



US00D410086S

# United States Patent [19]

[11] Patent Number: Des. 410,086

Hacker et al.

[45] Date of Patent: \*\* May 18, 1999

[54] SHUNT SENSOR FOR BLOOD GAS MEASUREMENT

5,104,623	4/1992	Miller .....	422/82.06
5,128,019	7/1992	Karpf et al. ....	204/416
5,171,029	12/1992	Maxwell et al. ....	277/212 R
5,289,255	2/1994	Mullin et al. ....	356/246

[75] Inventors: **Thomas G. Hacker**, Anaheim; **Ronald G. Holder**, Laguna Niguel, both of Calif.

### FOREIGN PATENT DOCUMENTS

0 399 227 11/1990 European Pat. Off. .

[73] Assignee: **Minnesota Mining and Manufacturing Company**, St. Paul, Minn.

### OTHER PUBLICATIONS

CDI<sup>198</sup> 400 Extracorporeal Blood Gas Monitoring System, Operator's Manual, CDI, 3M Health Care (In existence prior to Feb. 26, 1997).

[\*\*] Term: **14 Years**

*Primary Examiner*—Stella Reid  
*Attorney, Agent, or Firm*—F. Andrew Ubel

[21] Appl. No.: **29/084,339**

[22] Filed: **Feb. 26, 1998**

### [57] CLAIM

### Related U.S. Application Data

The ornamental design for a shunt sensor for blood gas measurement, as shown and described.

[63] Continuation-in-part of application No. 08/810,954, Feb. 27, 1997, abandoned.

### DESCRIPTION

[51] LOC (6) Cl. .... **24-01**

[52] U.S. Cl. .... **D24/169**

[58] Field of Search ..... D24/165, 169, D24/164, 129; 422/68.1, 81, 82, 86, 48, 55, 57, 82.06, 82.07, 101; 210/103, 232, 445; 436/68, 138, 172; 356/246, 39-41

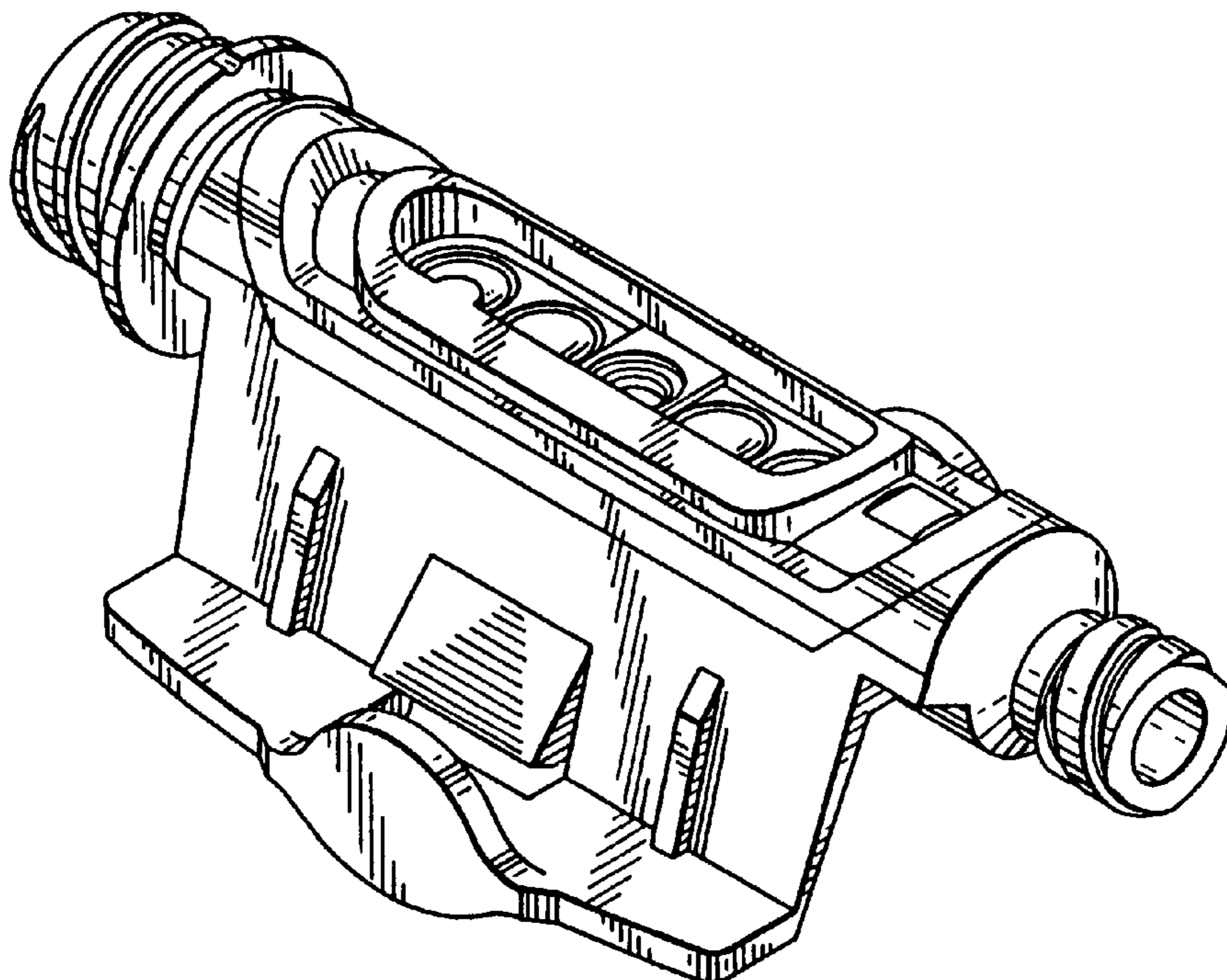
FIG. 1 is a first perspective view of a shunt sensor for blood gas measurement showing our new design; FIG. 2 is a second perspective view thereof; FIG. 3 is a first end view thereof; FIG. 4 is a left side view thereof, the right side view being a mirror image thereof; FIG. 5 is a second end view thereof; FIG. 6 is a top view thereof; FIG. 7 is a bottom view thereof; and, FIG. 8 is a perspective view thereof, with the broken line showing of the caps and filter assemblies being for illustrative purposes only and forming no part of the claimed design.

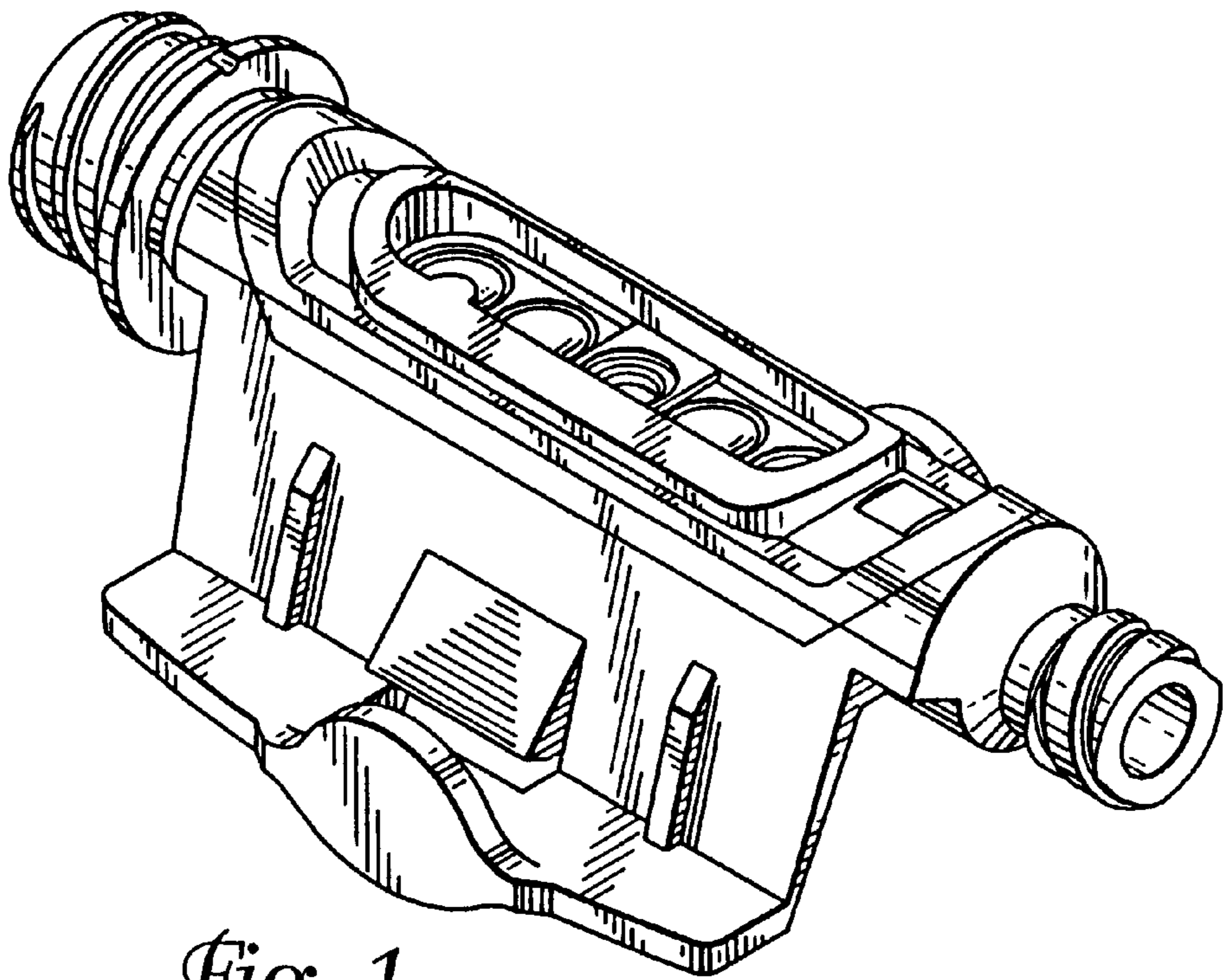
### [56] References Cited

#### U.S. PATENT DOCUMENTS

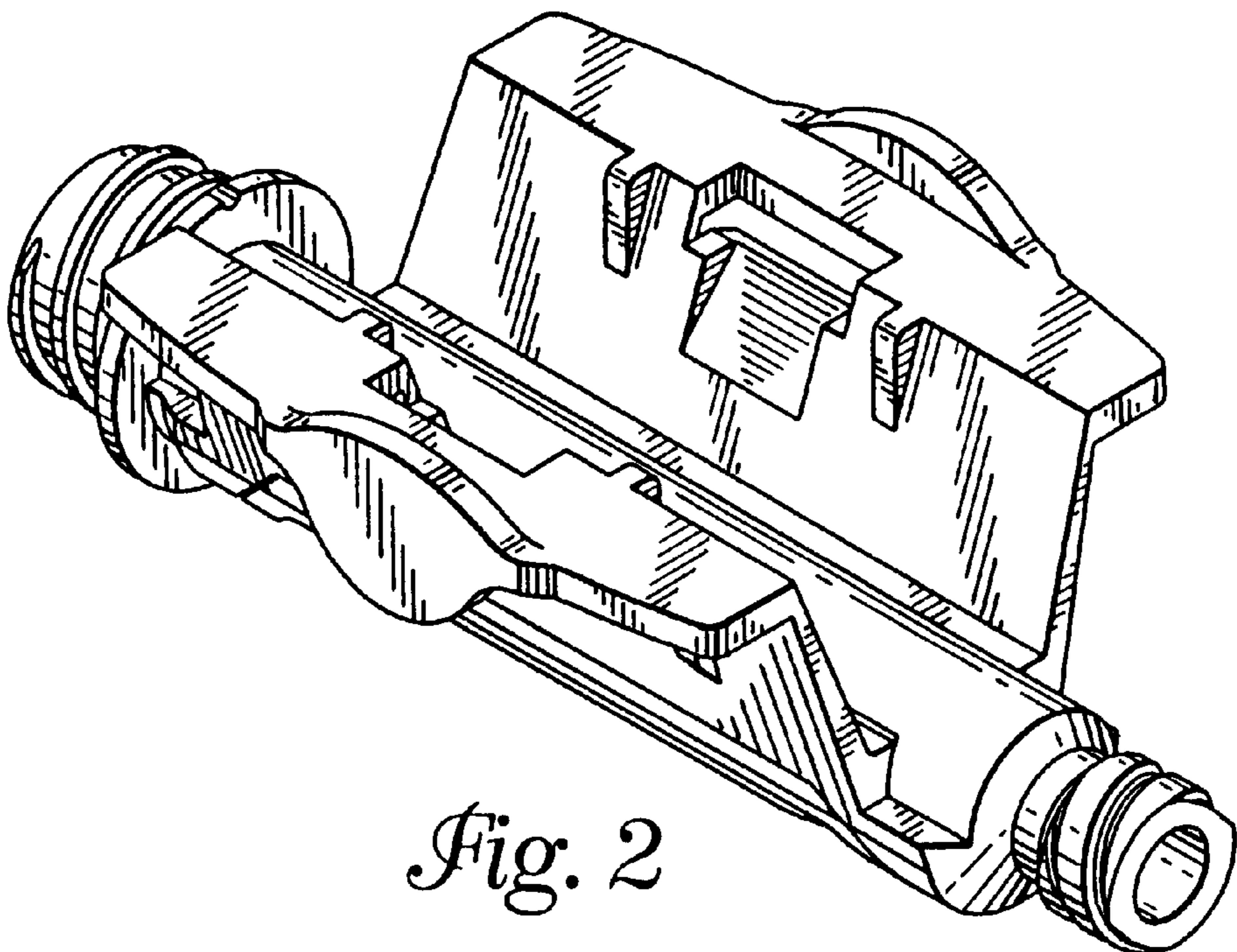
D. 326,718	6/1992	Maxwell et al. ....	D24/169
D. 348,734	7/1994	Arp .....	D24/224
D. 353,198	12/1994	Blasdell et al. ....	D24/164
4,444,498	4/1984	Heinemann .....	356/246
4,640,820	2/1987	Cooper .....	422/68
4,745,279	5/1988	Karkar et al. ....	250/343
4,786,474	11/1988	Cooper .....	422/68

**1 Claim, 4 Drawing Sheets**

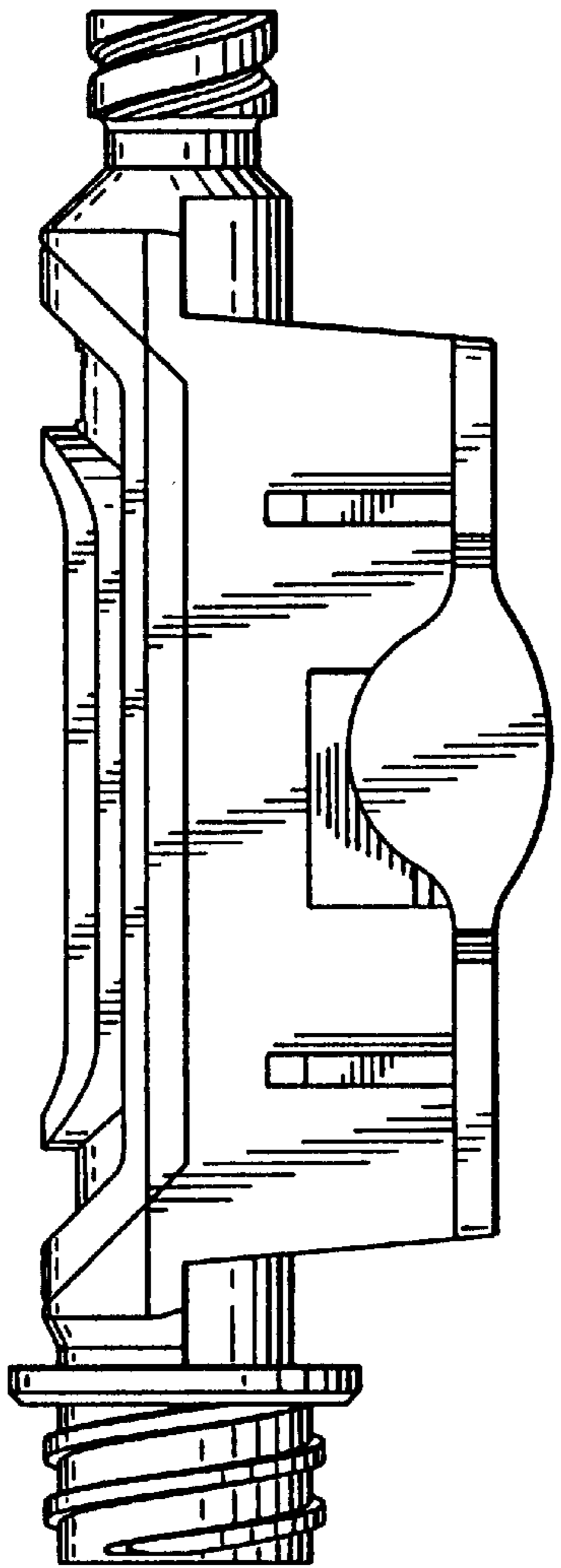




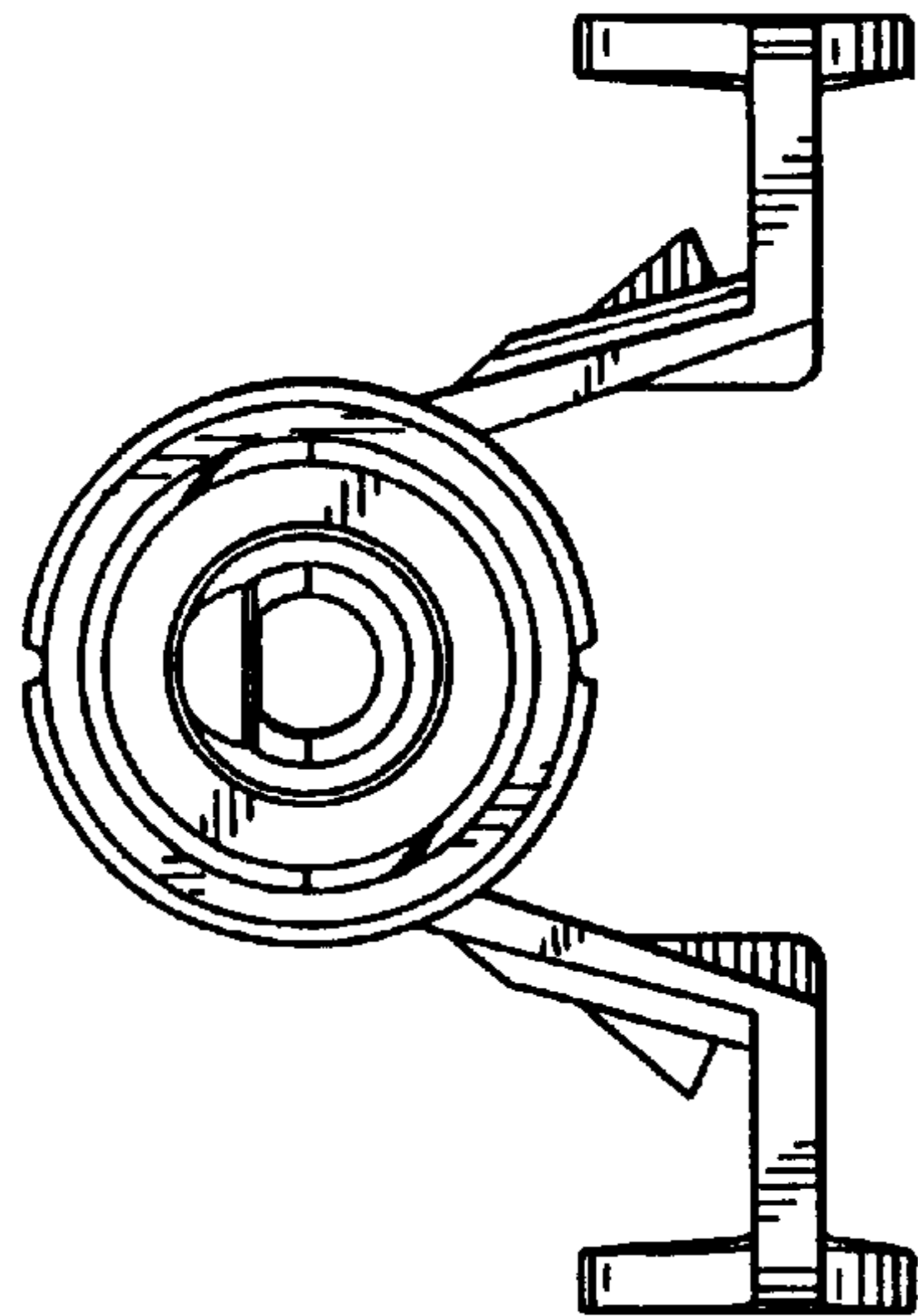
*Fig. 1*



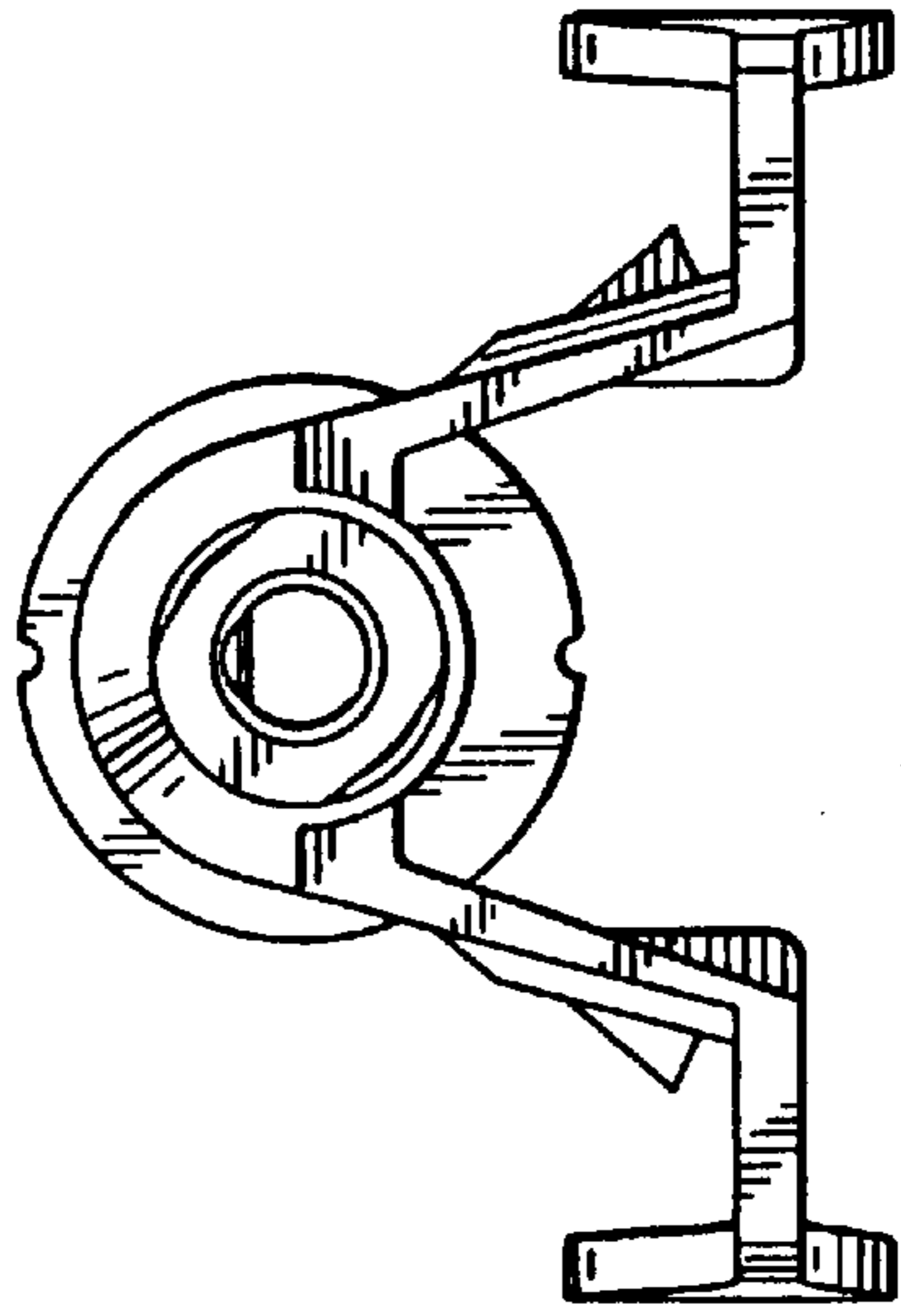
*Fig. 2*



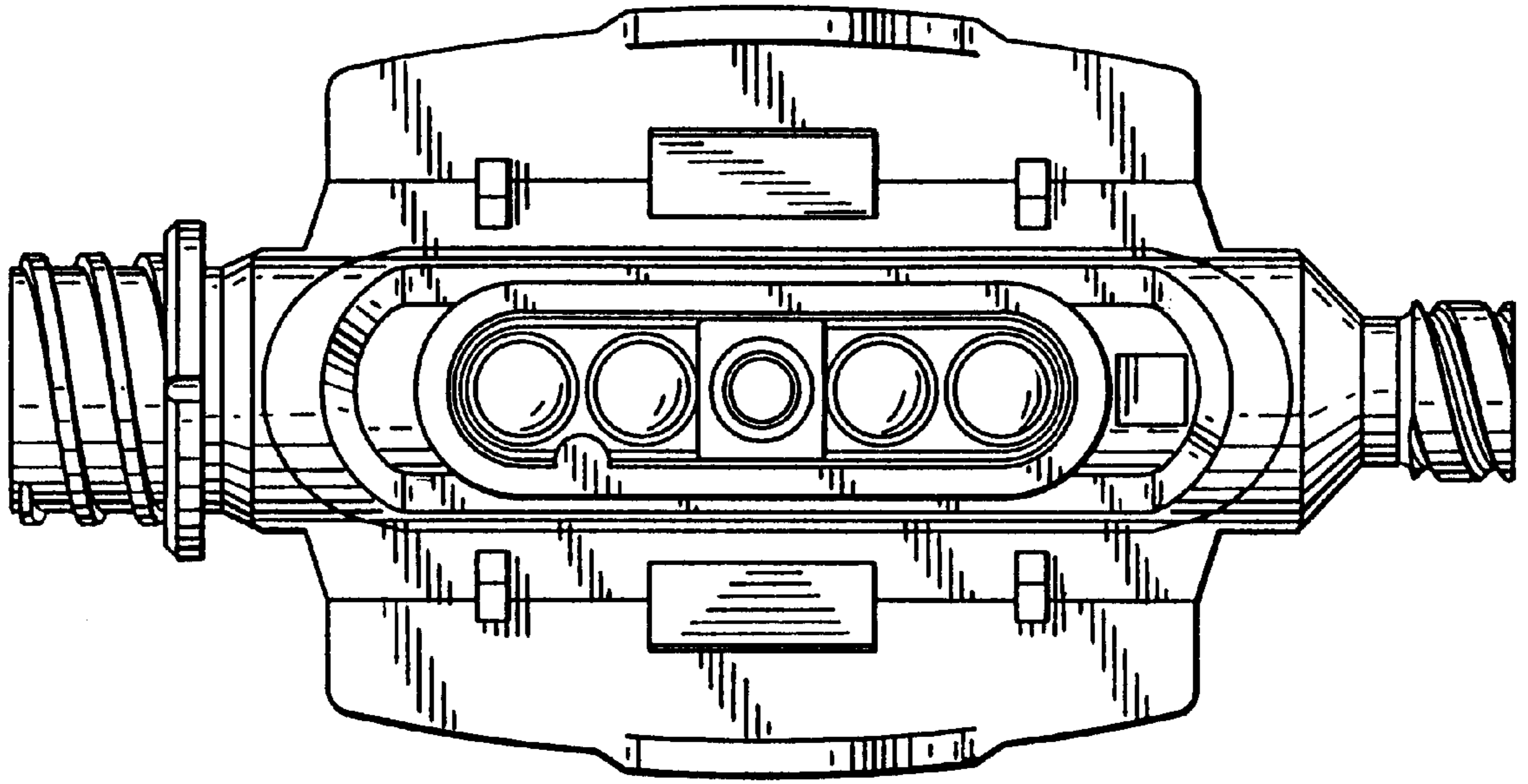
*Fig. 4*



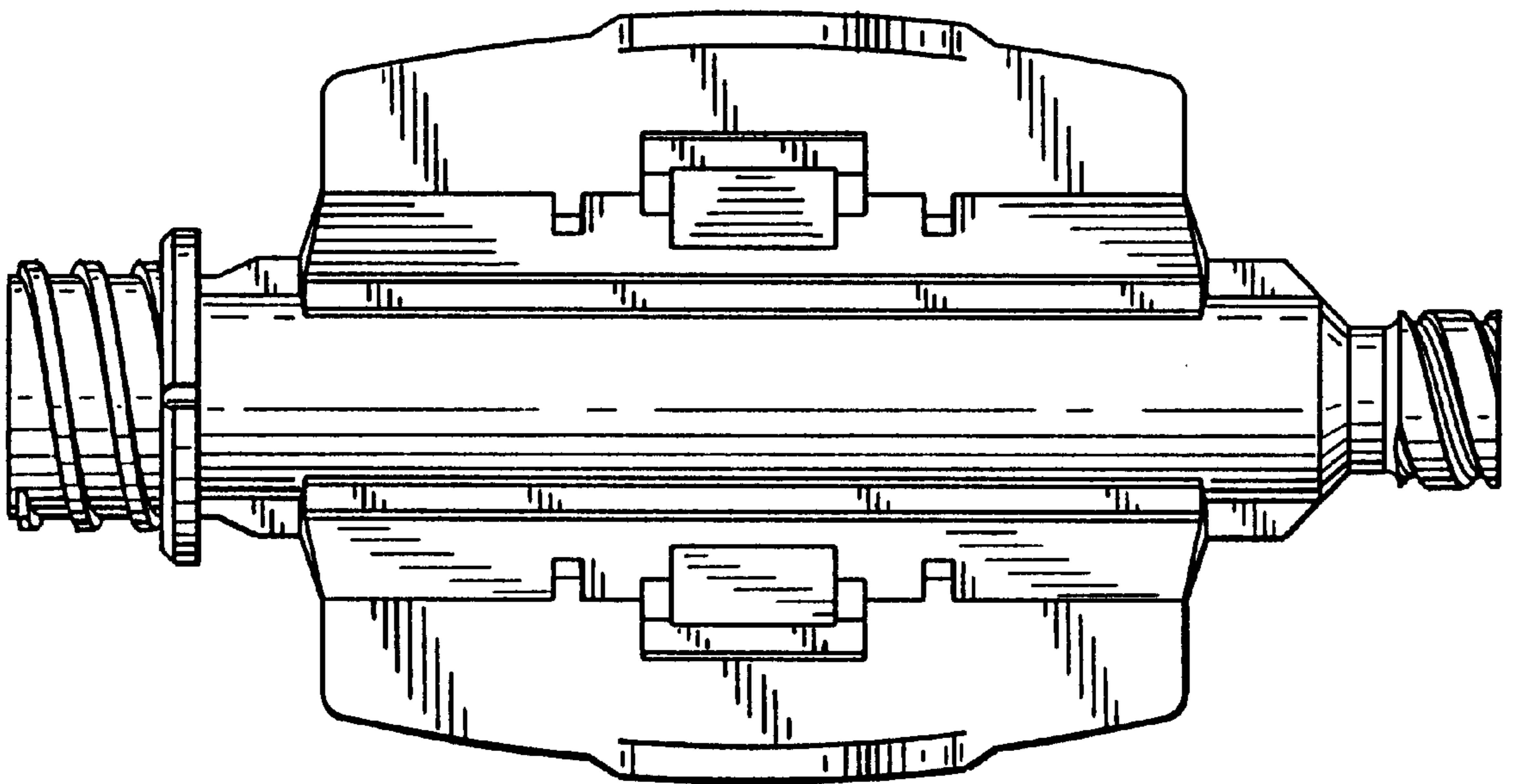
*Fig. 3*



*Fig. 5*



*Fig. 6*



*Fig. 7*

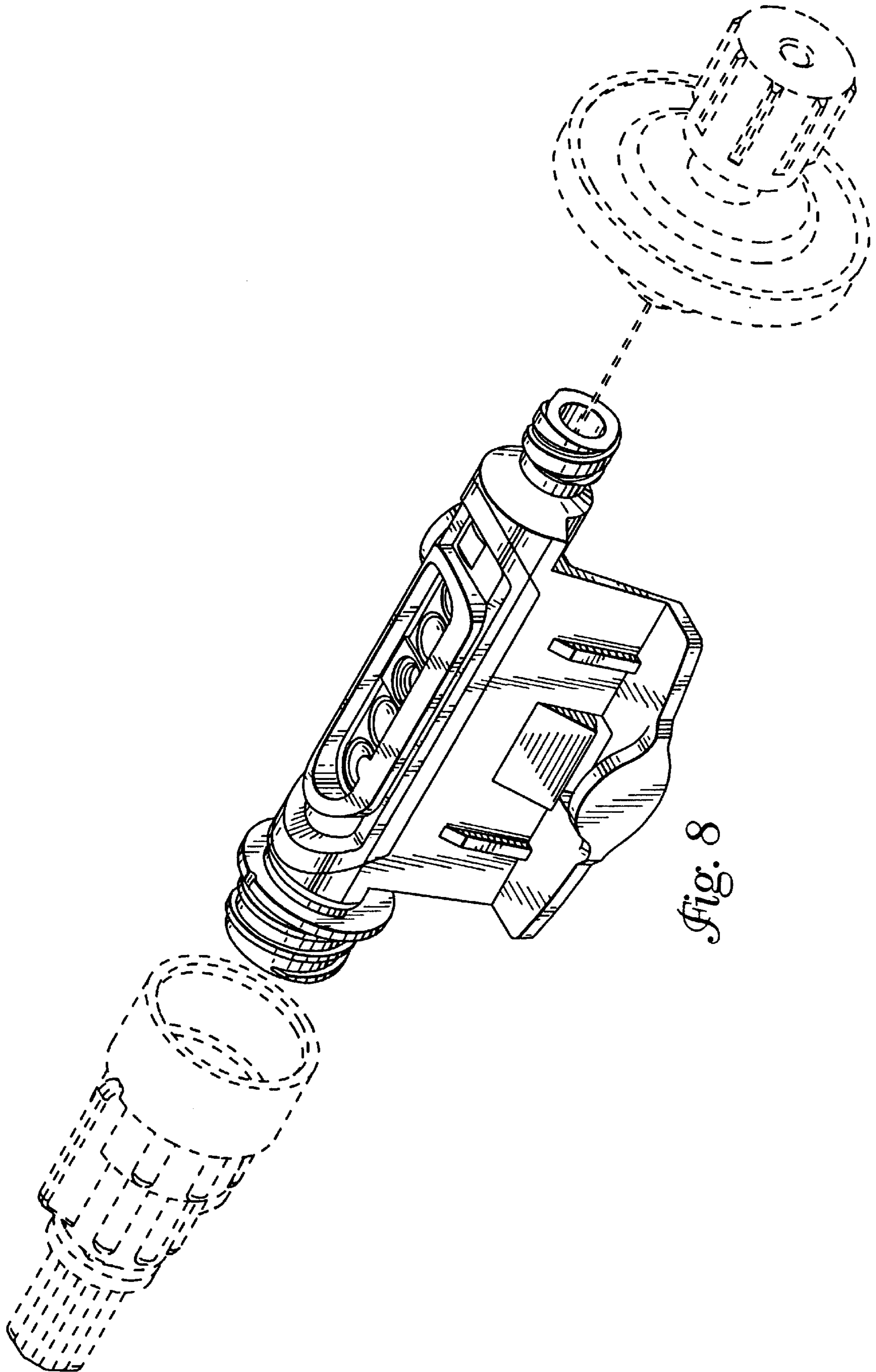


Fig. 8