

US00D562524S

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

(10) **Patent No.:** **US D562,524 S**
(45) **Date of Patent:** **** Feb. 19, 2008**

(54) **WAFER TRANSFER APPARATUS**

(57) **CLAIM**

(75) Inventors: **Tsutomu Hiroki**, Yamanashi (JP);
Wataru Machiyama, Yamanashi (JP);
Takehiro Shindo, Yamanashi (JP)

We claim the ornamental design for a wafer transfer apparatus, as shown and described.

(73) Assignee: **Tokyo Electron Limited**, Tokyo (JP)

DESCRIPTION

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

FIG. 1 is a top view of the wafer transfer apparatus of the present design;

(21) Appl. No.: **29/220,627**

FIG. 2 is a front elevational view thereof;

(22) Filed: **Jan. 5, 2005**

FIG. 3 is a back elevational view thereof;

(30) **Foreign Application Priority Data**

FIG. 4 is a bottom view thereof;

Jul. 20, 2004 (JP) 2004-21726

FIG. 5 is a right side view thereof;

(51) **LOC (8) Cl.** **12-05**

FIG. 6 is a left side view thereof;

(52) **U.S. Cl.** **D34/28; D34/35**

FIG. 7 is a reference figure showing a perspective view seen from a back-left hand side of the apparatus;

(58) **Field of Classification Search** D34/29,
D34/35; 198/771, 866, 890, 367, 890.1,
198/370.1, 370.04, 782, 722; 193/35 A,
193/35 C; 438/220, 232, 5, 689

FIG. 8 is a reference figure showing a top view seen from a back-left hand side of the apparatus;

See application file for complete search history.

FIG. 9 is a reference figure showing a perspective view seen from a front-right hand side of the apparatus;

(56) **References Cited**

U.S. PATENT DOCUMENTS

FIG. 10 is a reference figure showing a perspective view seen from a back-right hand side of the apparatus;

4,810,019	A *	3/1989	Brucher	294/106
6,279,730	B1 *	8/2001	Schreger et al.	198/722
6,927,181	B2 *	8/2005	Wakizako et al.	438/782
6,949,466	B2 *	9/2005	Jeong	438/691
D525,408	S *	7/2006	Nitadori	D34/35
7,104,867	B2 *	9/2006	Jeong	451/11
2002/0162742	A1 *	11/2002	Bae et al.	204/298.25
2003/0064902	A1 *	4/2003	Ng et al.	510/175
2004/0048474	A1 *	3/2004	Asano	438/689
2004/0092069	A1 *	5/2004	Ishii et al.	438/232
2005/0145584	A1 *	7/2005	Buckley et al.	211/41.18
2005/0255609	A1 *	11/2005	Kumagai et al.	438/5
2006/0046376	A1 *	3/2006	Hofer et al.	438/220

FIG. 11 is a reference figure showing a right side view seen from a back side of the apparatus;

FIG. 12 is a reference figure showing a perspective view seen from the back-left hand side of the apparatus;

FIG. 13 is a reference figure showing a perspective view seen from a front-right hand side of the apparatus;

FIG. 14 is a reference figure showing a perspective view seen from the front-left hand side of the apparatus;

FIG. 15 is a reference figure showing a perspective view seen from a back-left hand side of the apparatus; and,

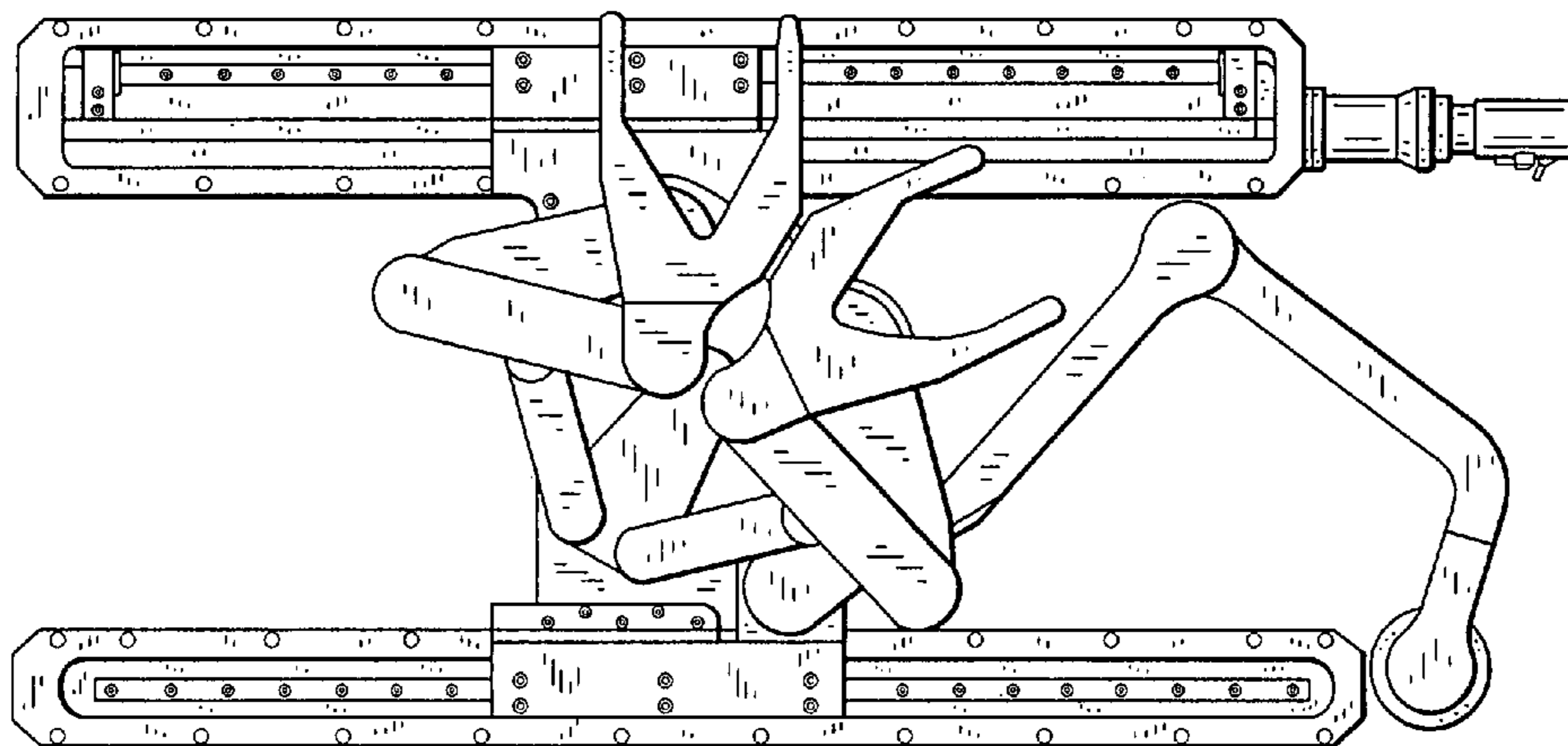
FIG. 16 is a reference figure showing a perspective view seen from a back-right hand side of the apparatus.

The broken line showing of wafers in some of the figures is included for the purpose of illustrating environment and forms no part of the claimed design.

Primary Examiner—Cynthia E. Ramirez

(74) *Attorney, Agent, or Firm*—Smith, Gambrell & Russell, LLP

1 Claim, 16 Drawing Sheets



US D562,524 S

Page 2

U.S. PATENT DOCUMENTS

2006/0105580	A1*	5/2006	Wirth et al.	438/765	2006/0169674	A1*	8/2006	Mao et al.	216/88
2006/0166503	A1*	7/2006	Sasaki et al.	438/692	2006/0194445	A1*	8/2006	Hayashi et al.	438/758

* cited by examiner

FIG. 1

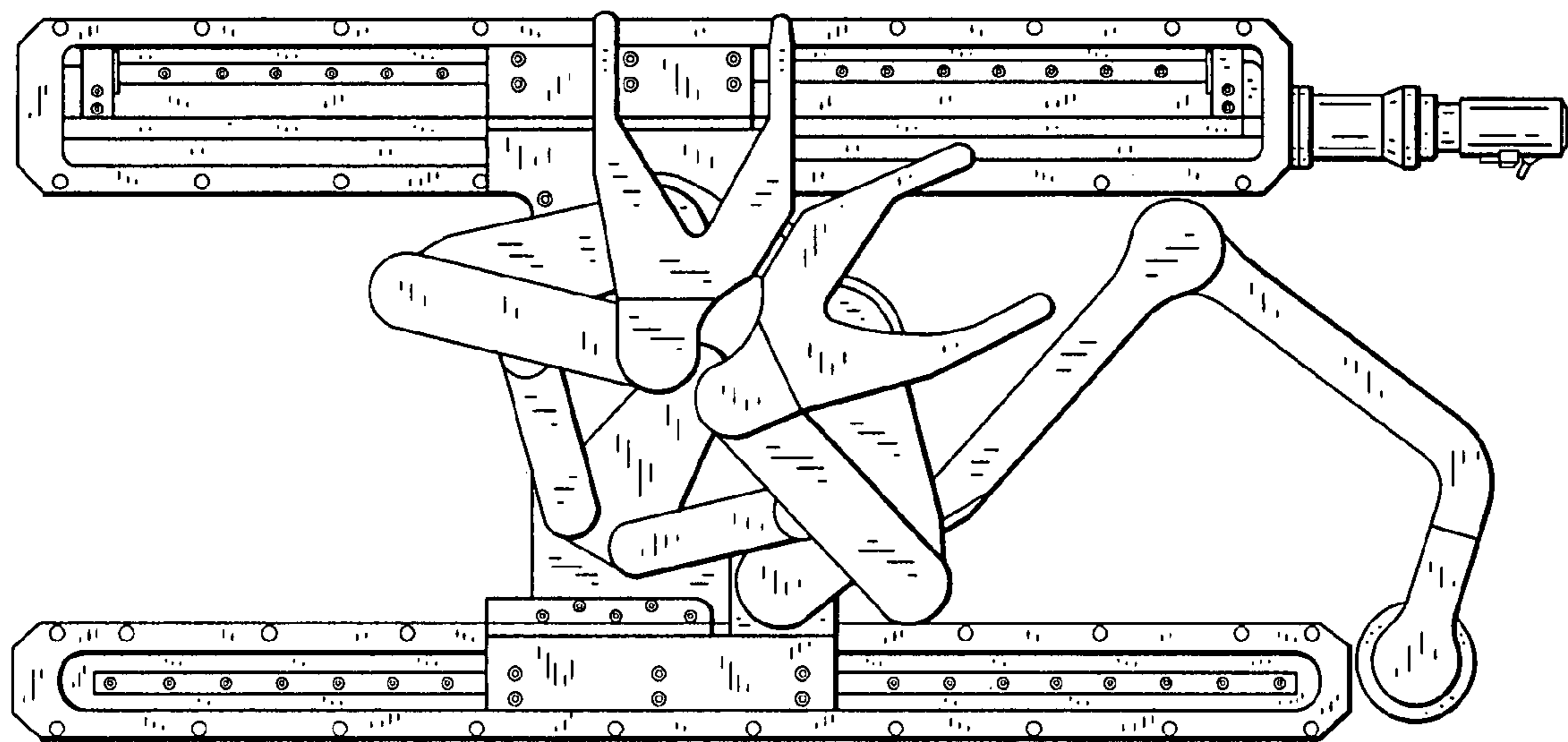


FIG. 2

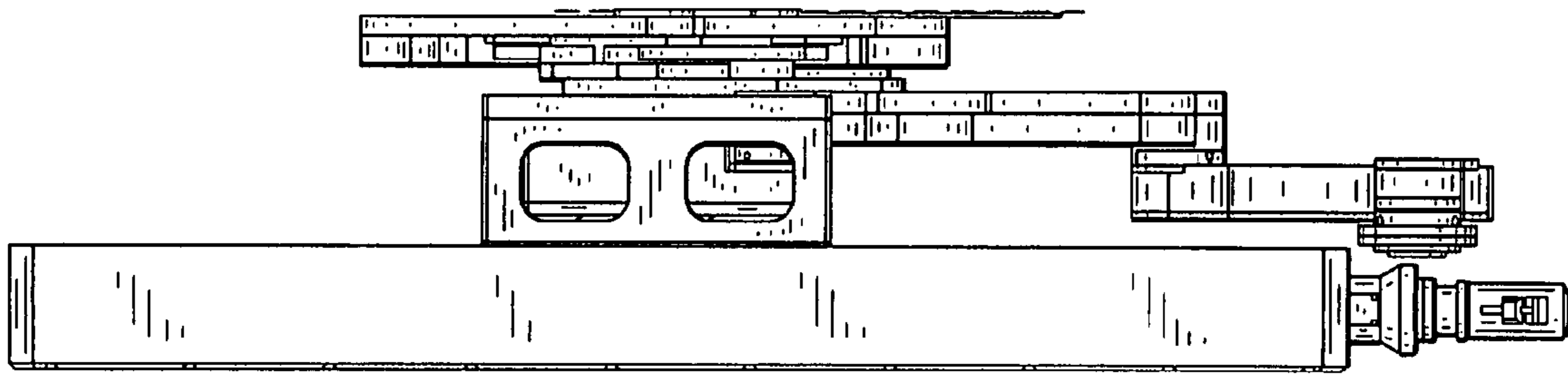


FIG. 3

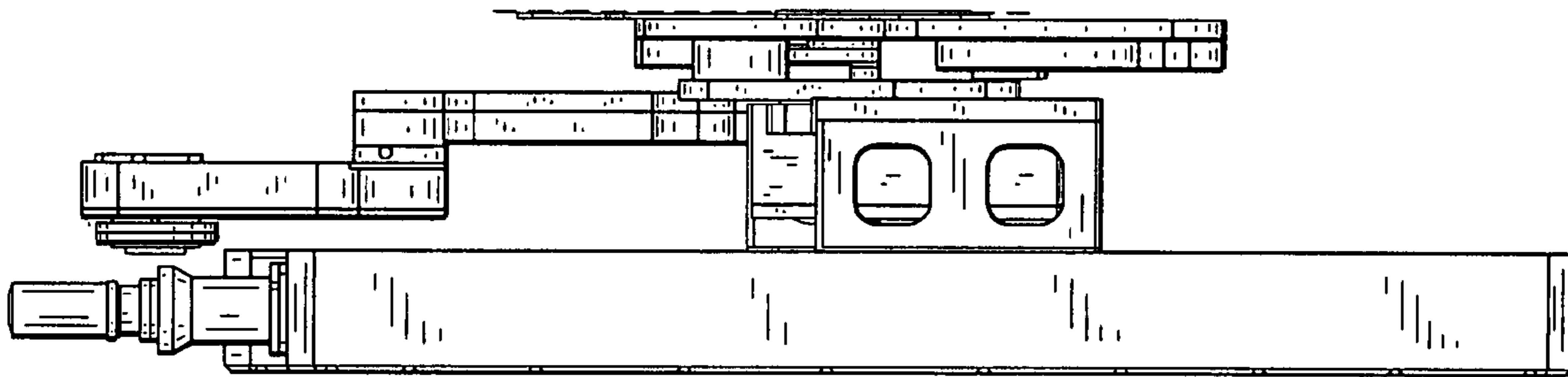


FIG. 4

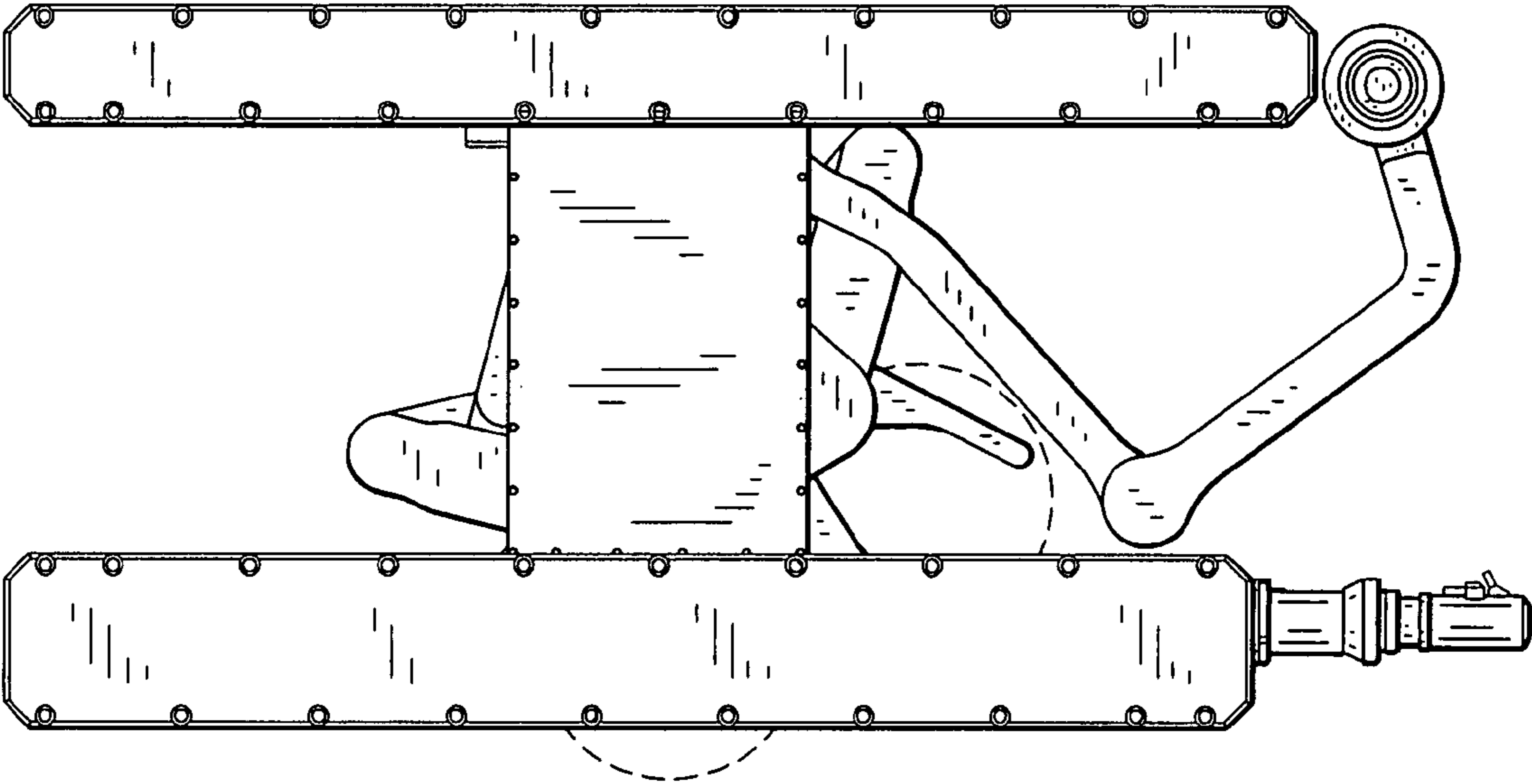


FIG. 5

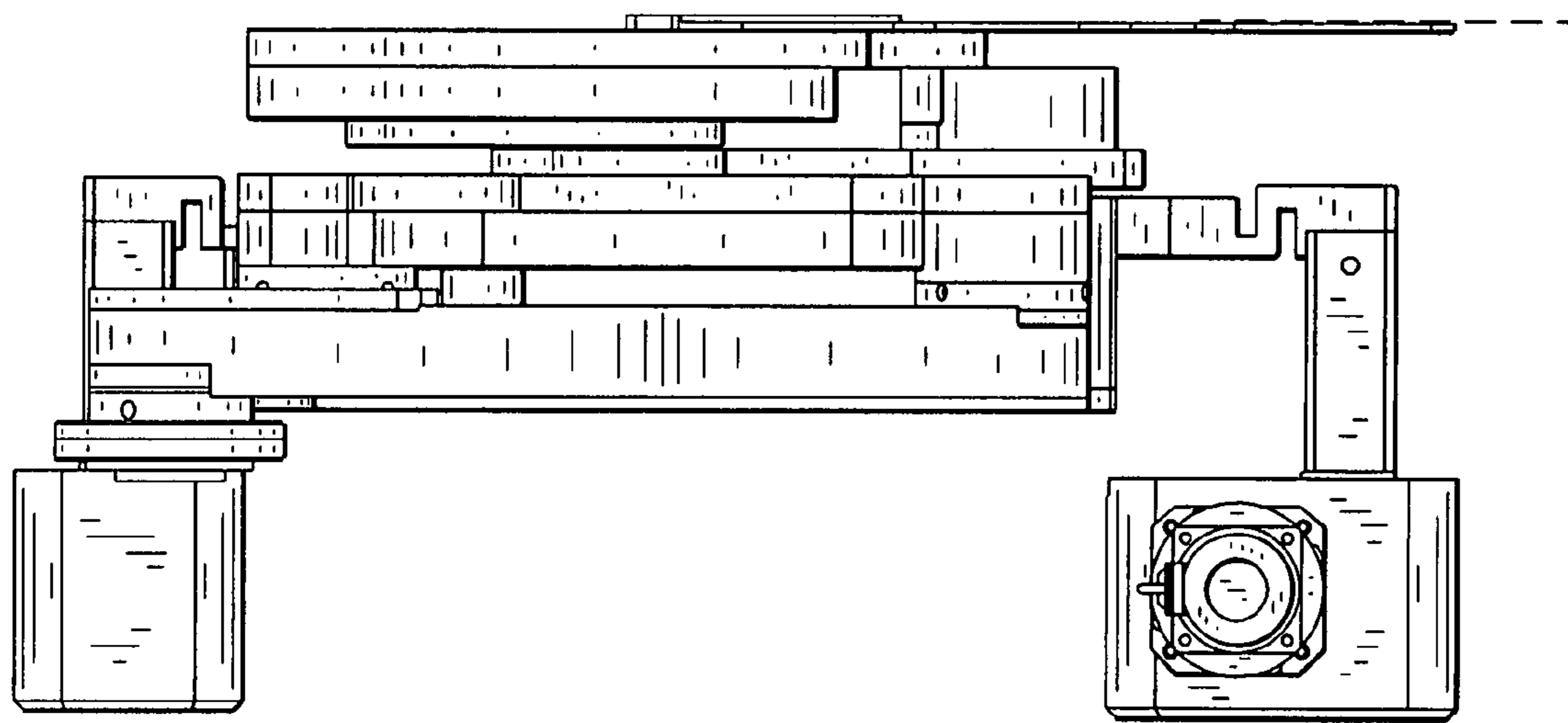


FIG. 6



FIG. 7

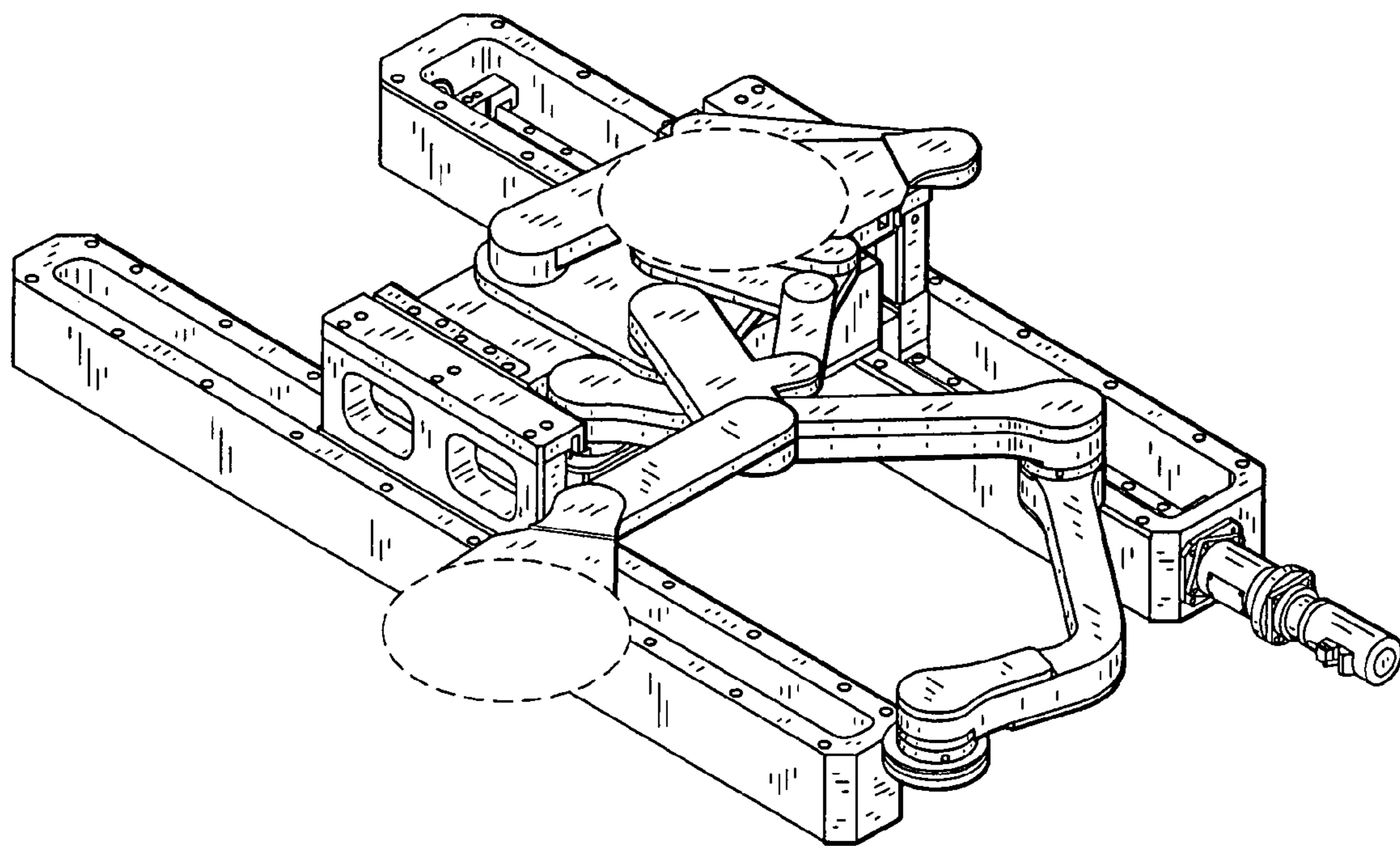


FIG. 8

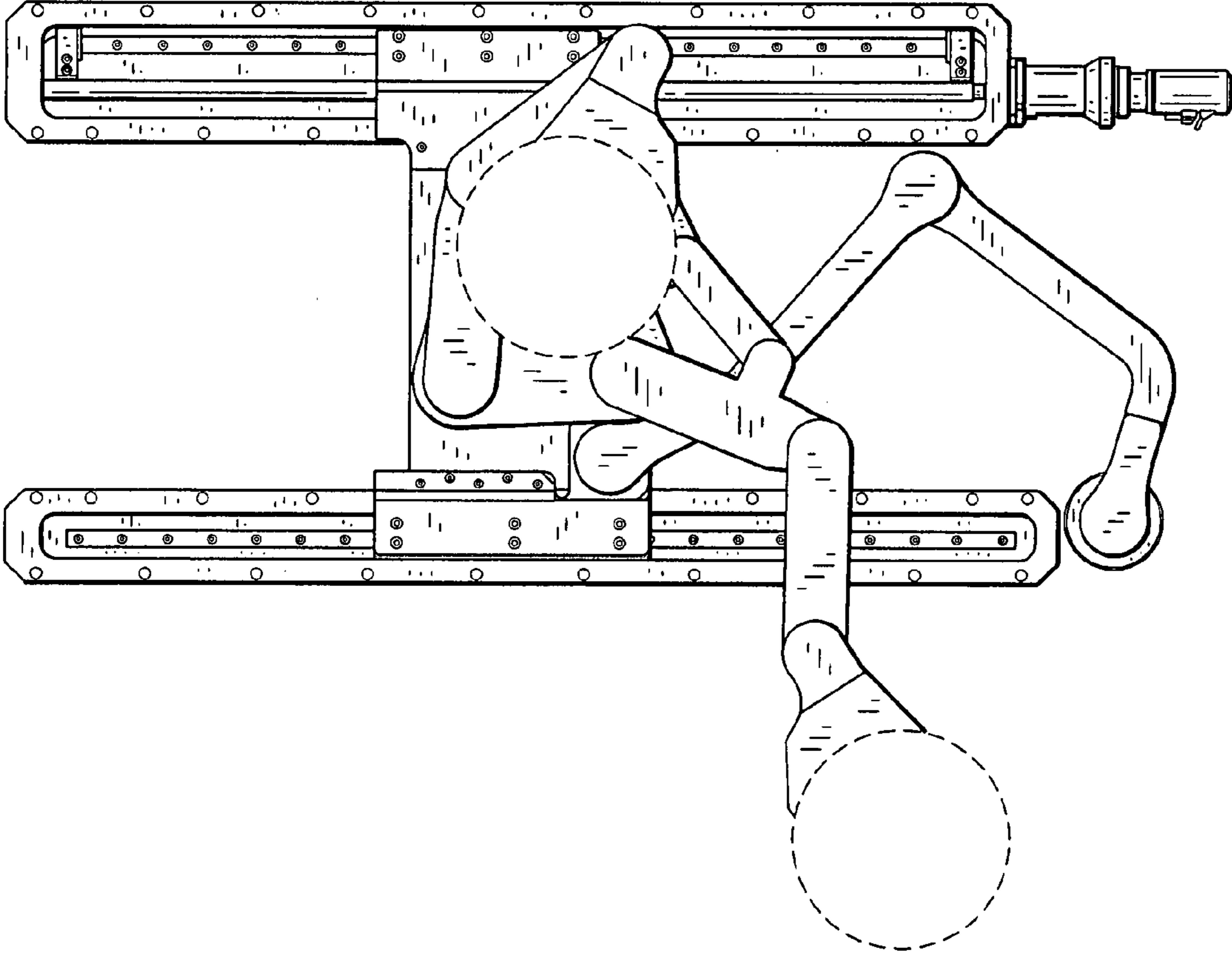


FIG. 9

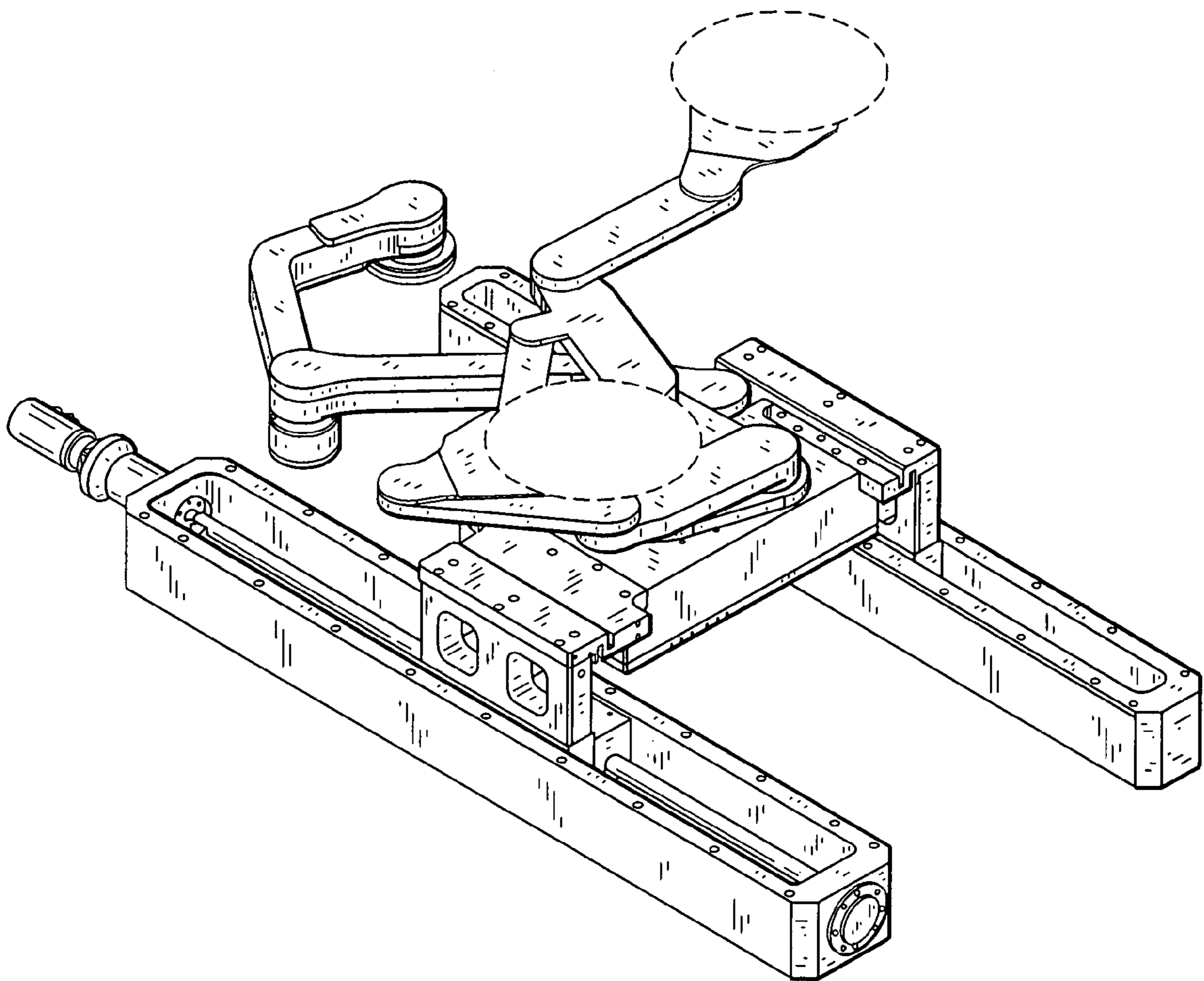


FIG. 10

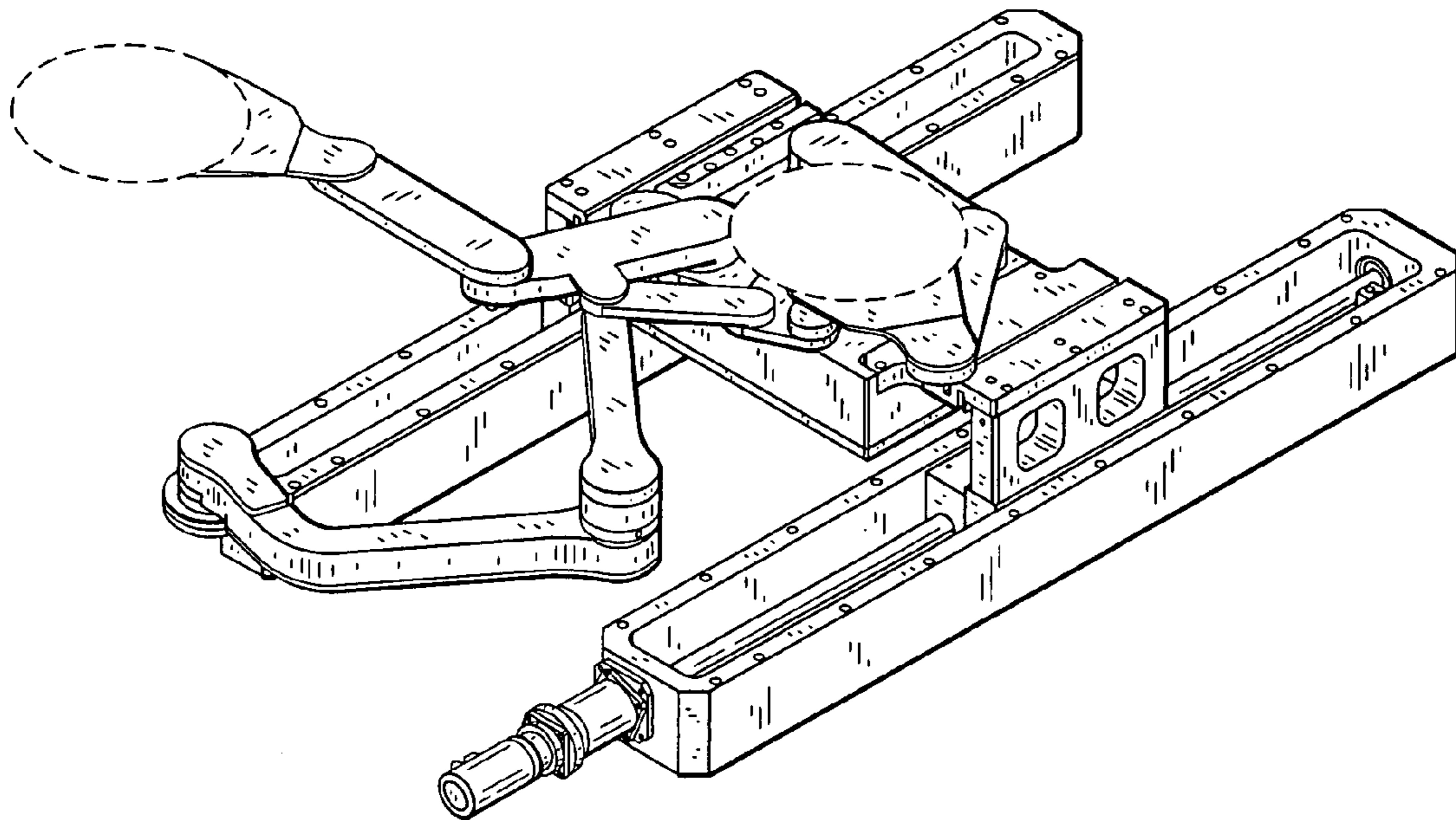


FIG. 11

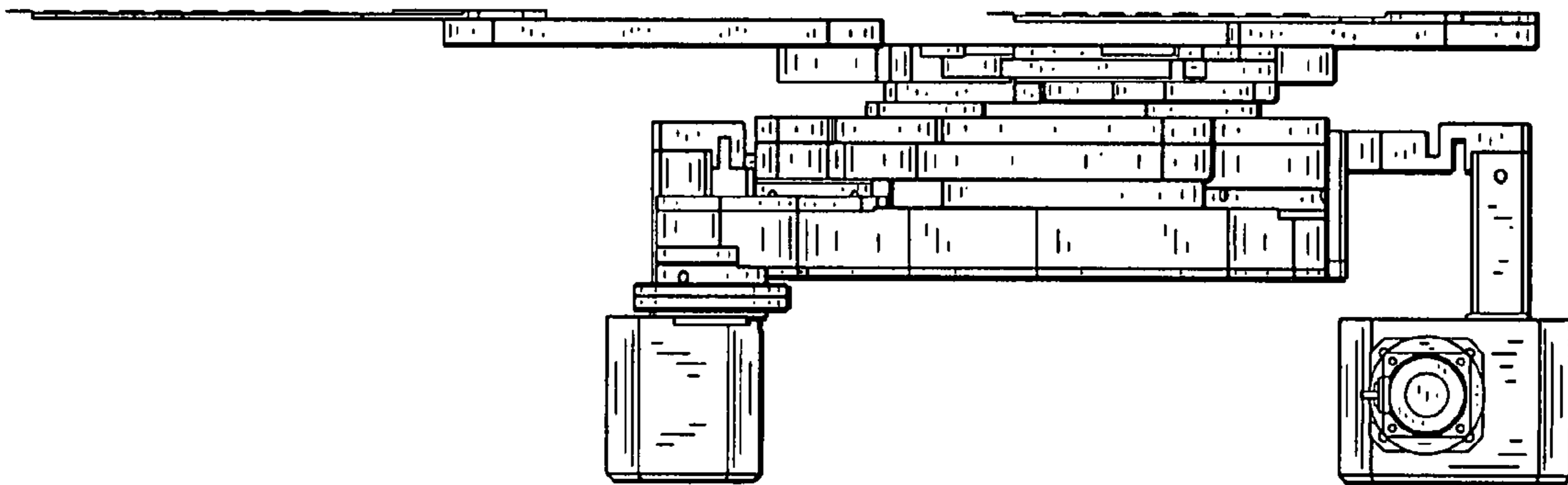


FIG. 12

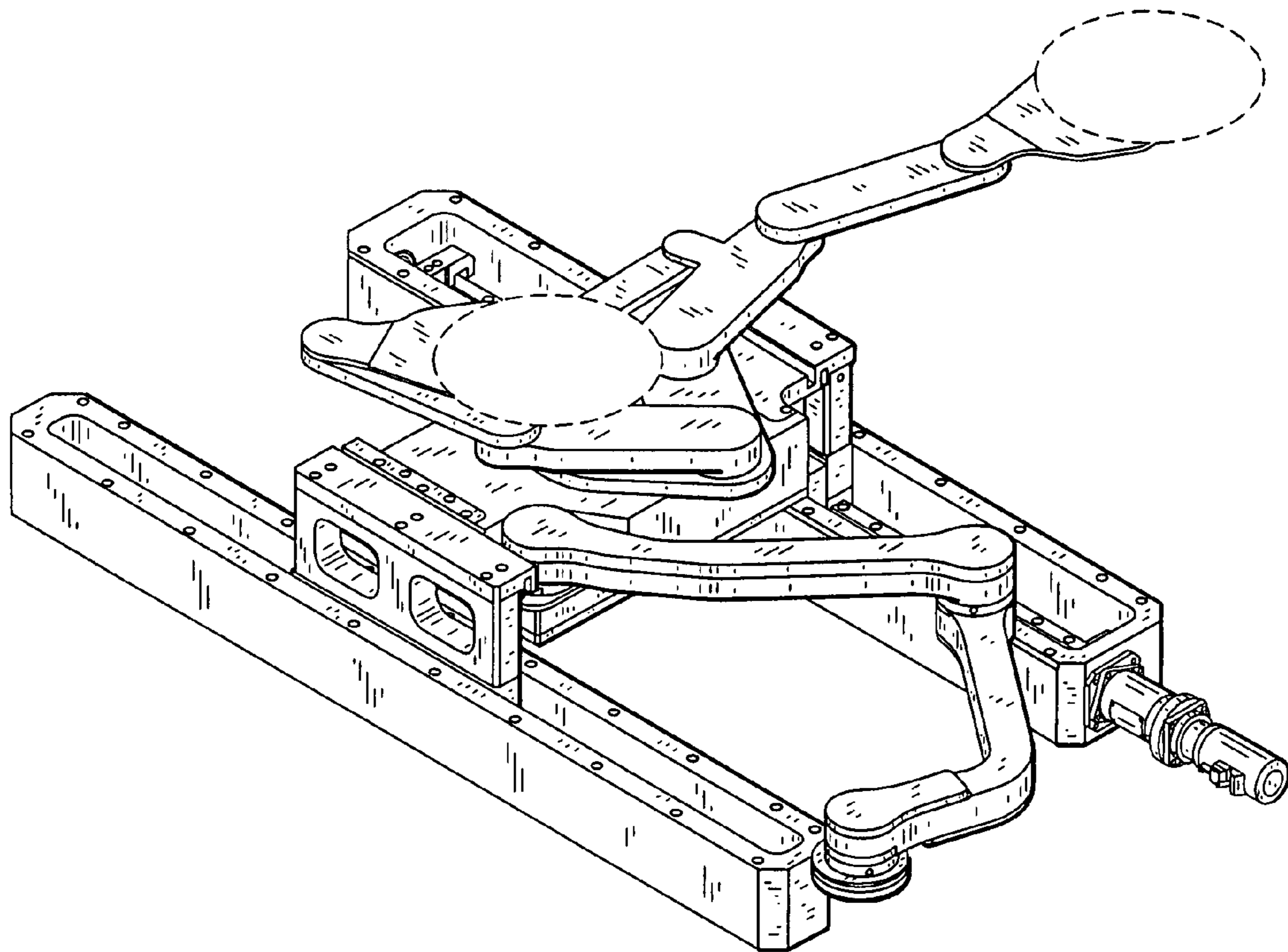


FIG. 13

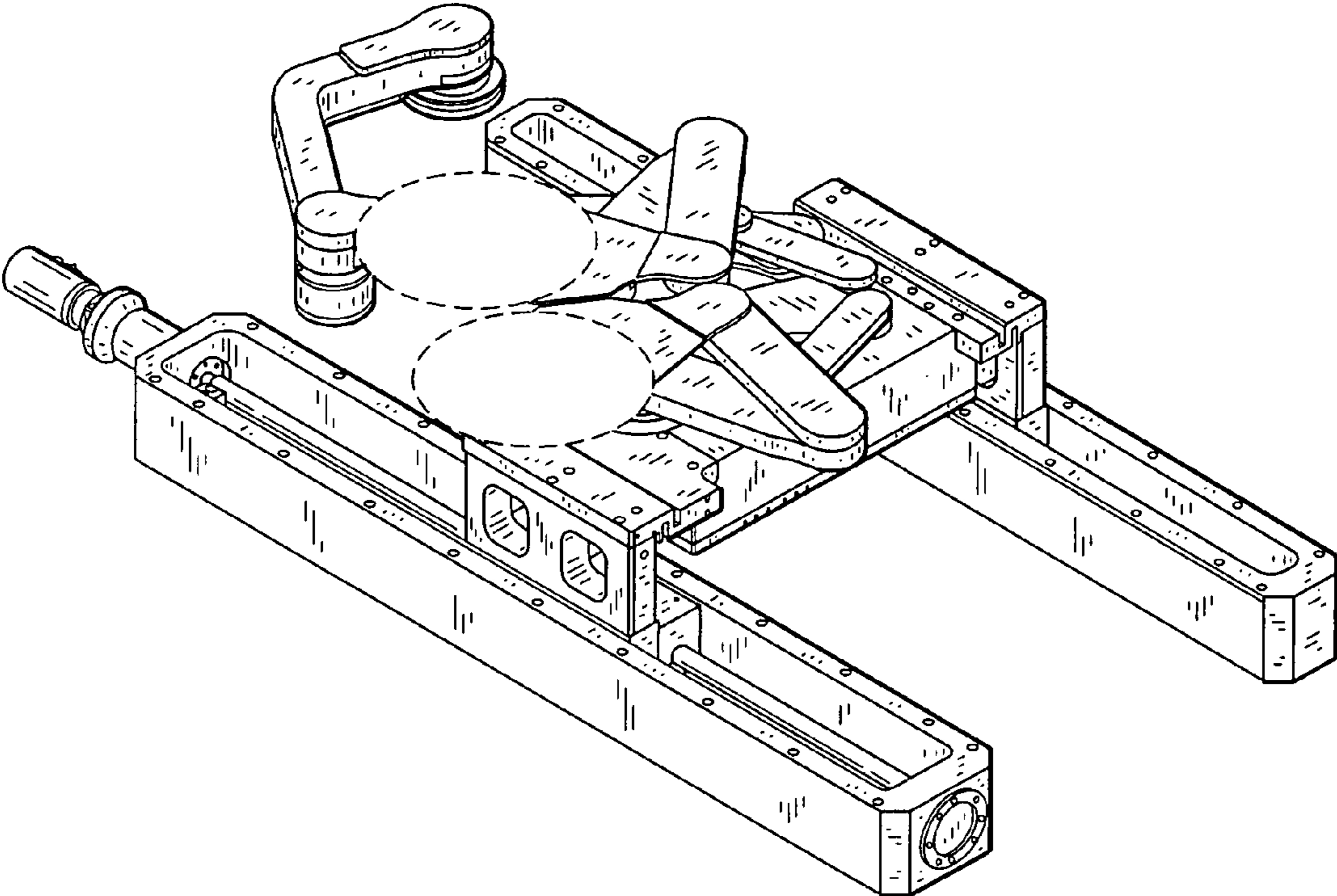


FIG. 14

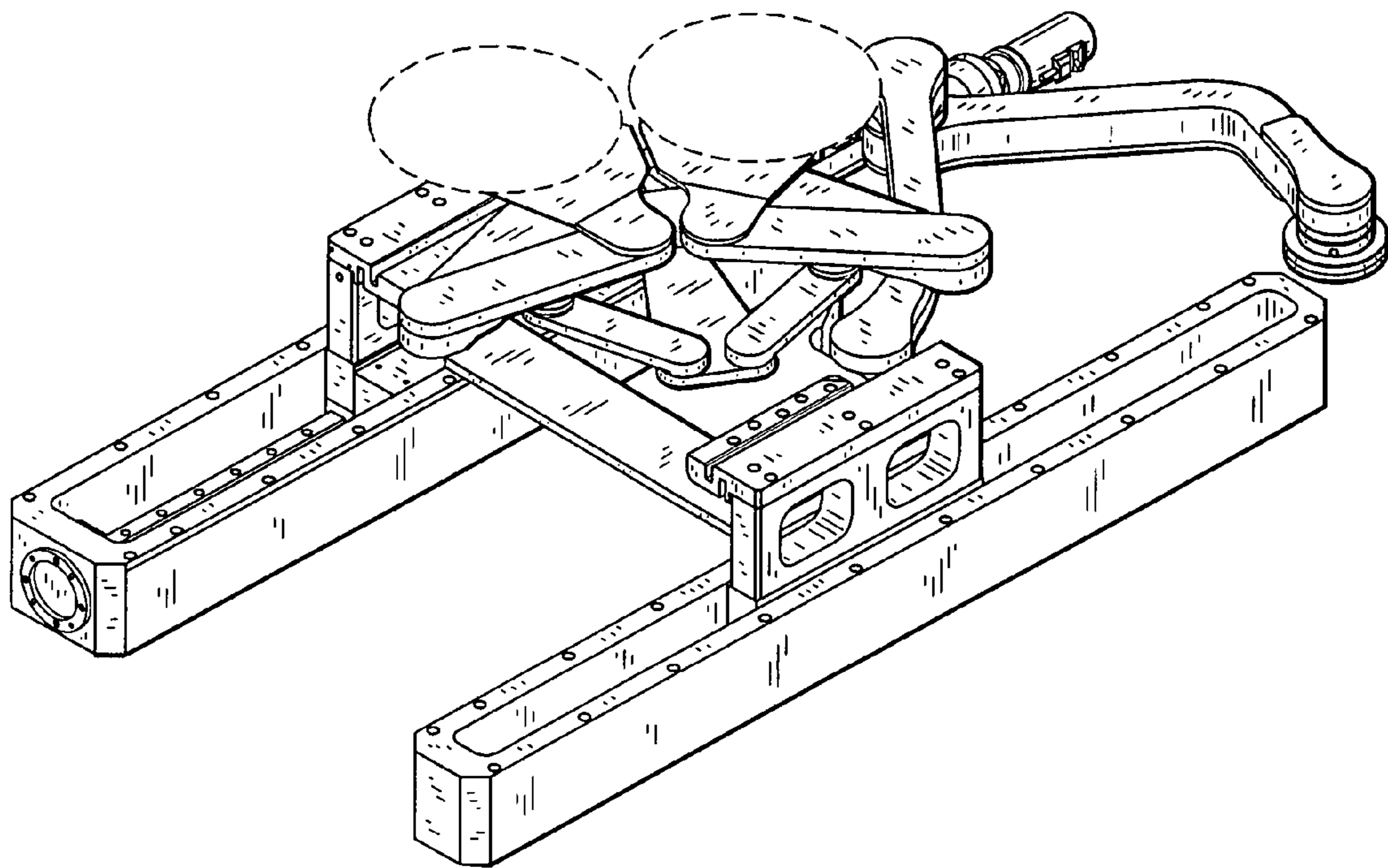


FIG. 15

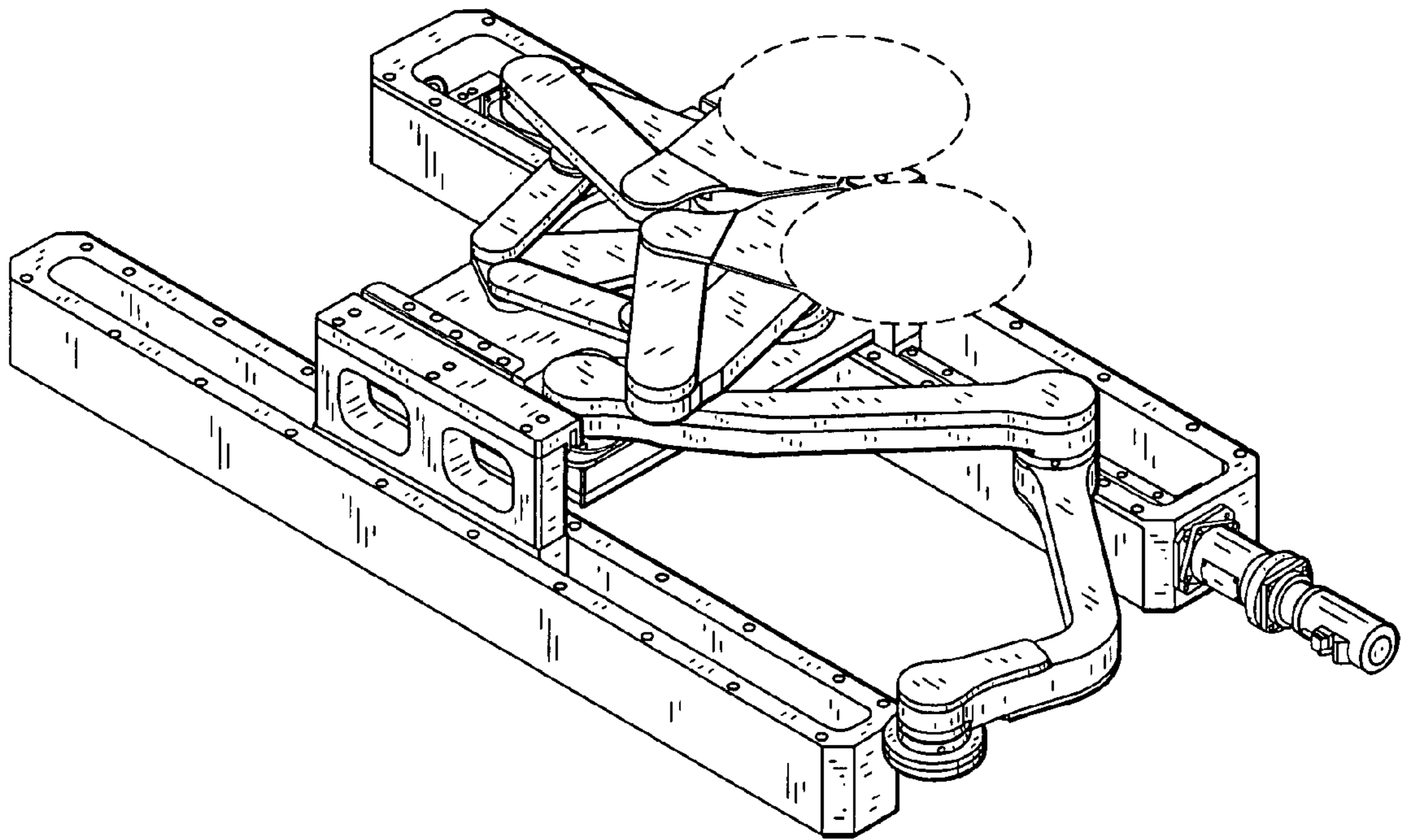


FIG. 16

