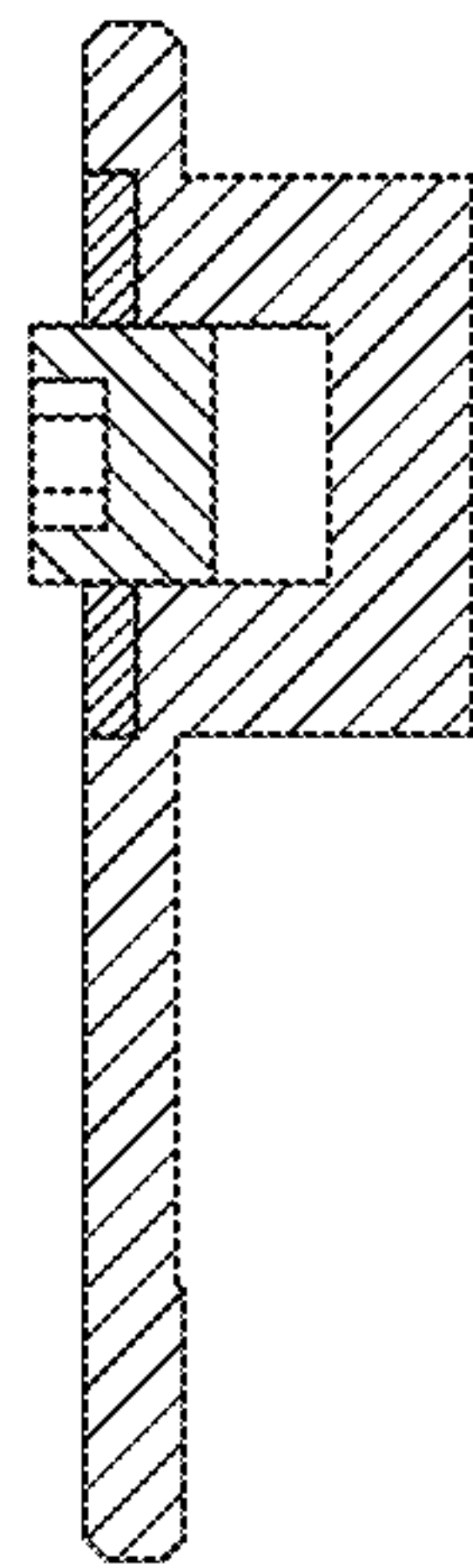


FIG. 9

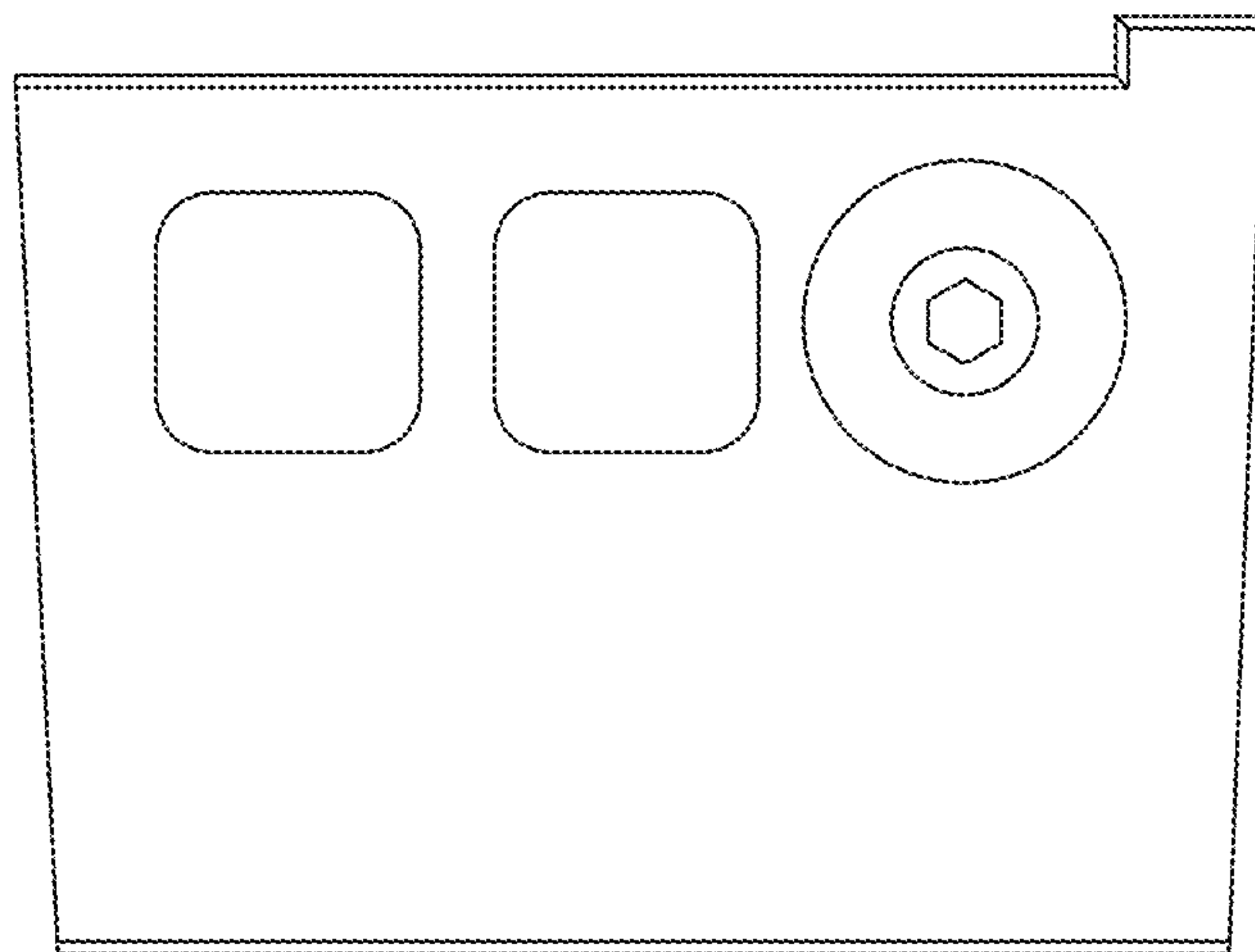


FIG. 10

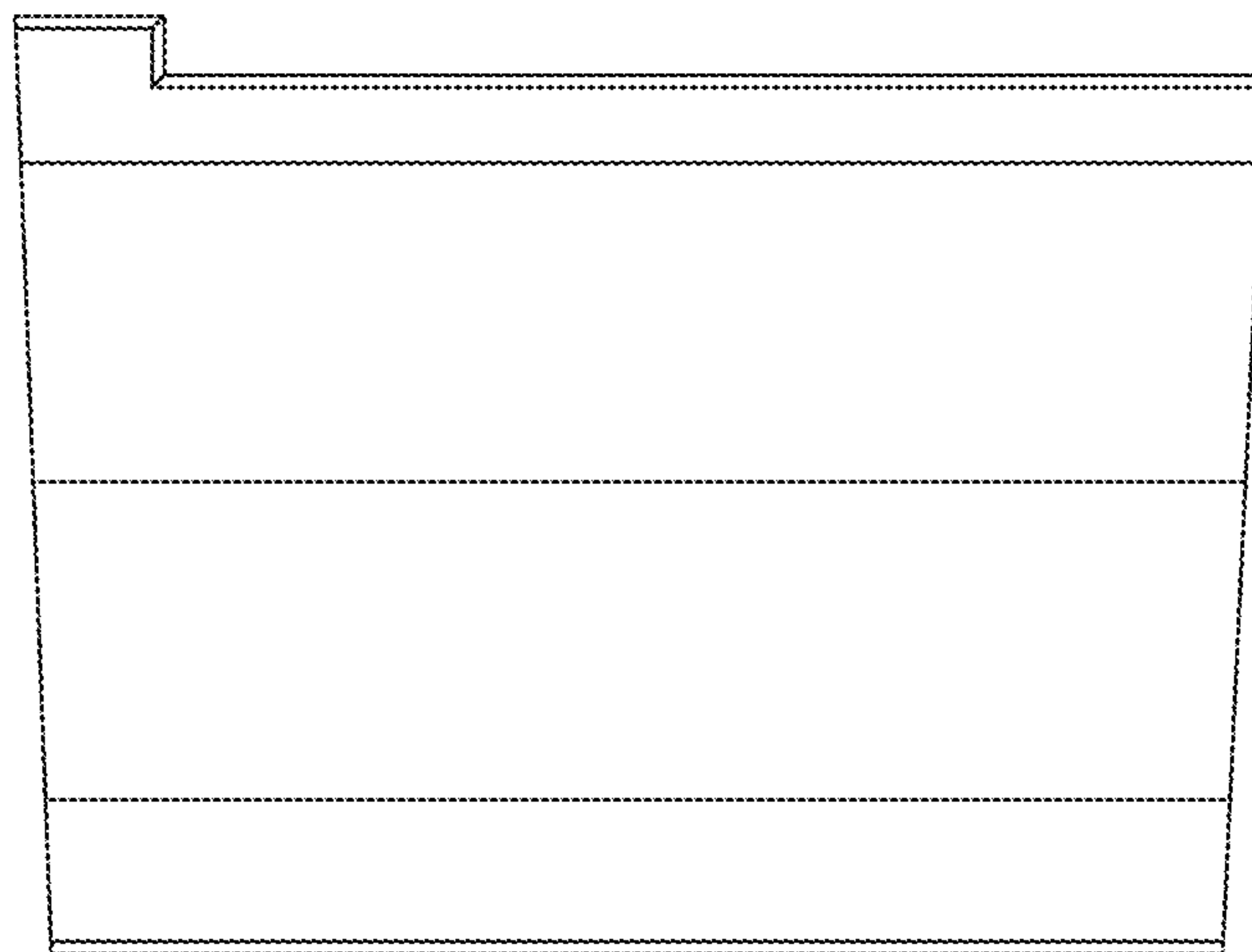


FIG. 11

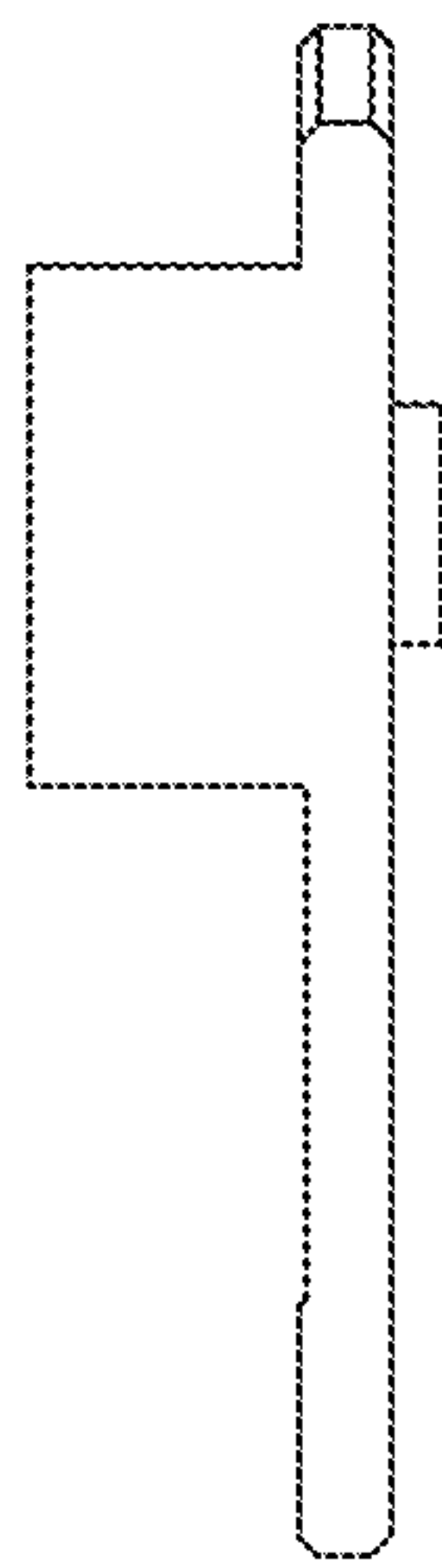


FIG. 12

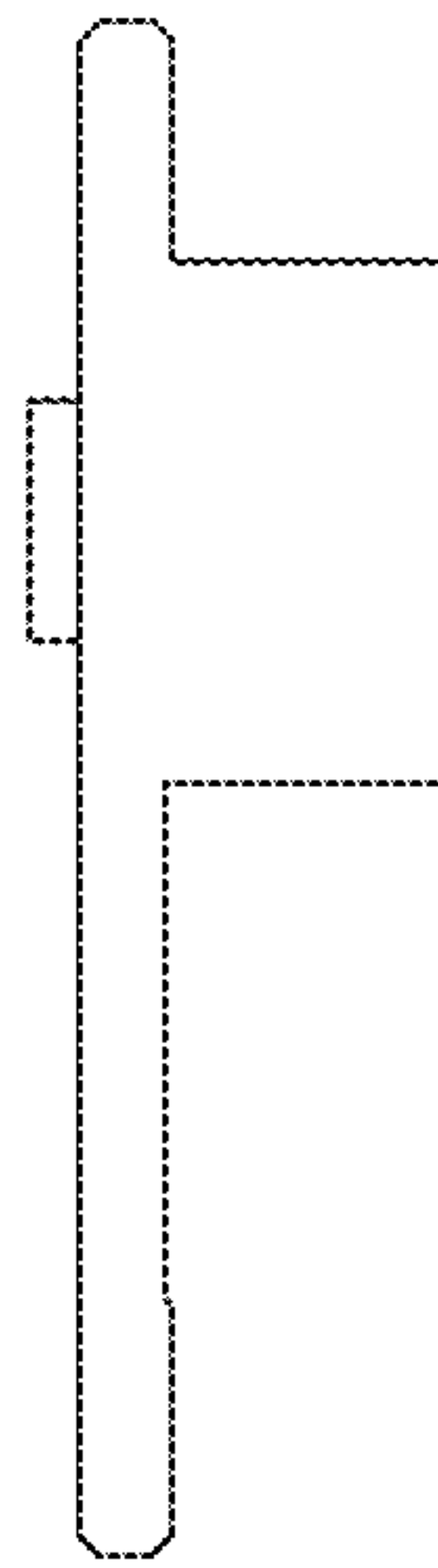


FIG. 13

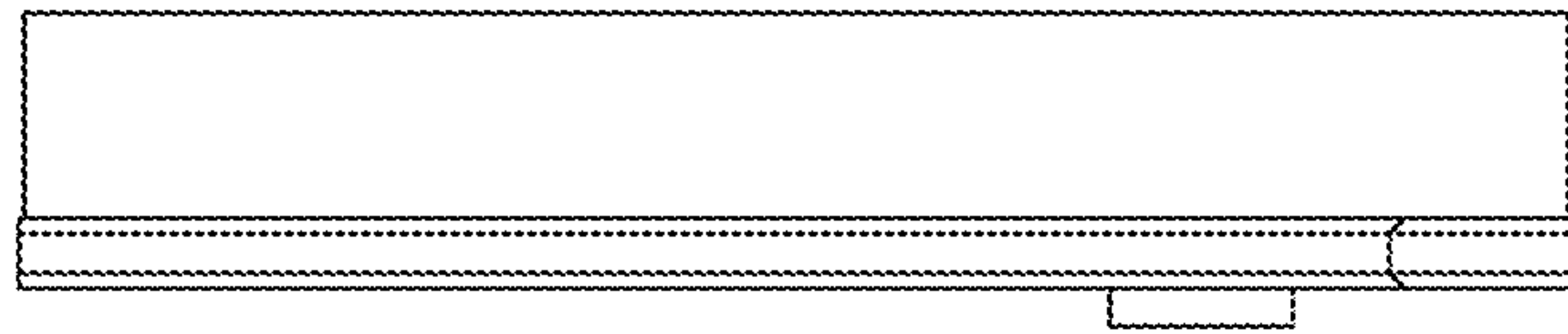


FIG. 14



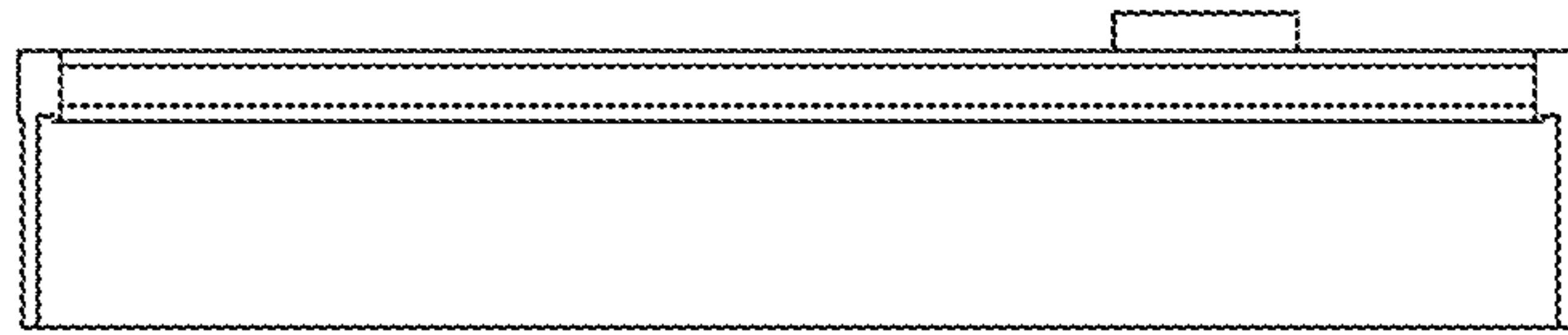


FIG. 15

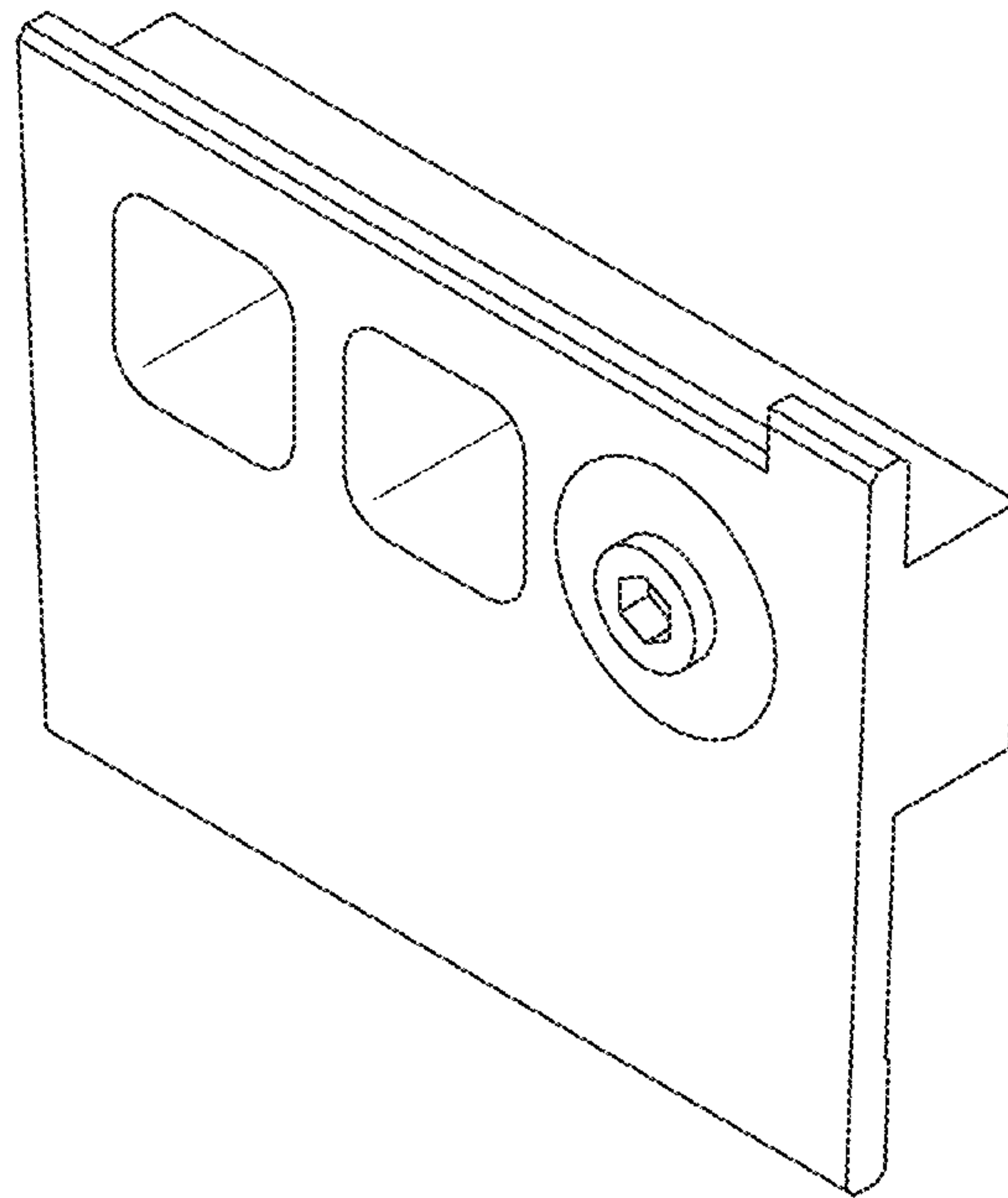


FIG. 16