



US00D651621S

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

(10) **Patent No.:** **US D651,621 S**
(45) **Date of Patent:** **** Jan. 3, 2012**

(54) **LARGE GEAR MANUFACTURING MACHINE**

(75) Inventors: **Satoru Akama**, Shiga-ken (JP); **Seisaku Odan**, Shiga-ken (JP)

(73) Assignee: **Mitsubishi Heavy Industries, Ltd.**, Tokyo (JP)

(**) **Term:** **14 Years**

(21) **Appl. No.:** **29/358,322**

(22) **Filed:** **Mar. 25, 2010**

(30) **Foreign Application Priority Data**

Sep. 28, 2009 (JP) 2009-022347

(51) **LOC (9) Cl.** **15-09**

(52) **U.S. Cl.** **D15/131**

(58) **Field of Classification Search** D15/131,
D15/199; 299/73; 409/11; 451/5, 11, 13,
451/30, 47, 340, 443

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,981,402	A *	1/1991	Krenzer et al.	409/26
5,116,173	A *	5/1992	Goldrich	409/13
5,310,295	A *	5/1994	Palmateer et al.	409/13
5,503,588	A *	4/1996	Sweet	451/5
5,580,298	A *	12/1996	Stadtfeld	451/1
5,800,103	A *	9/1998	Stadtfeld et al.	409/27
6,122,824	A *	9/2000	Jensen	29/888.023
6,190,241	B1 *	2/2001	Schriefer	451/56
6,390,894	B1 *	5/2002	Beel et al.	451/47
2006/0174464	A1 *	8/2006	Fitzgerald et al.	29/56.5
2007/0060022	A1 *	3/2007	Wirz et al.	451/5

2007/0131050	A1 *	6/2007	Nicholson	74/355
2007/0297115	A1 *	12/2007	Mall	361/160
2009/0068927	A1 *	3/2009	Durr	451/5
2010/0221079	A1 *	9/2010	Neumaier et al.	409/2
2010/0221080	A1 *	9/2010	Neumaier et al.	409/13
2010/0304642	A1 *	12/2010	Mundt	451/5
2011/0181097	A1 *	7/2011	Skea	299/73
2011/0204327	A1 *	8/2011	Hiruma et al.	257/13

* cited by examiner

Primary Examiner — Patricia Palasik

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

(57) **CLAIM**

The ornamental design for a large gear manufacturing machine, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a large gear manufacturing machine.

FIG. 2 is a front elevation view thereof.

FIG. 3 is a rear elevation view thereof.

FIG. 4 is a left side elevation view thereof. A right side elevation view is omitted because it is symmetrical with the left side elevation view.

FIG. 5 is a top plan view thereof.

FIG. 6 is a bottom plan view thereof.

FIG. 7 is a front referential view with the cutter head inclined to the right by 10 degrees thereof.

FIG. 8 is a referential view 1 showing use thereof.

FIG. 9 is a referential view 2 showing use thereof; and,

FIG. 10 is a referential view 3 showing use thereof.

The portion of the article shown in broken lines is for the purpose of showing environmental structure only and forms no part of the claimed design.

1 Claim, 10 Drawing Sheets

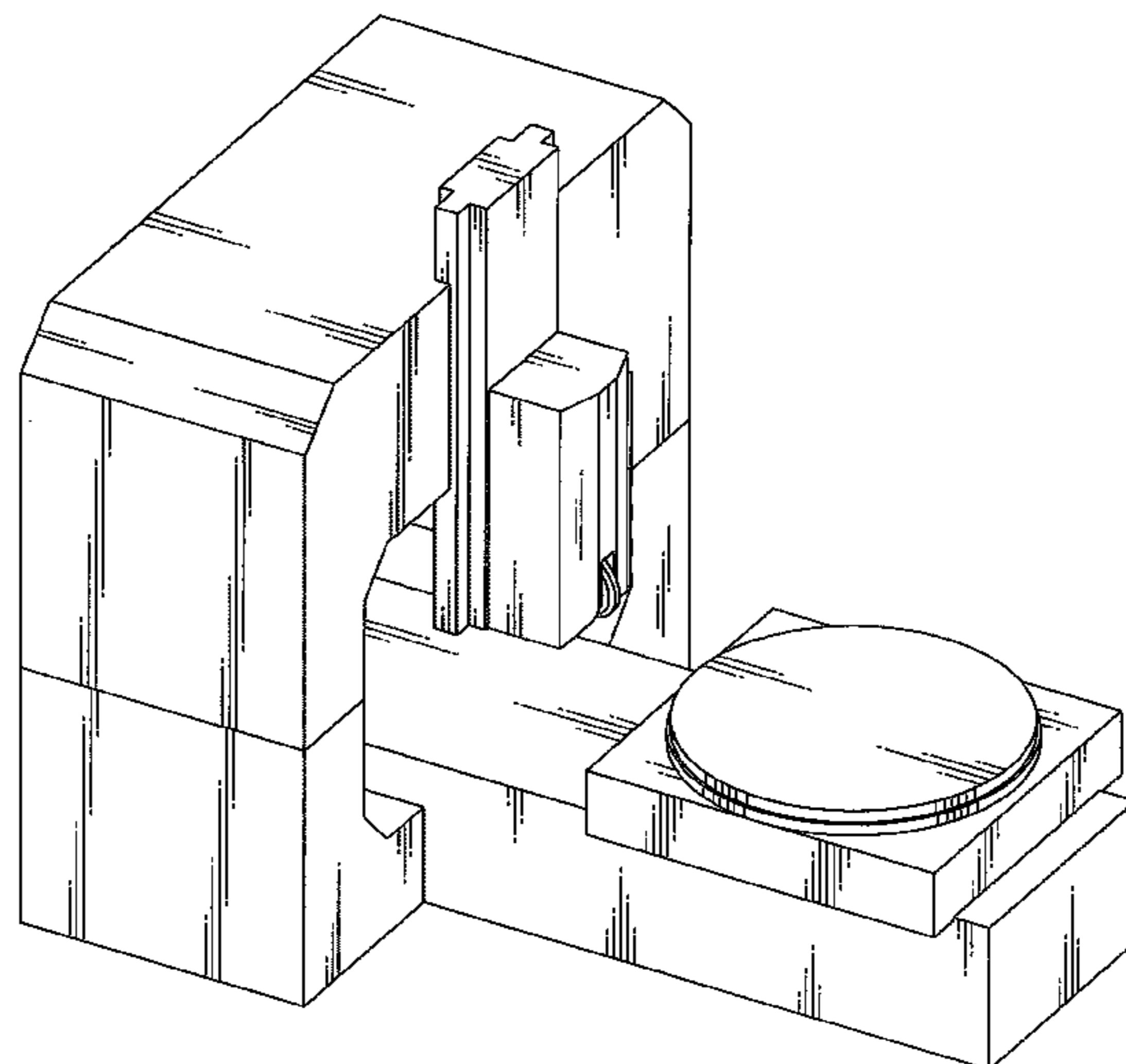


FIG. 1

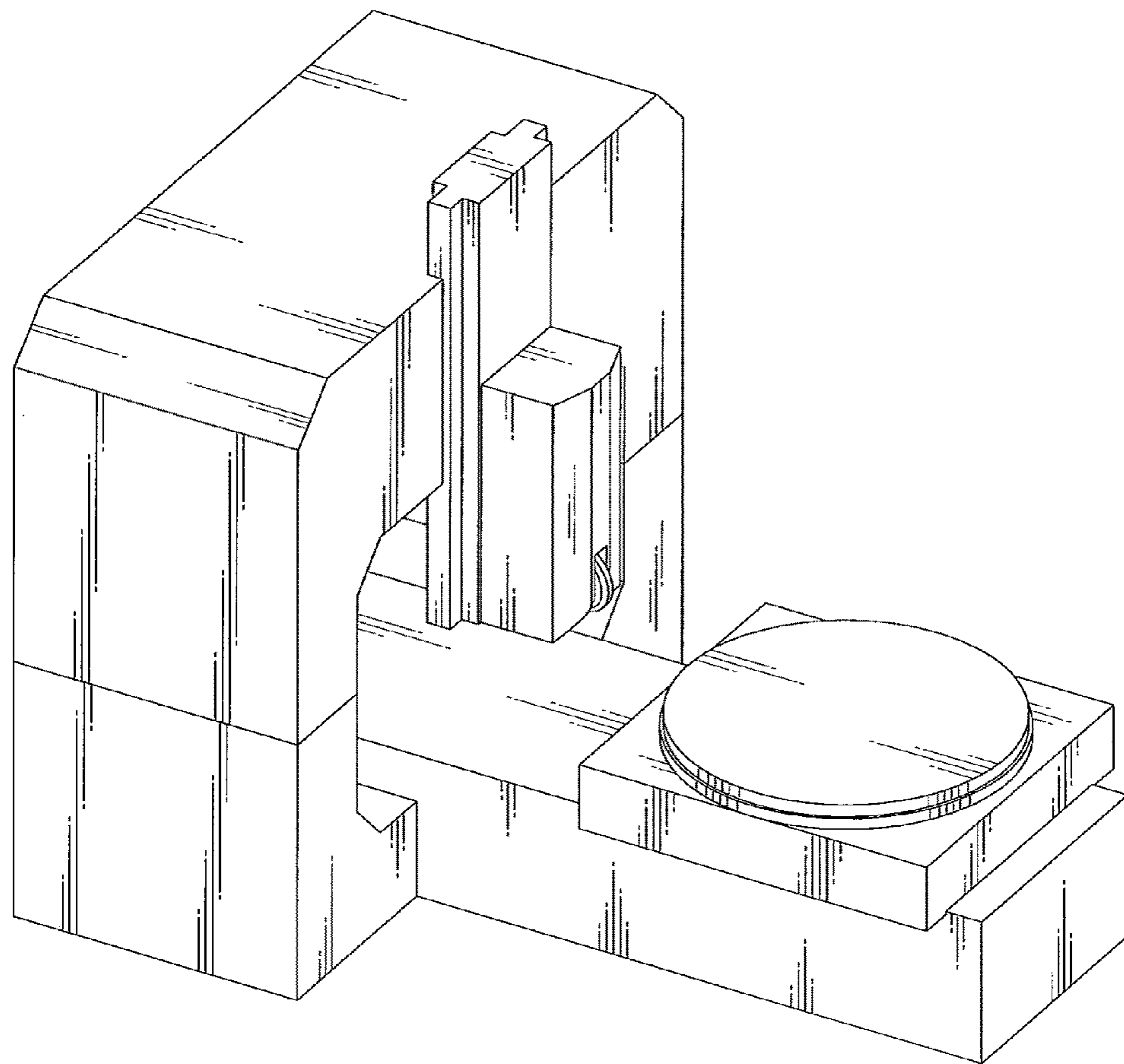


FIG. 2

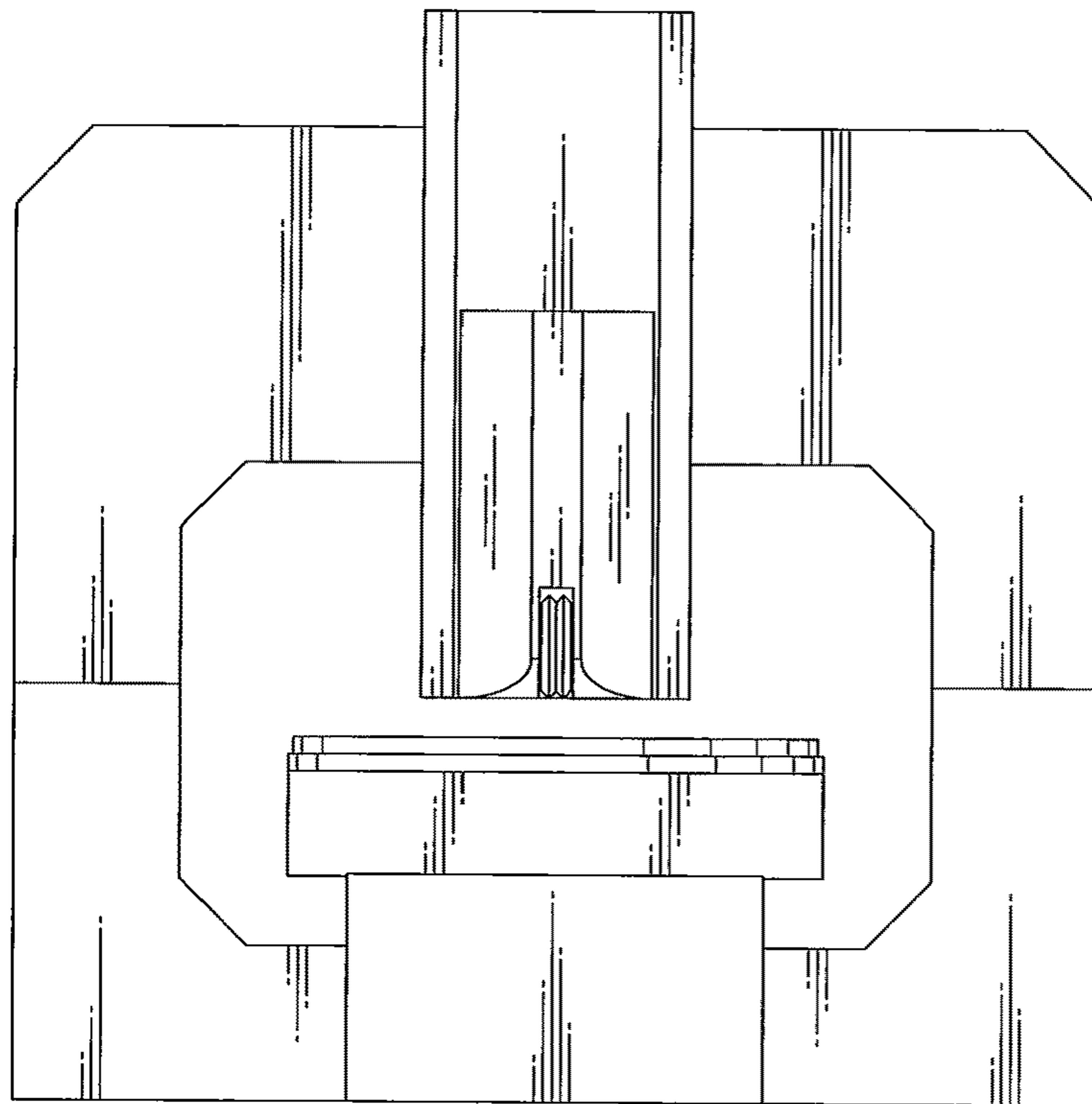


FIG. 3

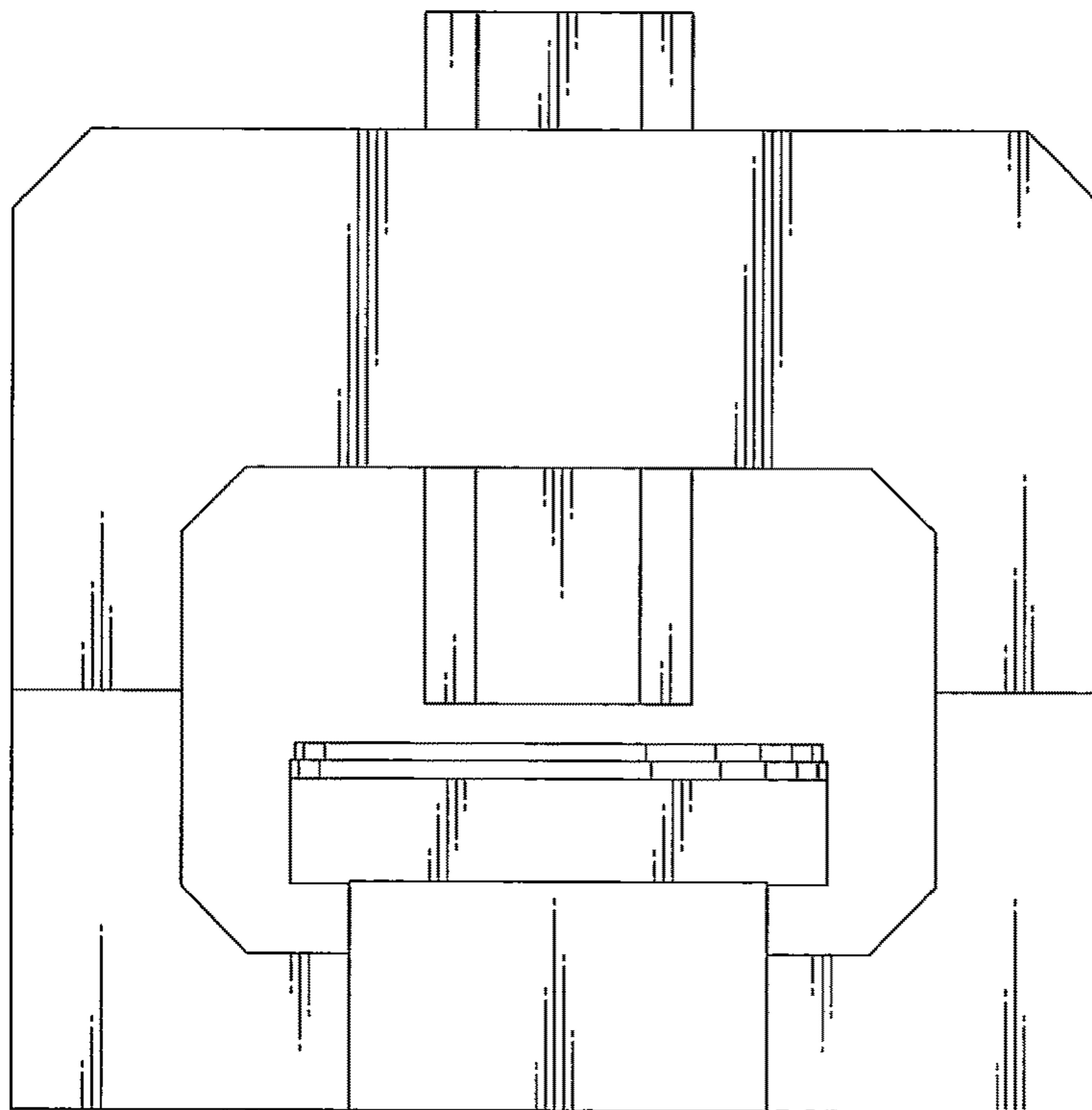


FIG. 4

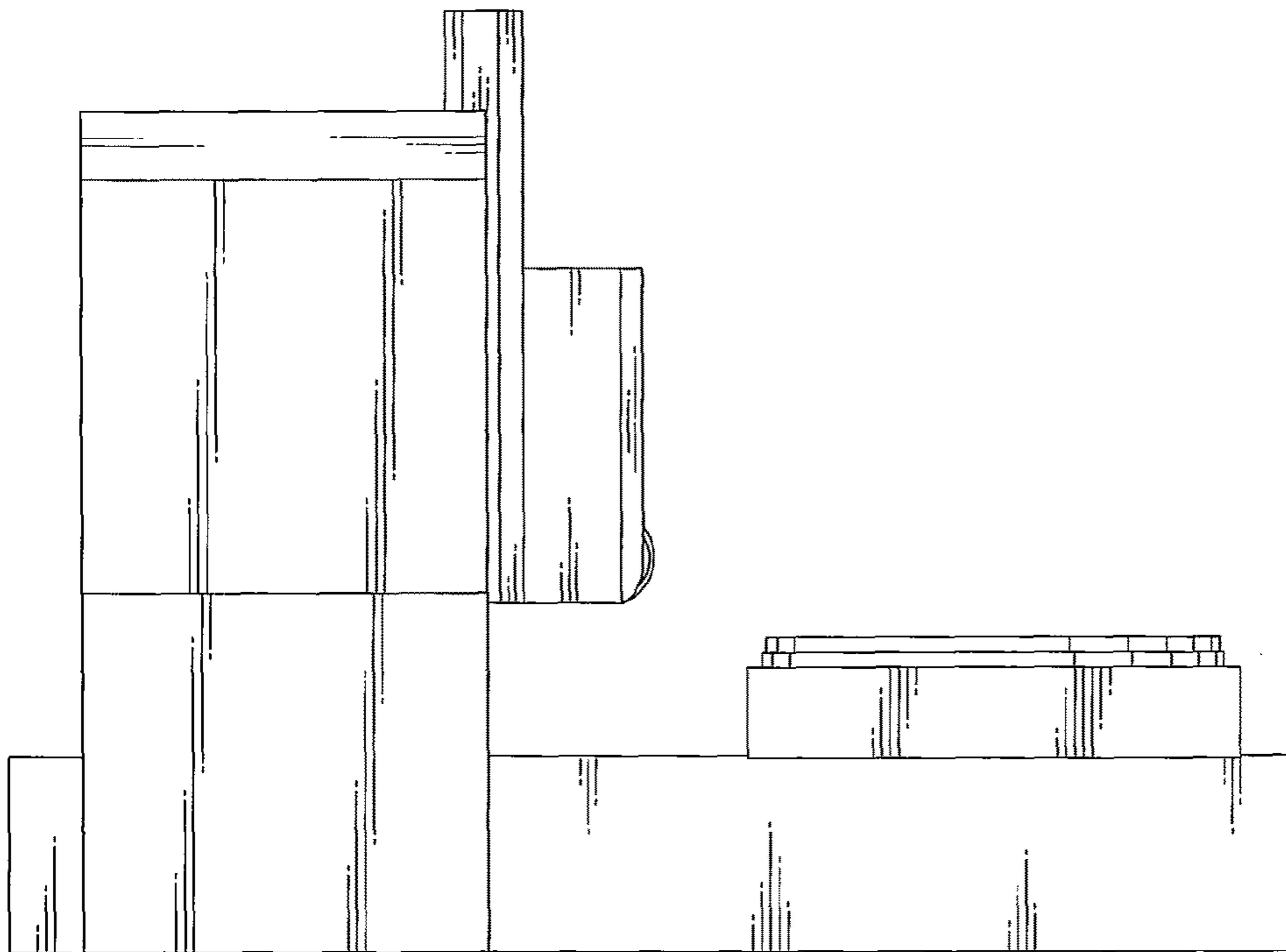


FIG. 5

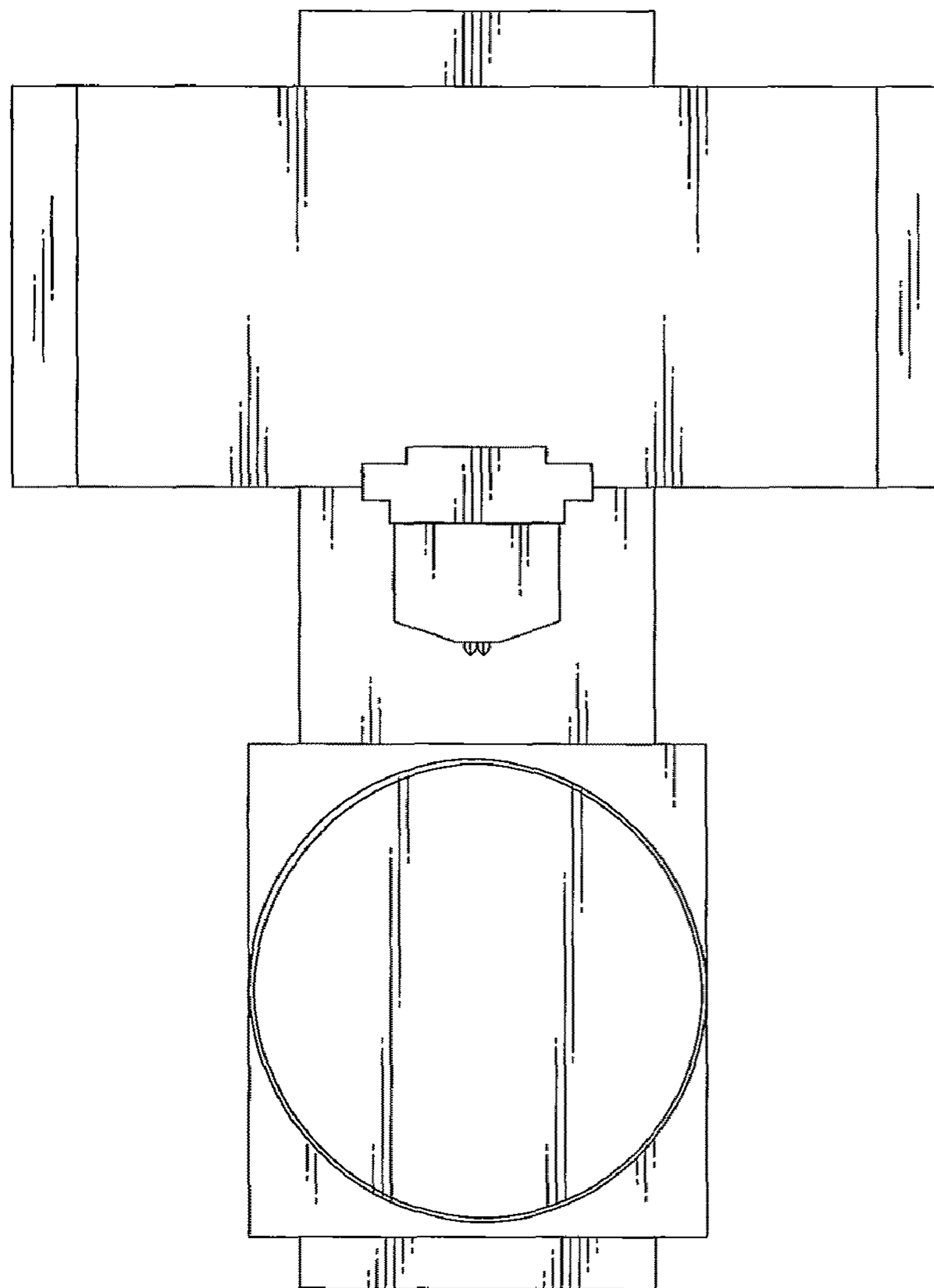


FIG. 6

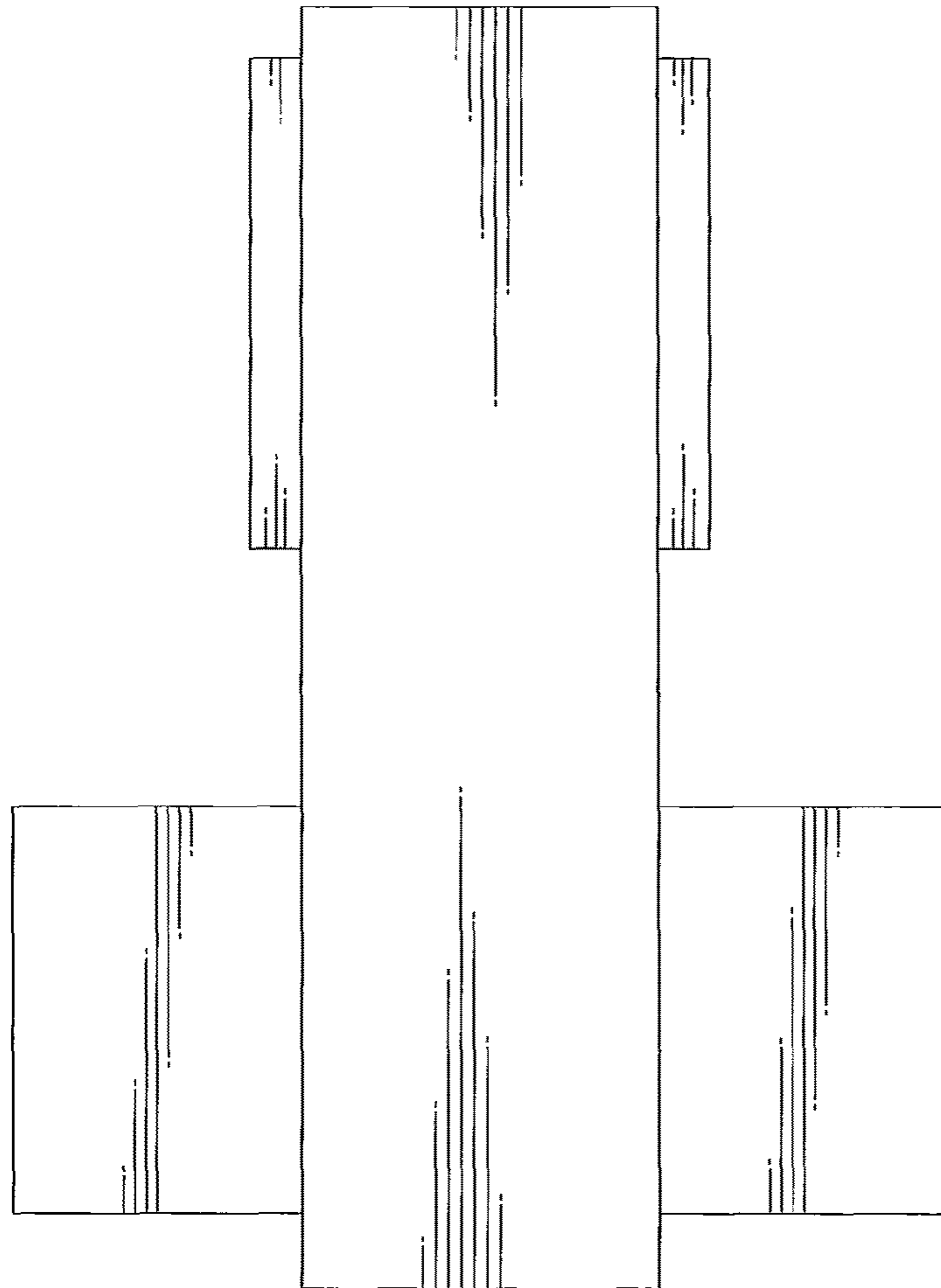


FIG. 7

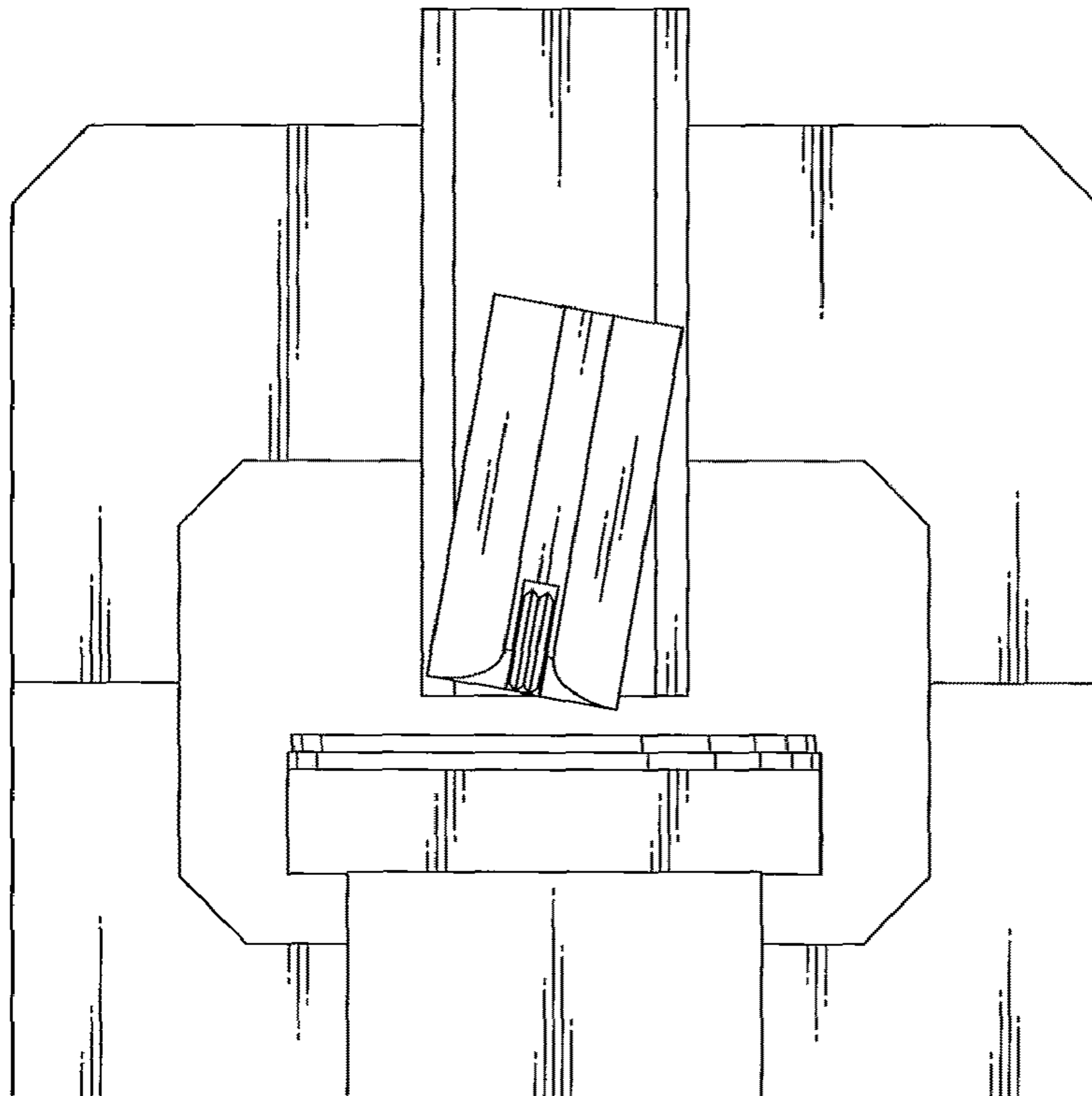


FIG. 8

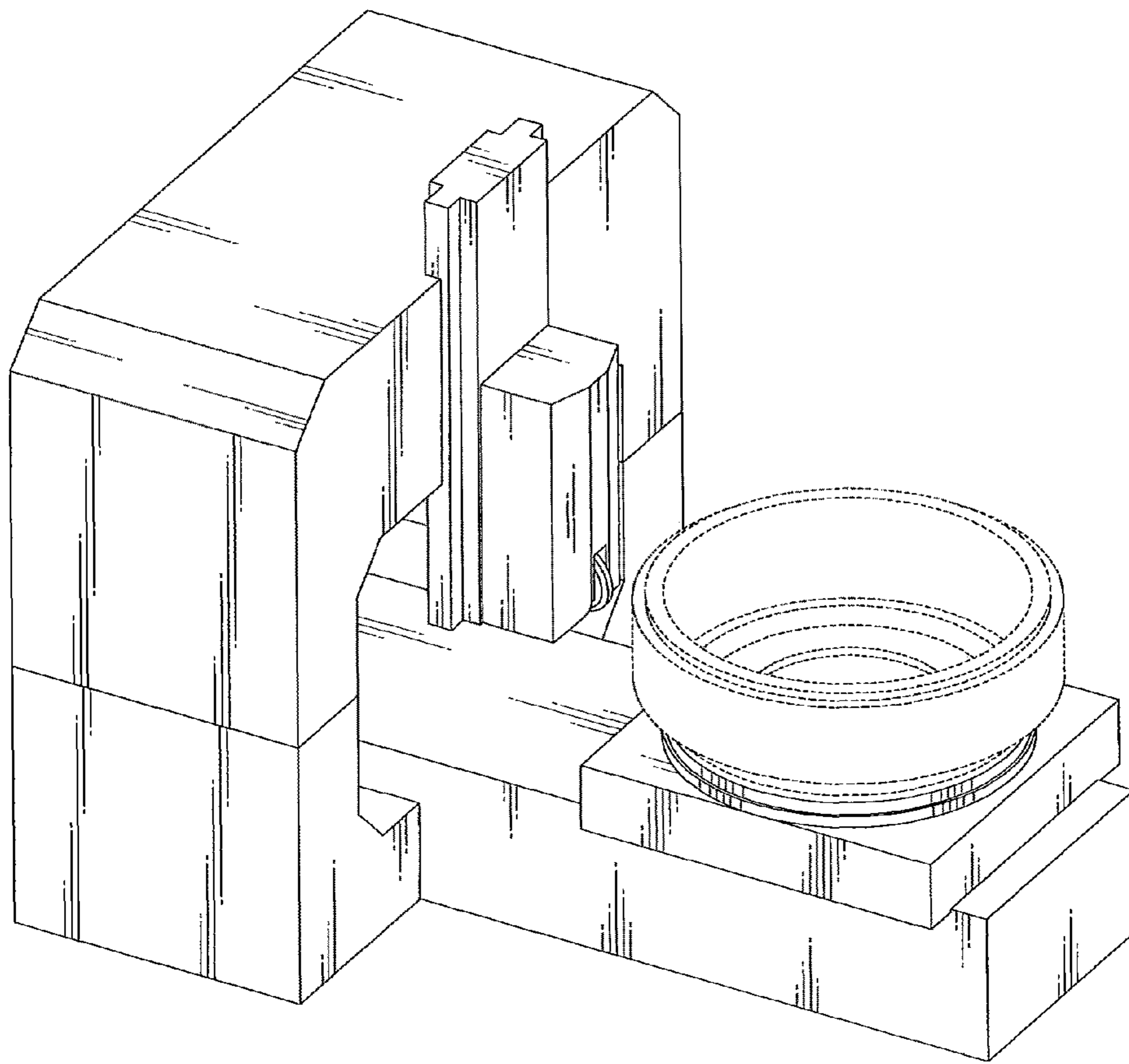


FIG. 9

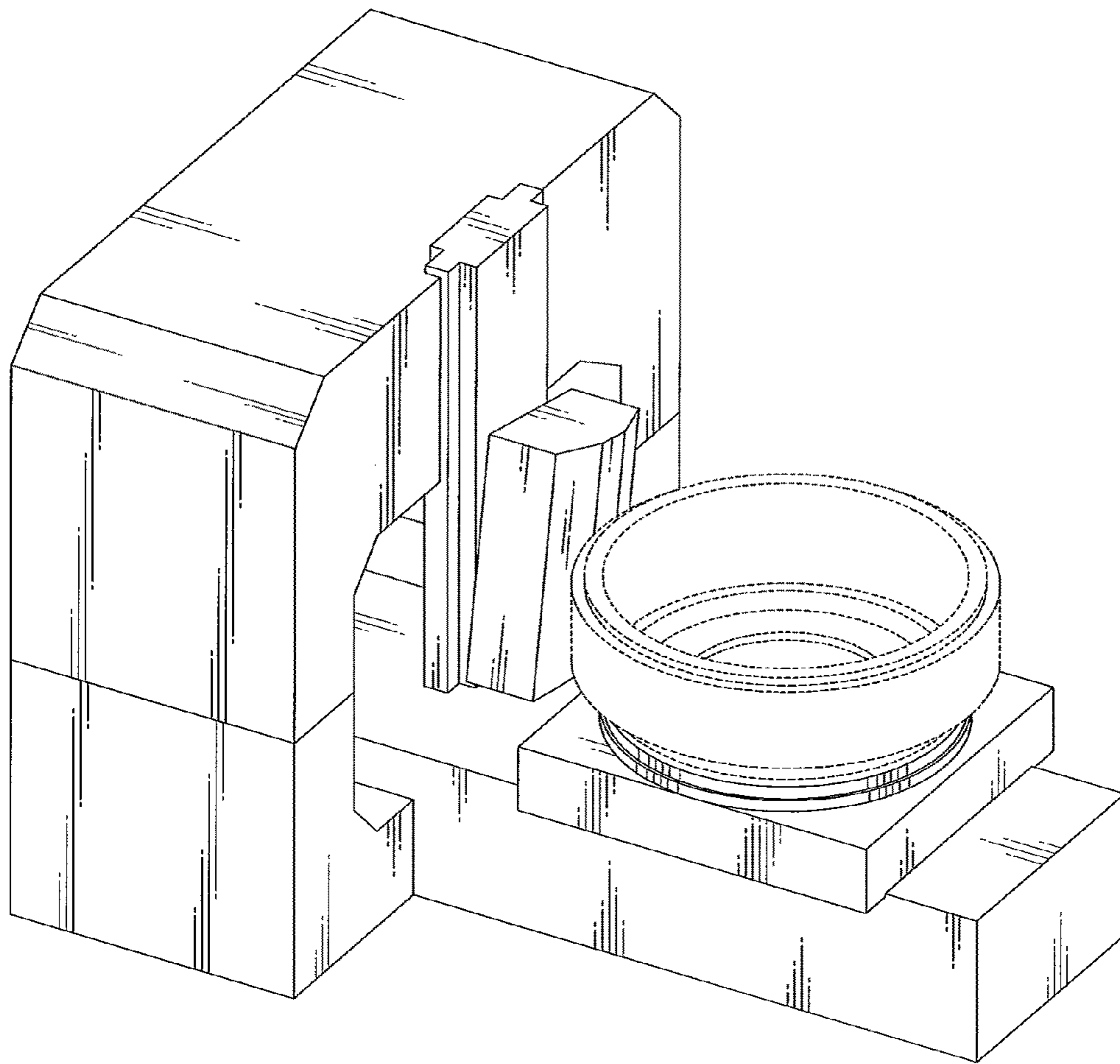


FIG. 10

