



US00D882657S

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

(10) **Patent No.:** **US D882,657 S**

(45) **Date of Patent:** **** Apr. 28, 2020**

(54) **JOINT DRIVING MEMBER FOR ROBOT**

(71) Applicant: **MITSUBISHI ELECTRIC CORPORATION**, Tokyo (JP)

(72) Inventors: **Noboru Kawaguchi**, Tokyo (JP); **Tomoya Hattori**, Tokyo (JP); **Masaki Haruna**, Tokyo (JP); **Koji Hirose**, Tokyo (JP); **Ken Ueda**, Tokyo (JP); **Shingo Kimura**, Tokyo (JP)

(73) Assignee: **Mitsubishi Electric Corporation**, Tokyo (JP)

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

(21) Appl. No.: **29/664,933**

(22) Filed: **Sep. 28, 2018**

(30) **Foreign Application Priority Data**

Mar. 29, 2018 (JP) 2018-006783

(51) **LOC (12) Cl.** **15-99**

(52) **U.S. Cl.**
USPC **D15/199**

(58) **Field of Classification Search**
USPC D15/199; D21/369, 578-583, 621, 622
CPC B25J 9/102; B25J 9/104; B25J 17/0241;
Y10T 74/20317; Y10T 74/20323
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 5,002,242 A * 3/1991 Nagai B25J 17/0241
248/49
- 5,099,707 A * 3/1992 Tori B25J 9/02
384/296
- 5,107,716 A * 4/1992 Torii B25J 9/02
384/296
- 5,119,753 A * 6/1992 Milad B23Q 1/5406
114/338

- 5,342,254 A * 8/1994 Sula B25J 9/102
475/223
- 5,593,293 A * 1/1997 Machino B25J 9/0009
414/729
- 5,740,699 A * 4/1998 Ballantyne B25J 17/0266
403/120
- 5,893,296 A * 4/1999 Rosheim G05G 5/03
74/490.03
- 6,151,981 A * 11/2000 Costa B25J 9/023
74/490.03
- 6,220,813 B1 * 4/2001 Launiere B23Q 1/50
198/468.6

(Continued)

Primary Examiner — Patricia A Palasik

(74) *Attorney, Agent, or Firm* — Studebaker & Brackett PC

(57) **CLAIM**

The ornamental design for a joint driving member for robot, as shown and described.

DESCRIPTION

FIG. 1 is a first perspective view of the front, right, and top sides of a joint driving member for robot showing our new design;

FIG. 2 is a second perspective view of the front, right, and bottom sides thereof;

FIG. 3 is a third perspective view of the rear, left, and bottom sides thereof;

FIG. 4 is a front view thereof;

FIG. 5 is a rear view thereof;

FIG. 6 is a left side view thereof;

FIG. 7 is a right side view thereof;

FIG. 8 is a top plan view thereof; and,

FIG. 9 is a bottom plan view thereof.

The broken lines shown represent portions of the joint driving member for robot and form no part of the claimed design. The dash-dot lines represent the boundary between the claimed design and unclaimed design and form no part of the claimed design.

1 Claim, 9 Drawing Sheets

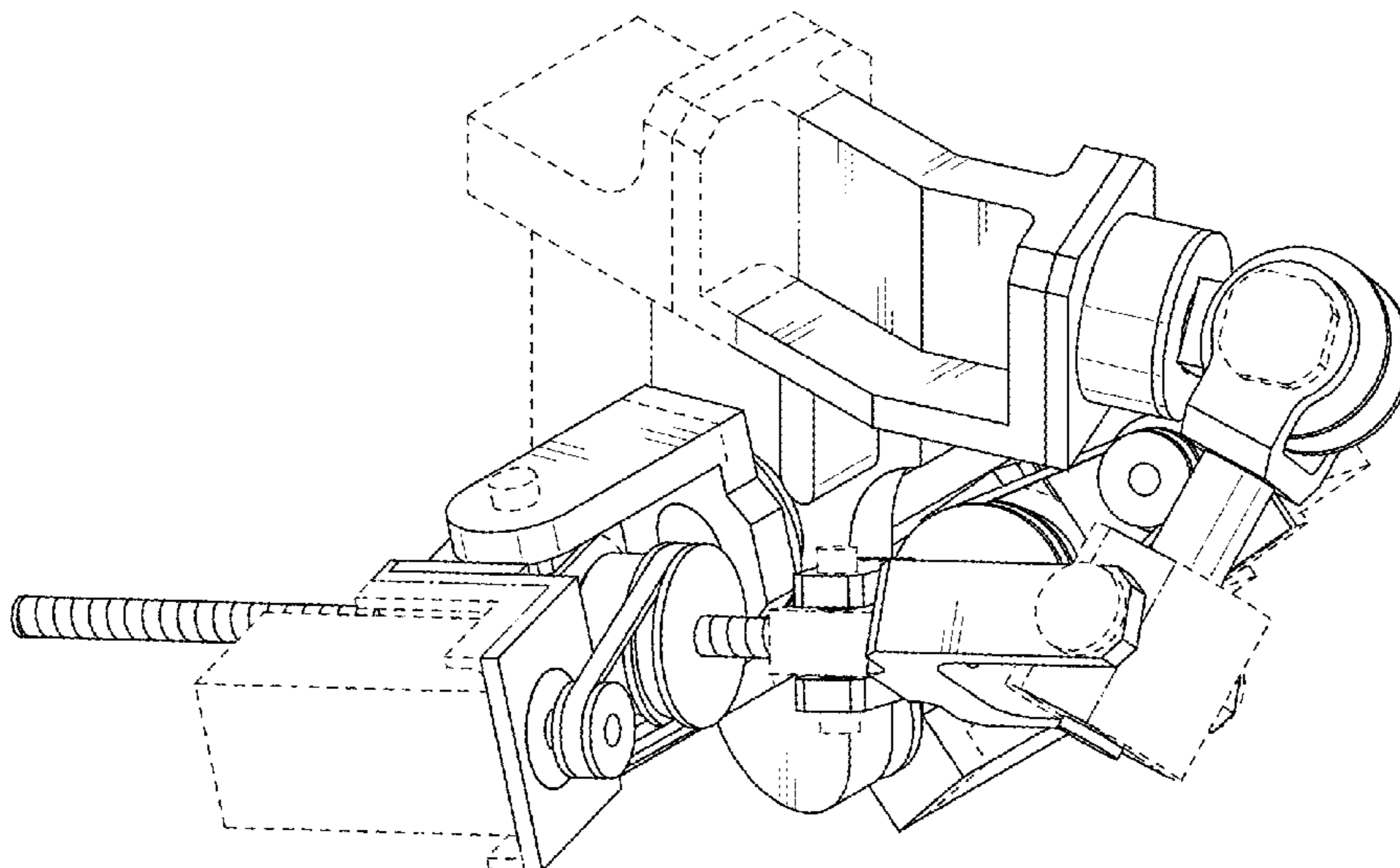


FIG. 1

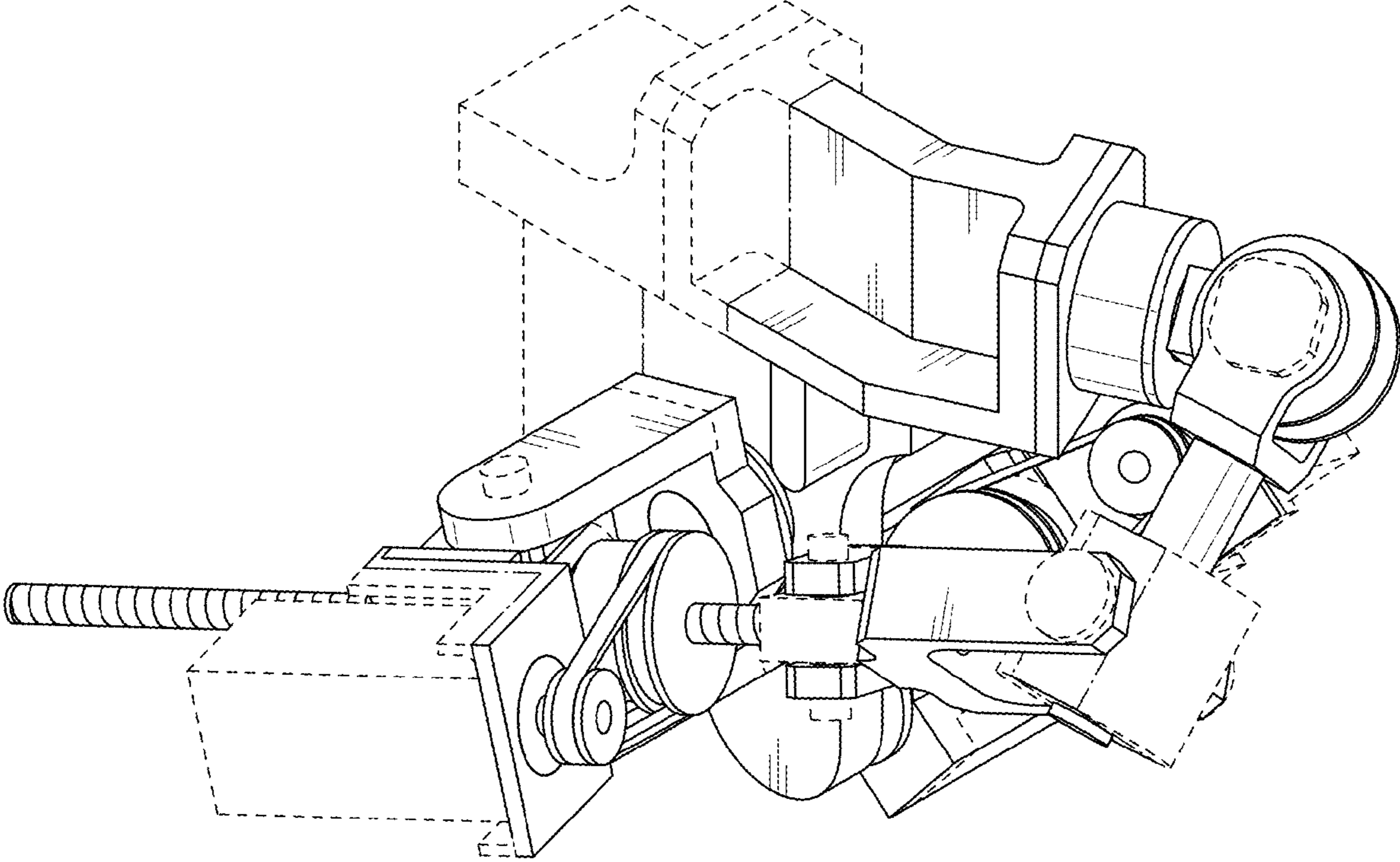


FIG. 2

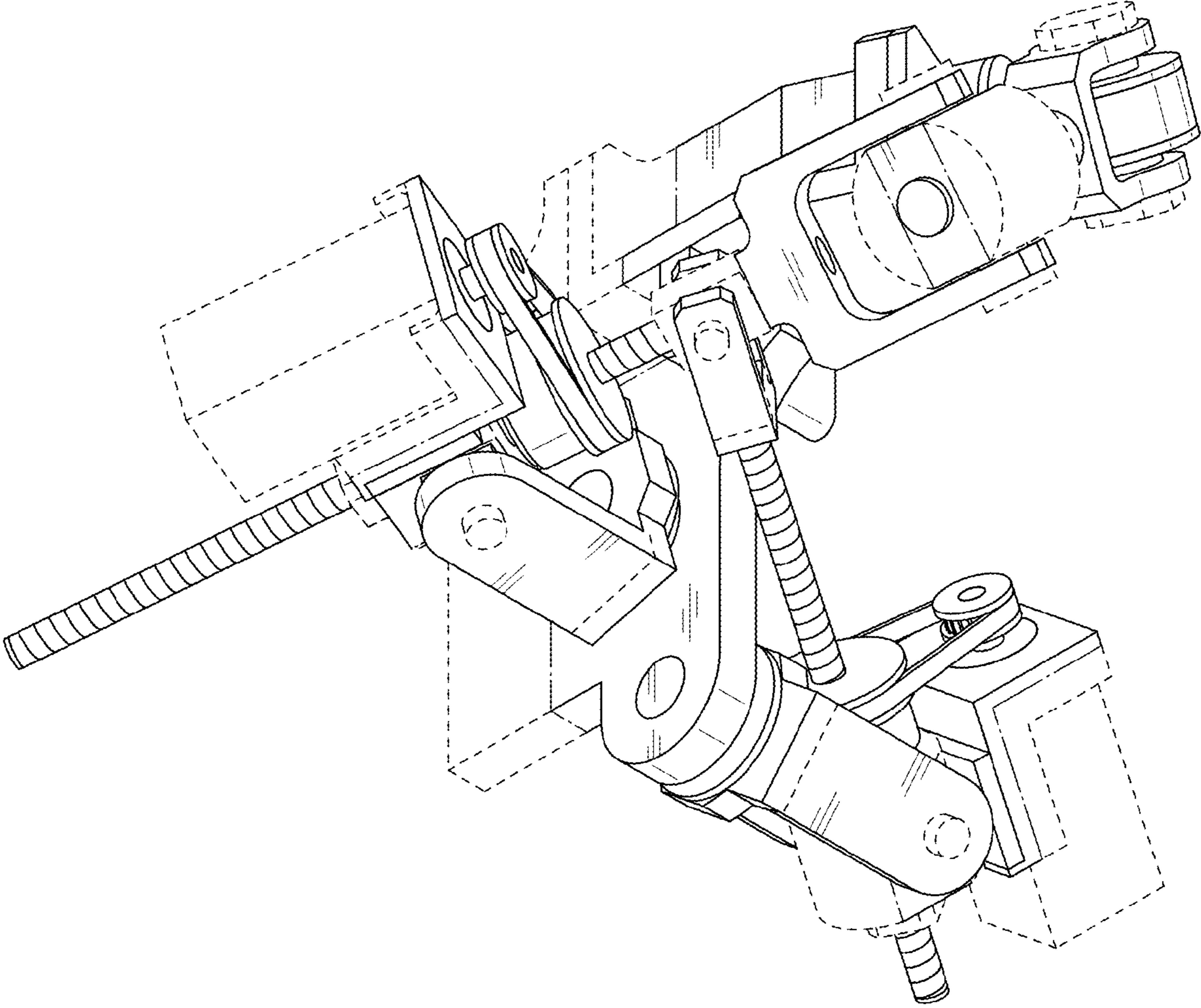


FIG. 3

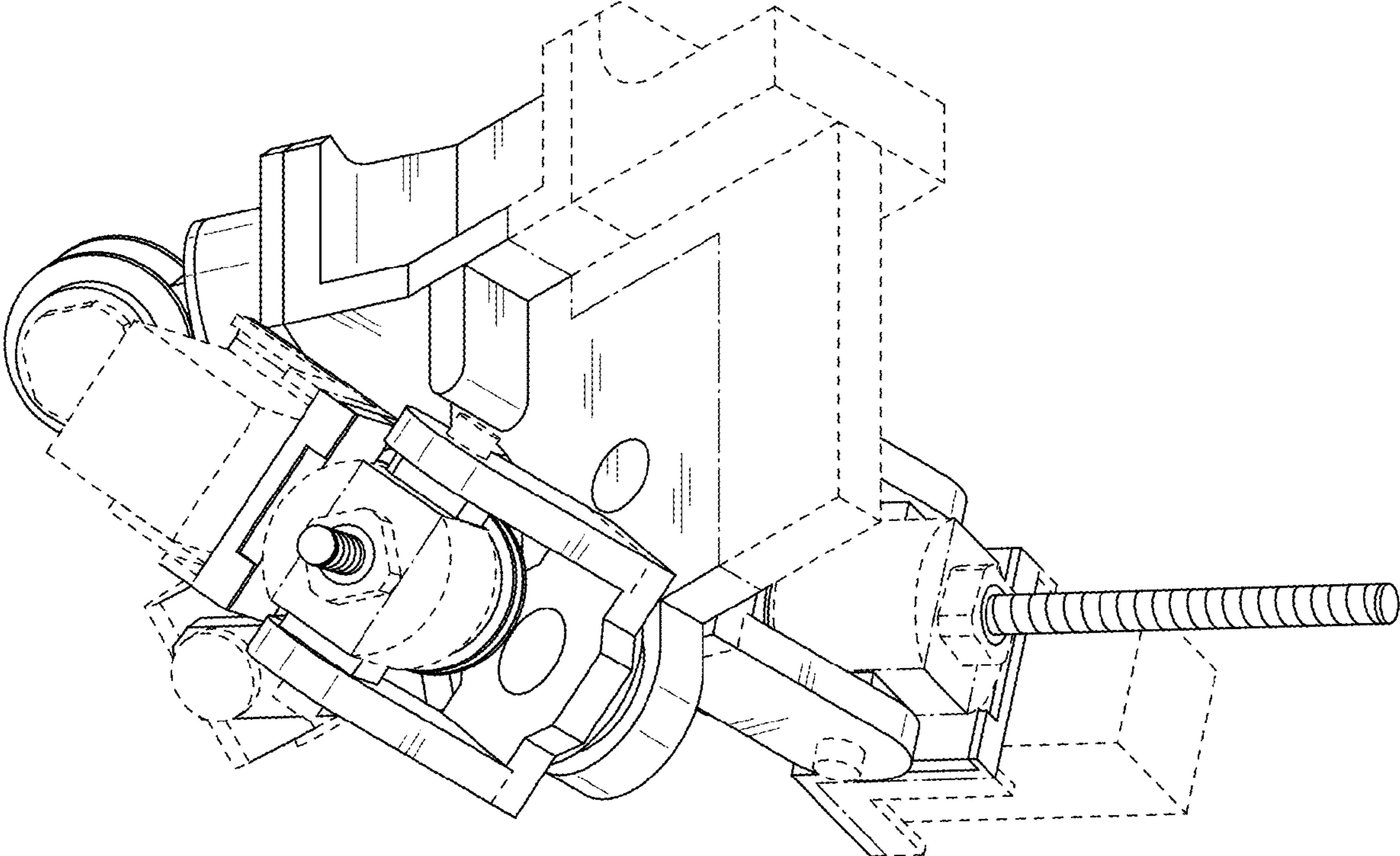


FIG. 4

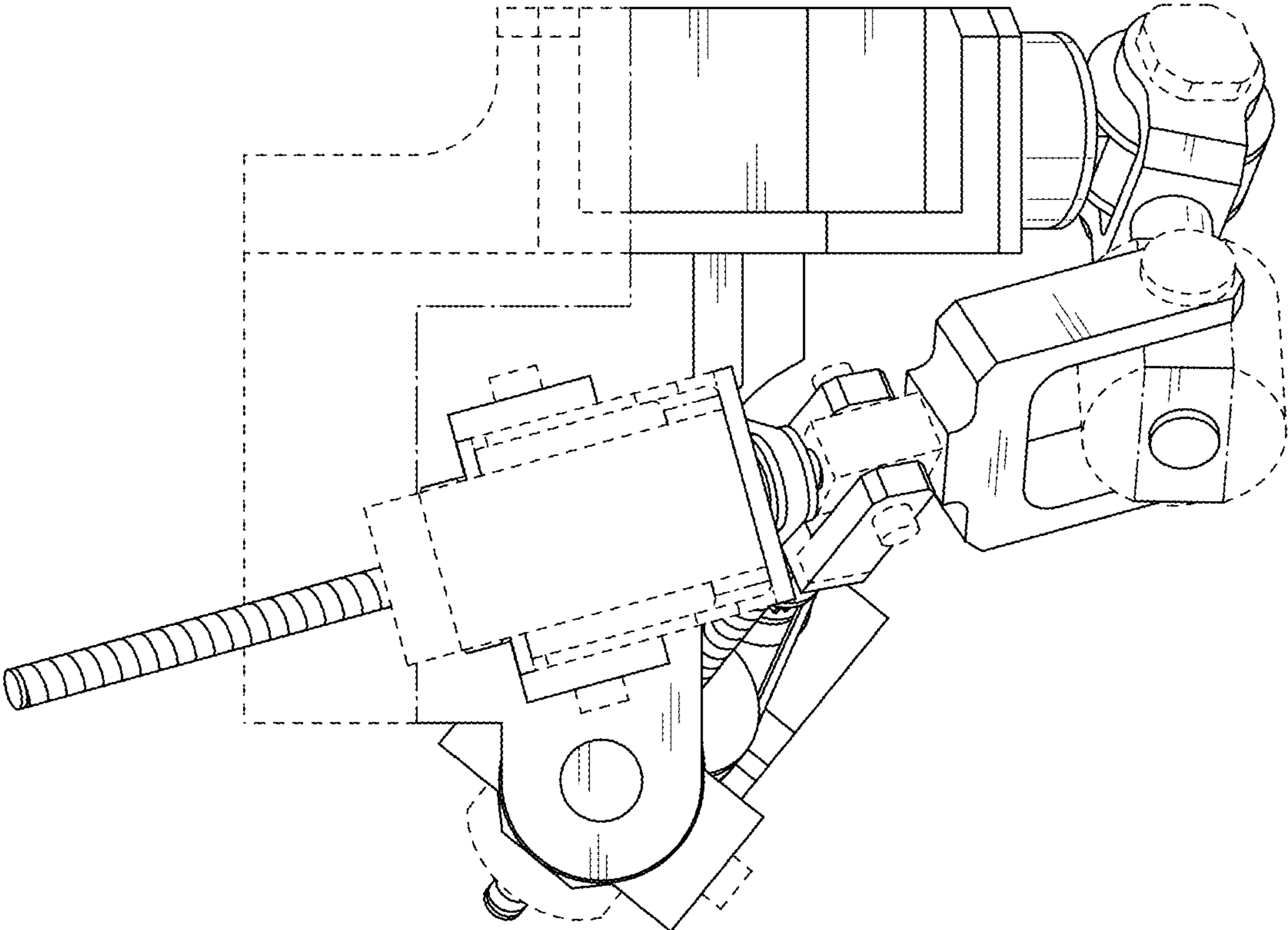


FIG. 5

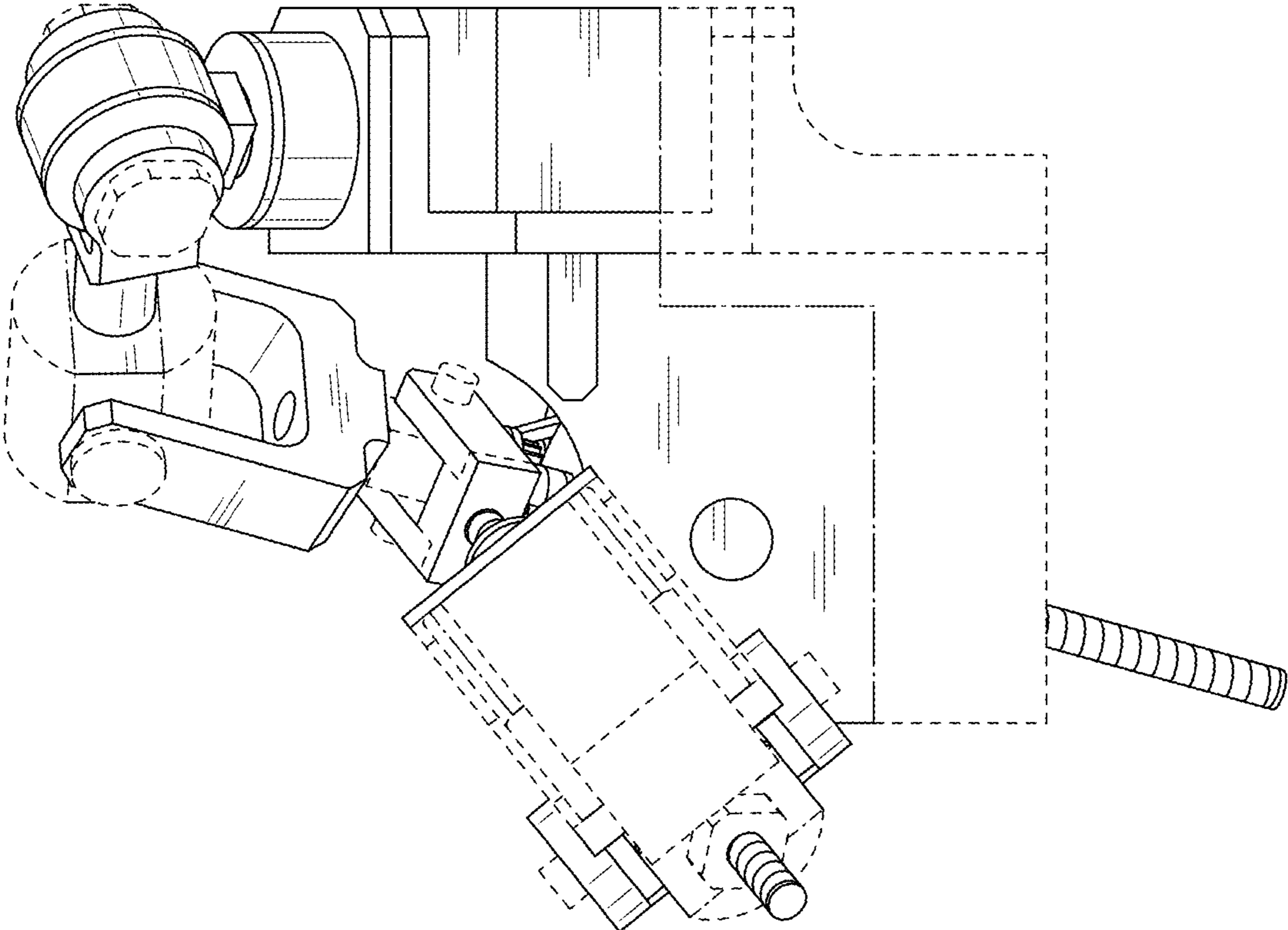


FIG. 6

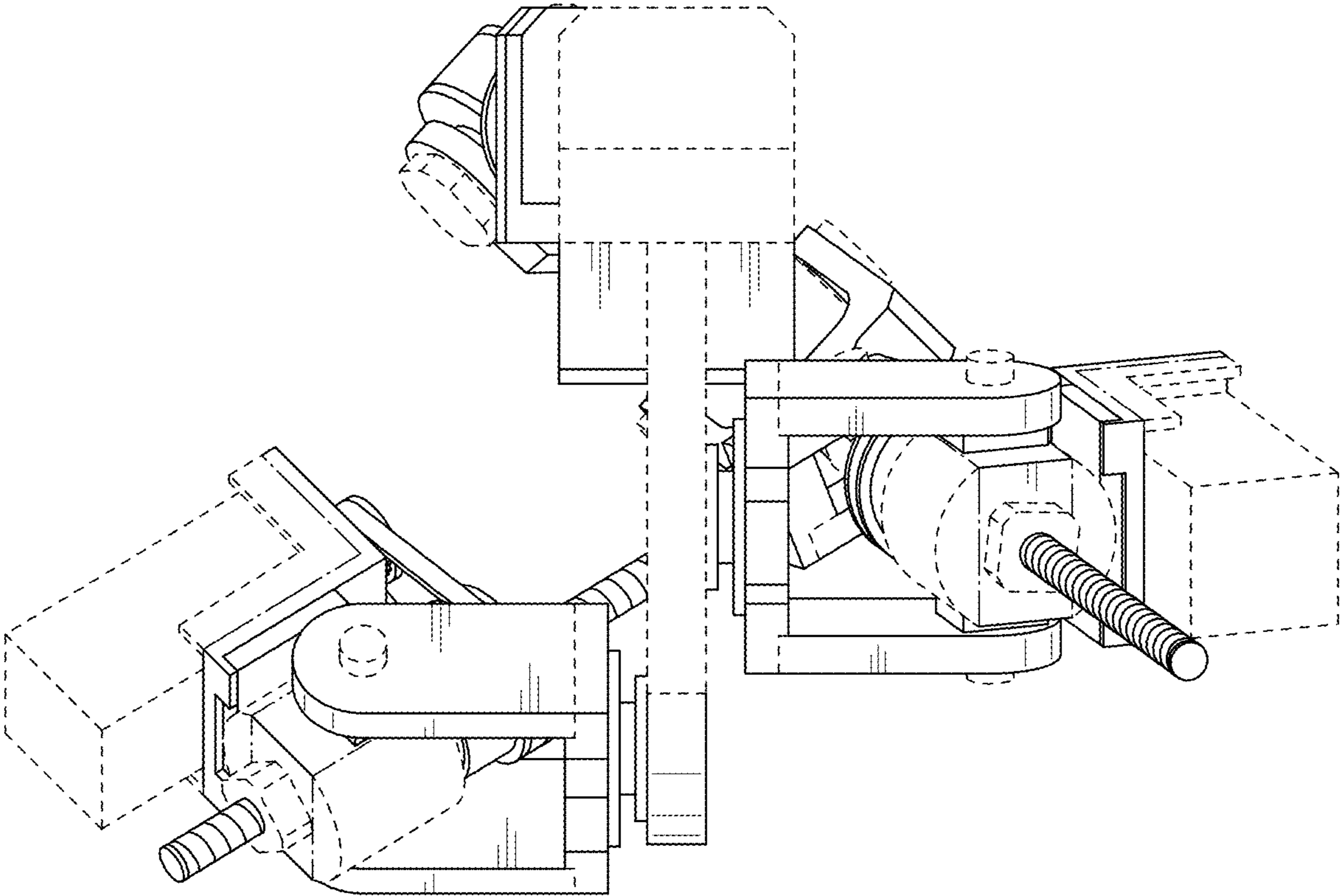


FIG. 7

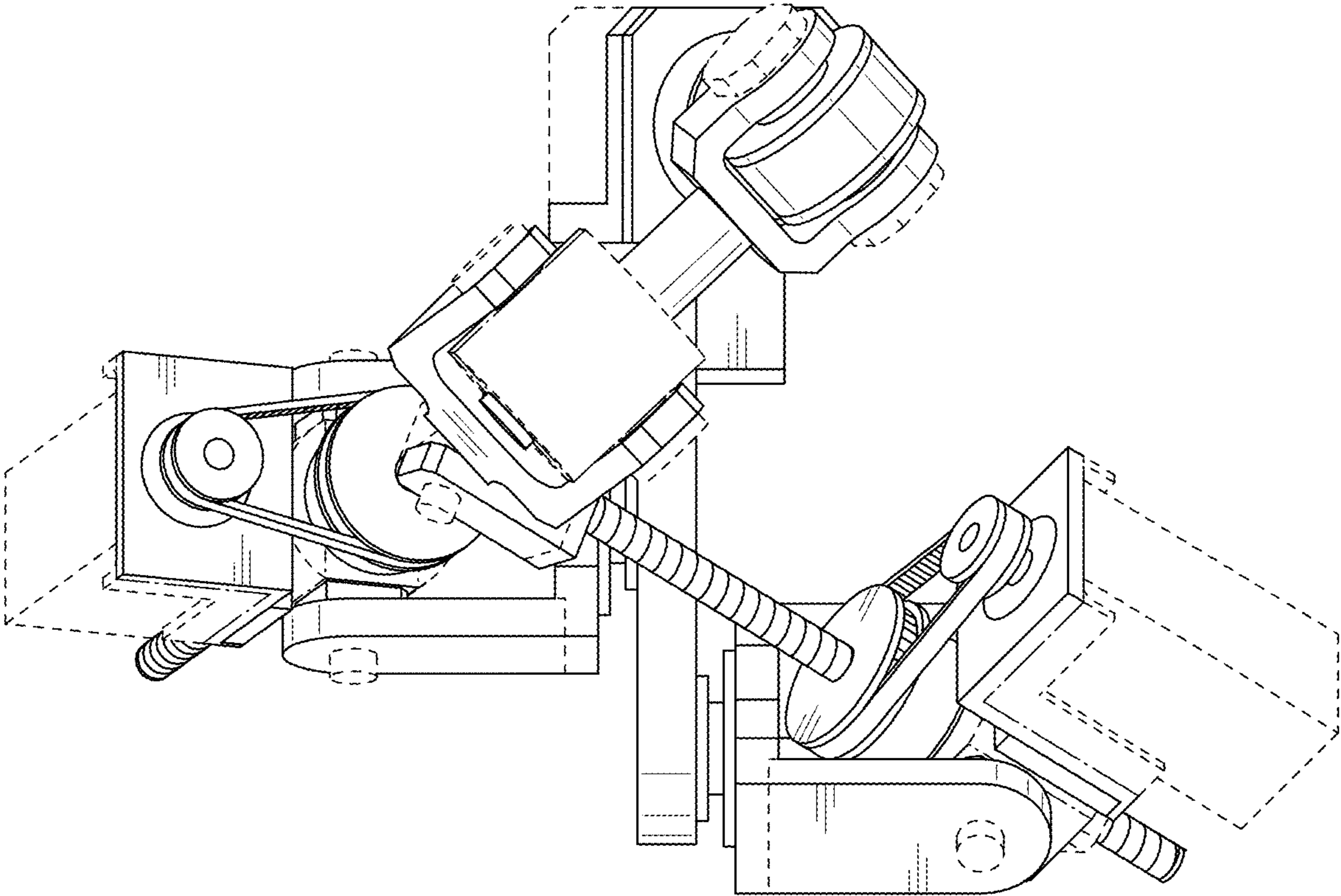


FIG. 8

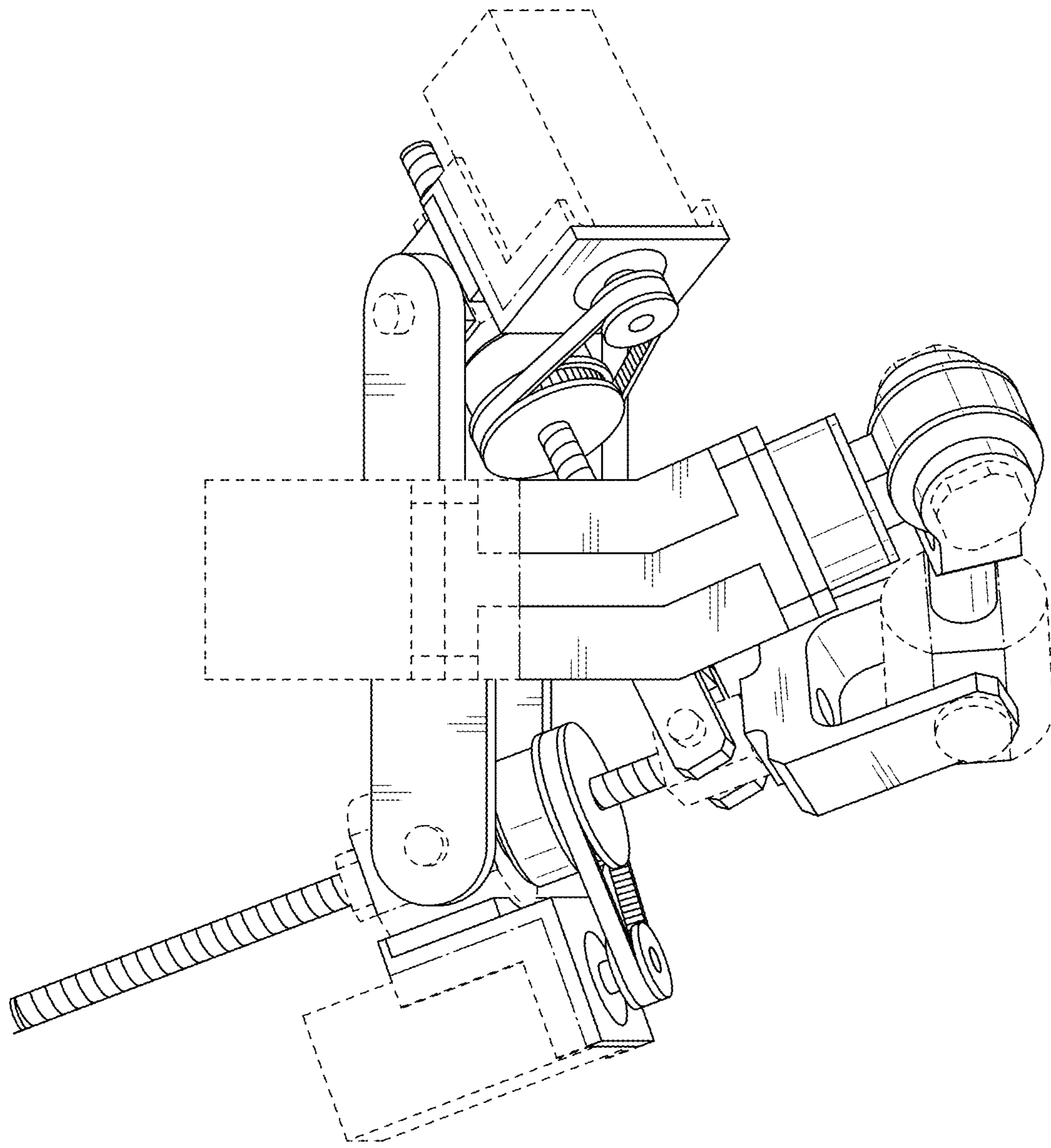


FIG. 9

