US00D475795S

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

(10) **Patent No.: US D475,795 S**
(45) **Date of Patent: ** Jun. 10, 2003**

(54) **LIQUID FLOW BUBBLE RELEASE DEVICE**

(76) Inventors: **Michael K. Johnson**, 6314 Warwick Dr., Pleasant Garden, NC (US) 27313; **Cedric S. Reynolds**, 1621 S. College Park, Greensboro, NC (US) 27403

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

(21) Appl. No.: **29/159,056**

(22) Filed: **Apr. 15, 2002**

(51) **LOC (7) Cl.** **24-01**
(52) **U.S. Cl.** **D24/232**; D24/216
(58) **Field of Search** D24/111, 216, D24/232, 231, 233; D10/81; 435/289.1, 296.1, 290.4, 293.1, 295.2, 297.2, 300.1, 299.1, 287.1

(56) **References Cited**

U.S. PATENT DOCUMENTS

D311,061	S	* 10/1990	Vrana et al.	D24/232
5,049,492	A	9/1991	Sauer et al.	
5,246,560	A	9/1993	Nekoksa et al.	
5,520,640	A	5/1996	Utterberg	
5,763,266	A	6/1998	Palsson et al.	
5,928,889	A	7/1999	Bakich et al.	
6,046,806	A	4/2000	Thompson	
6,171,484	B1	1/2001	Schnell et al.	
6,391,541	B1 *	5/2002	Petersen et al.	435/287.1
6,391,638	B1 *	5/2002	Shaaltiel	435/289.1

OTHER PUBLICATIONS

Methods in Enzymology, vol. 310, Biofilms, Copyright 1999, pp. 22–25.
Gallik drawings of bubbletrap (4 pages).
Provisional draft patent application of Robert Gallik and Kalaimathee Narasimhan, was known by applicants before conecption of the present inveniton.

* cited by examiner

Primary Examiner—Ian Simmons

(57) **CLAIM**

The ornamental design for a liquid flow bubble release device, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of a liquid flow bubble release device embodying our design;

FIG. **2** is a left side elevational view thereof, the right side elevational view being a mirror image thereof;

FIG. **3** is a front elevational view thereof, the rear elevational view being a mirror image thereof;

FIG. **4** is a top plan view thereof;

FIG. **5** is a bottom plan view thereof;

FIG. **6** is another embodiment of a liquid flow bubble release device of our design as seen in a perspective view;

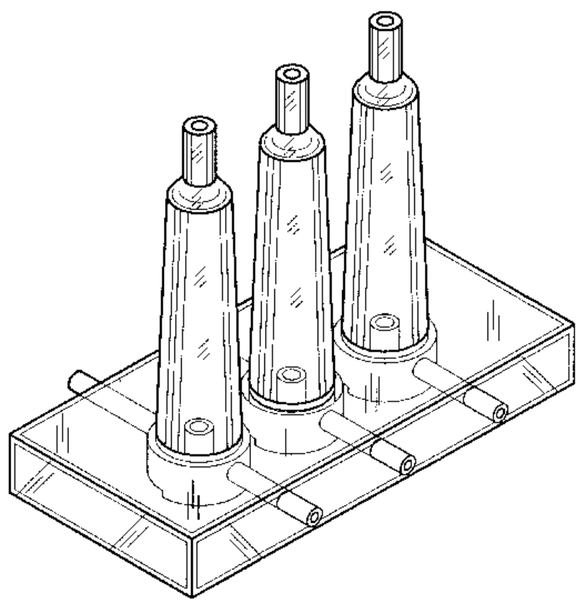
FIG. **7** is a left side elevational view thereof, the right side elevational view being a mirror image thereof;

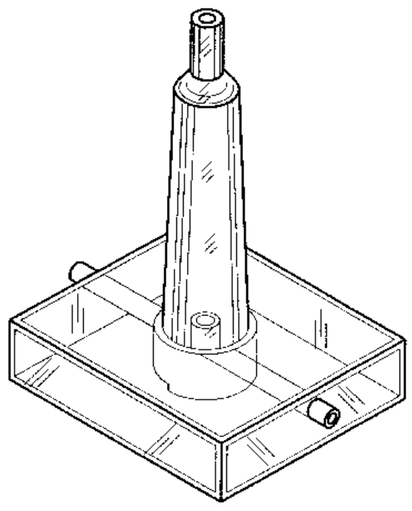
FIG. **8** is a front elevational view thereof, the rear elevational view being a mirror image thereof;

FIG. **9** is a top plan view thereof; and,

FIG. **10** is a bottom plan view thereof.

1 Claim, 6 Drawing Sheets





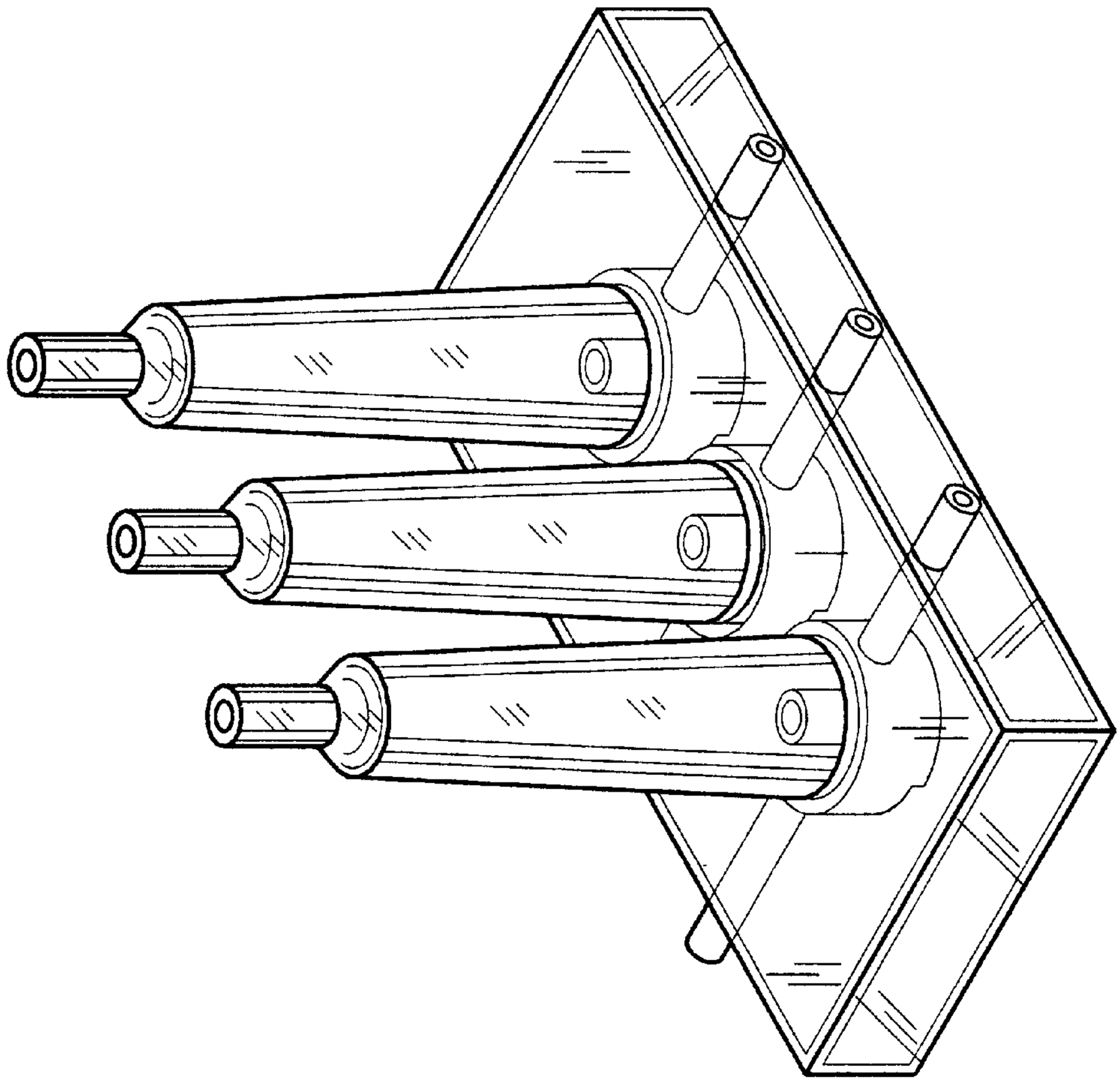


FIG. 1

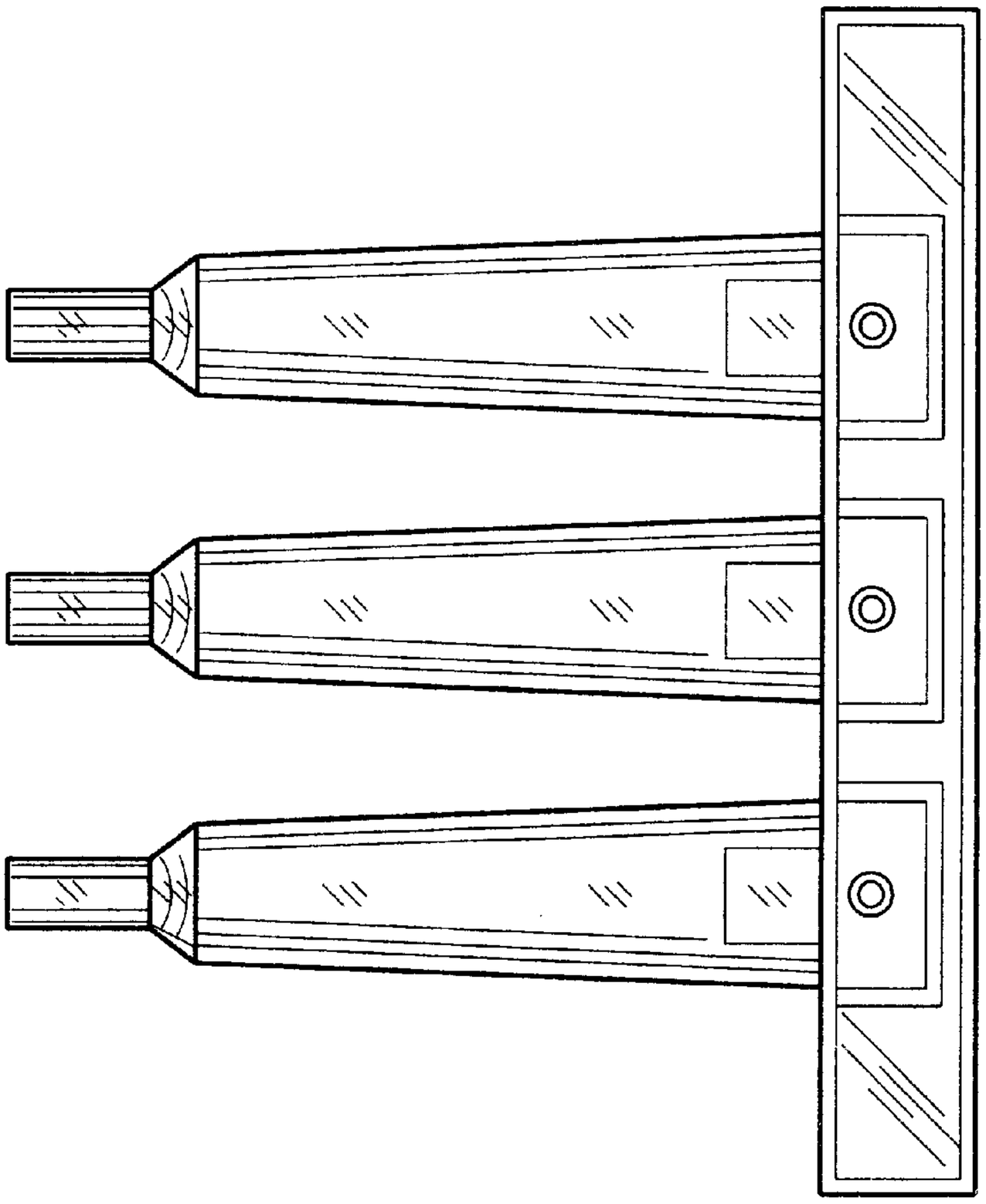


FIG. 3

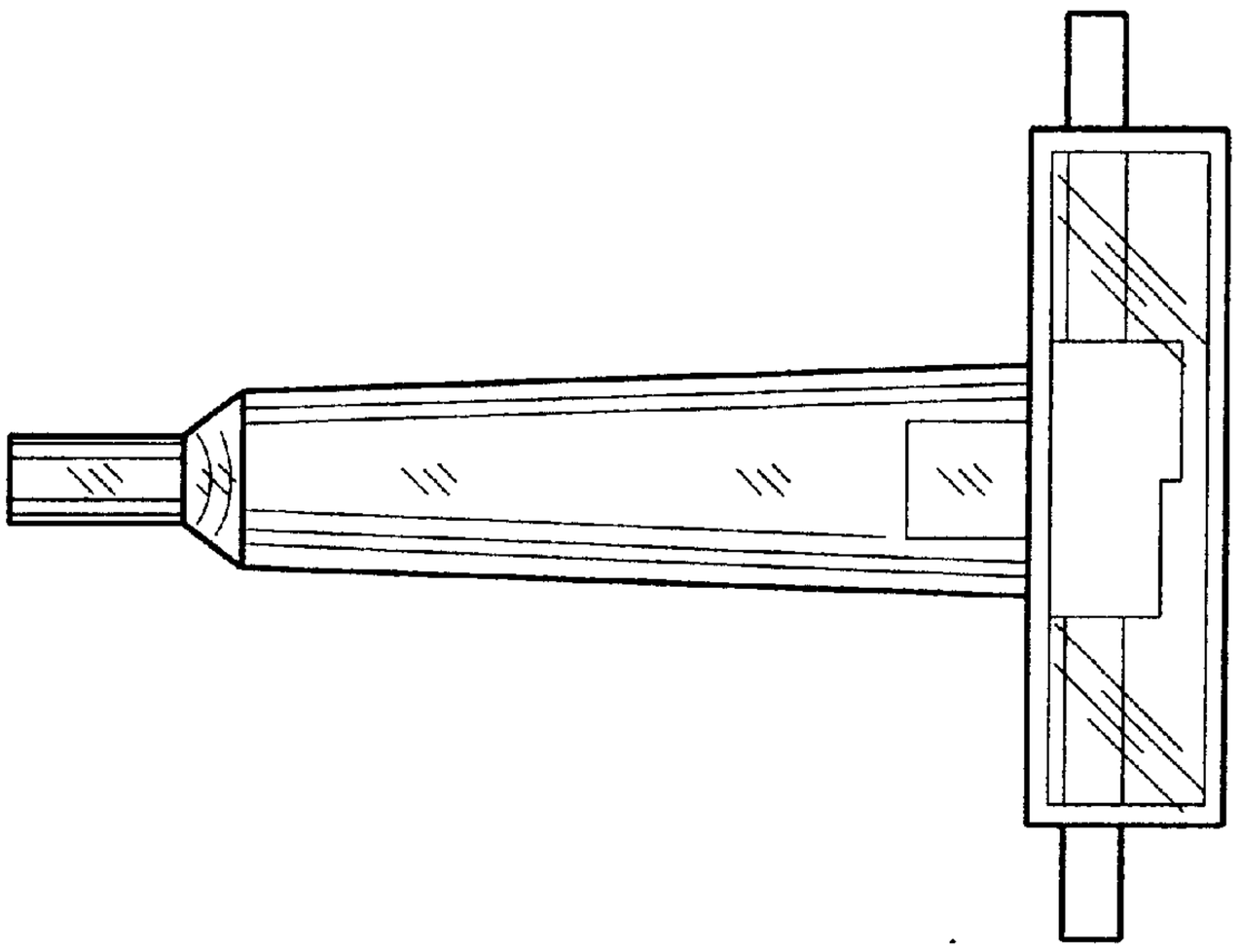


FIG. 2

FIG. 4

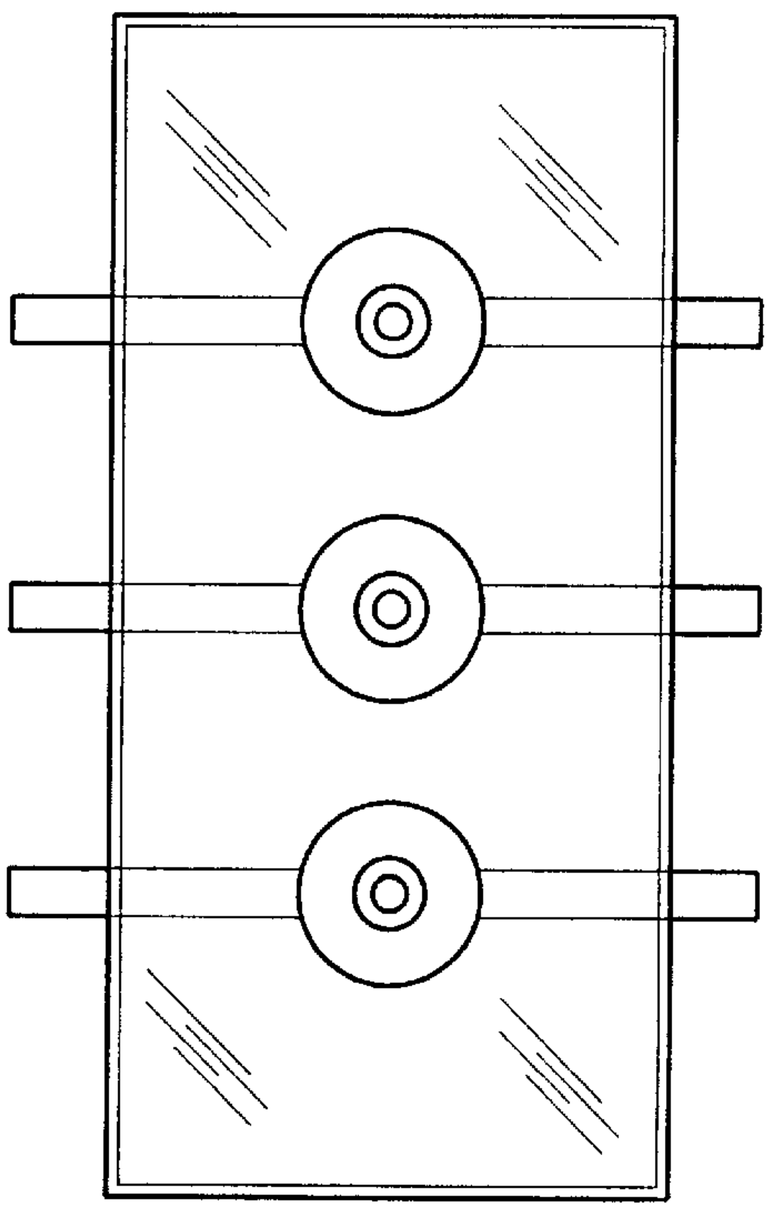
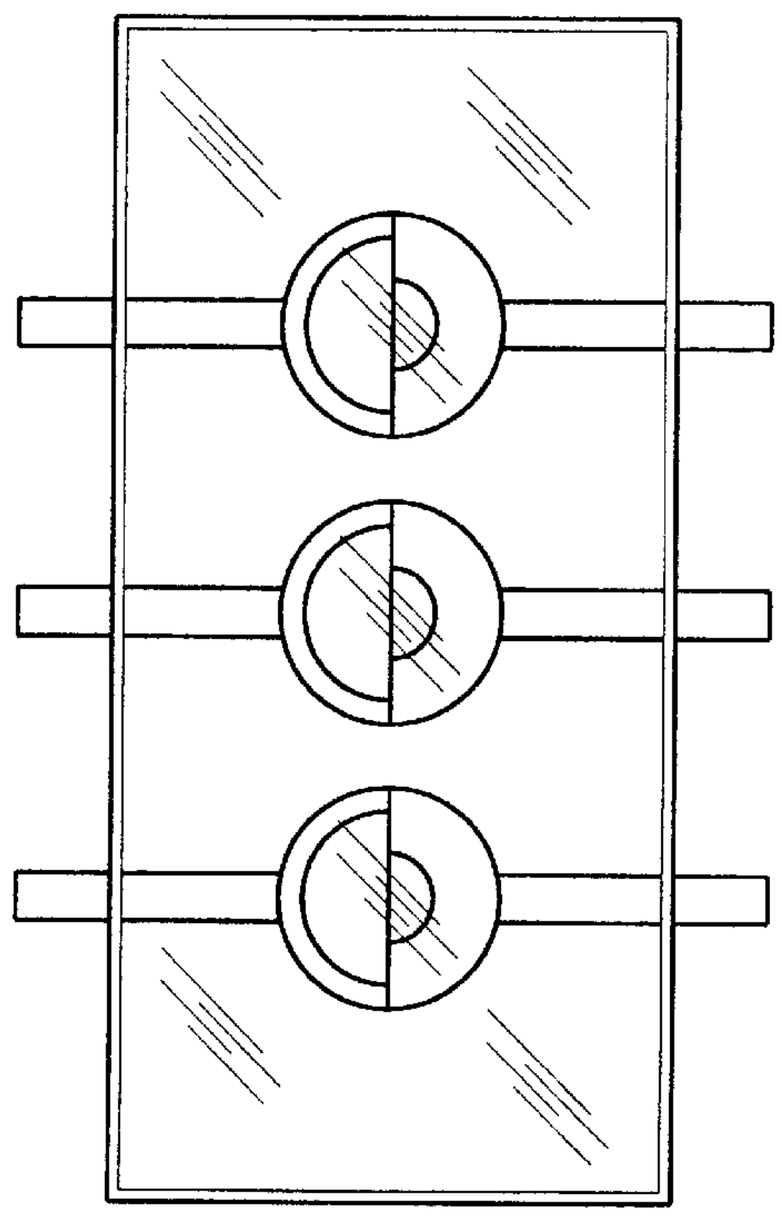


FIG. 5



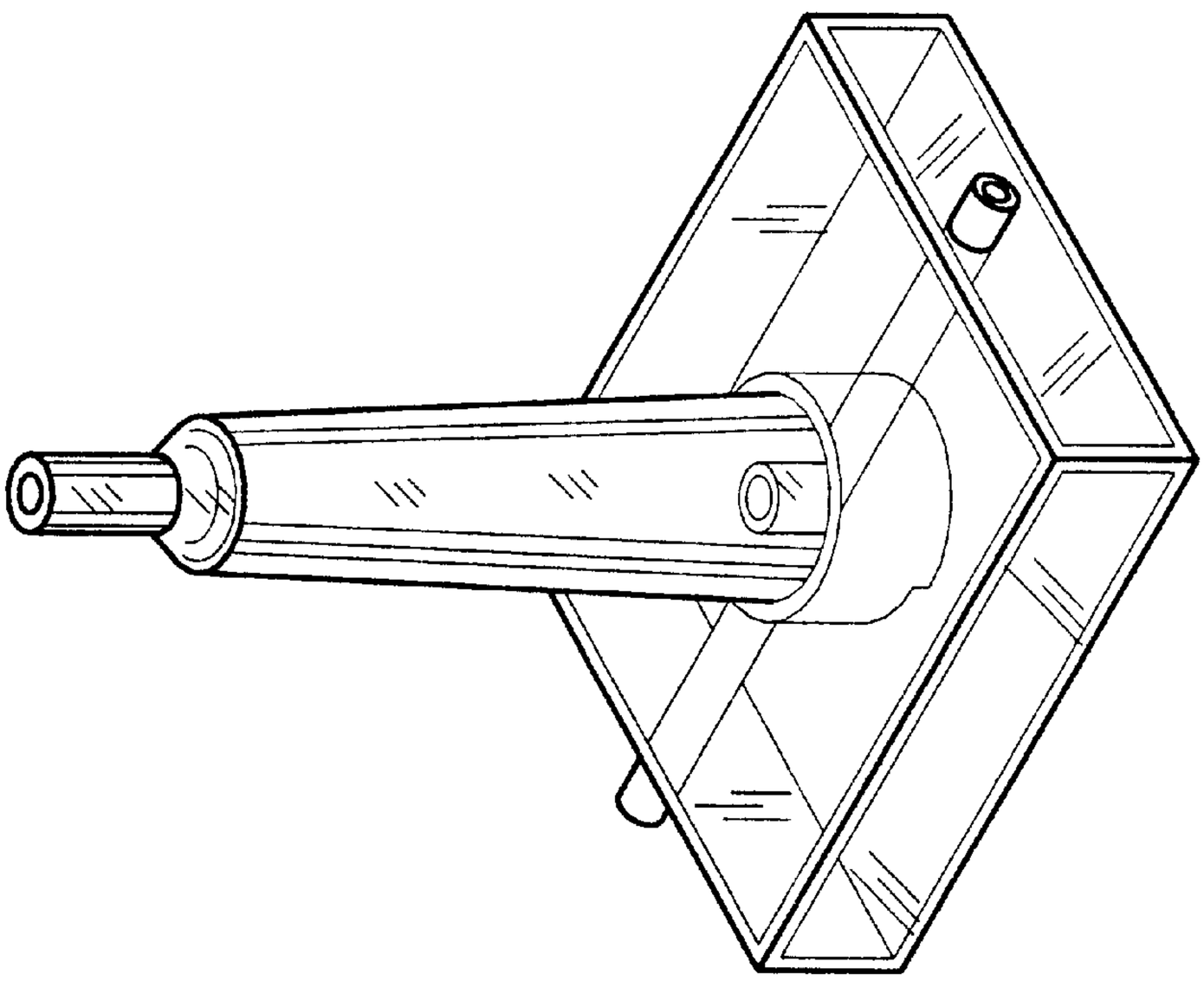


FIG. 6

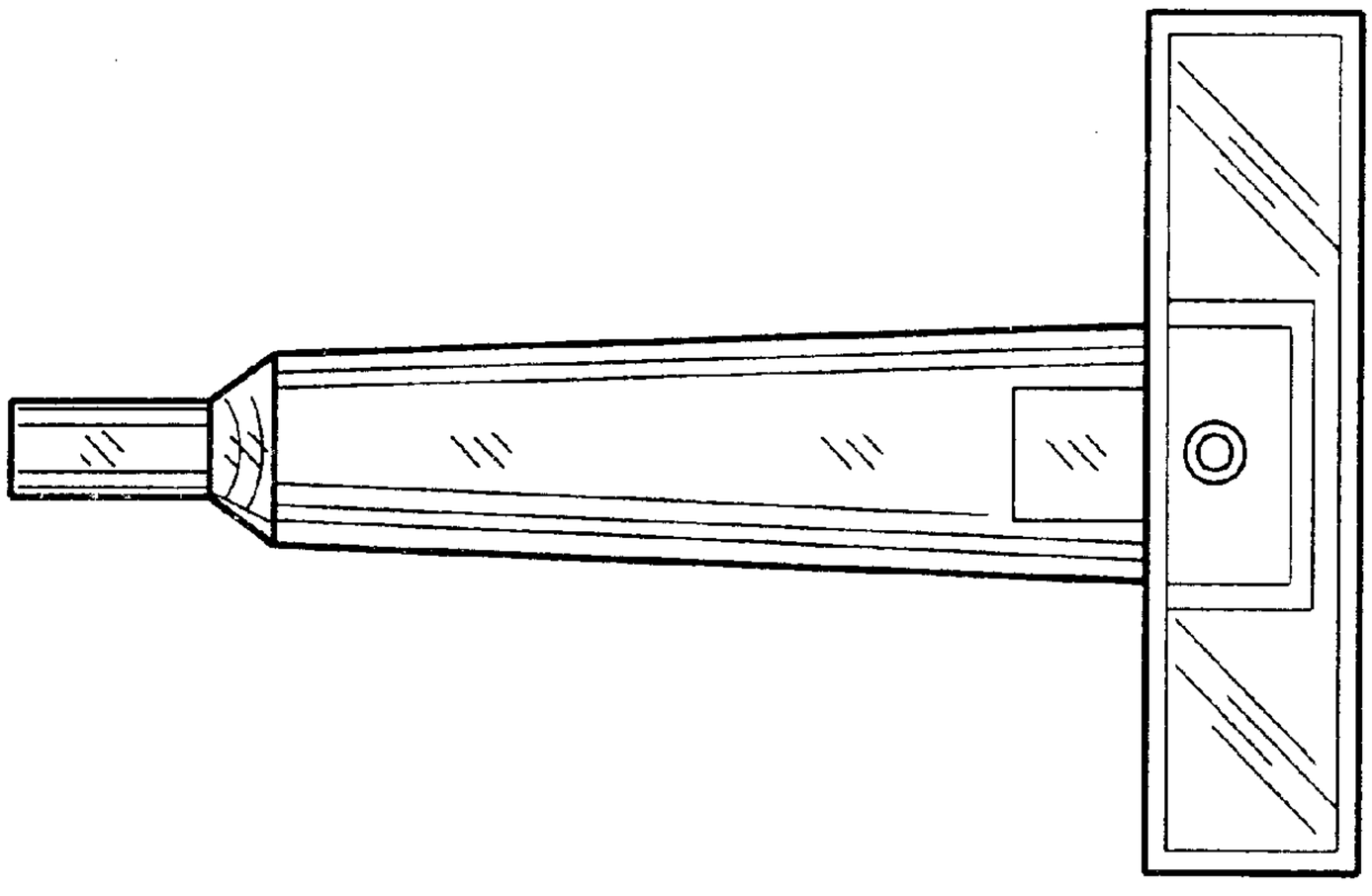


FIG. 8

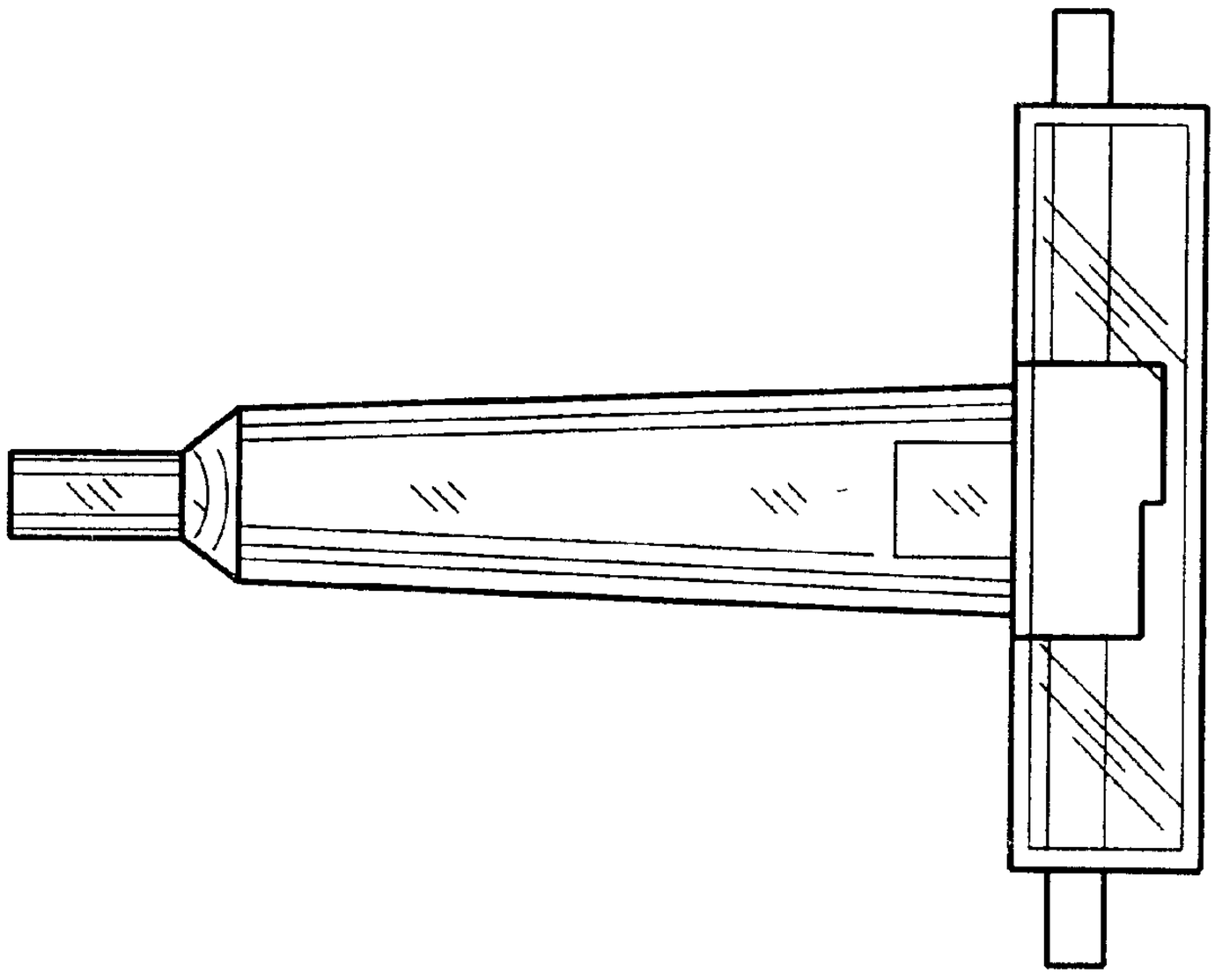


FIG. 9

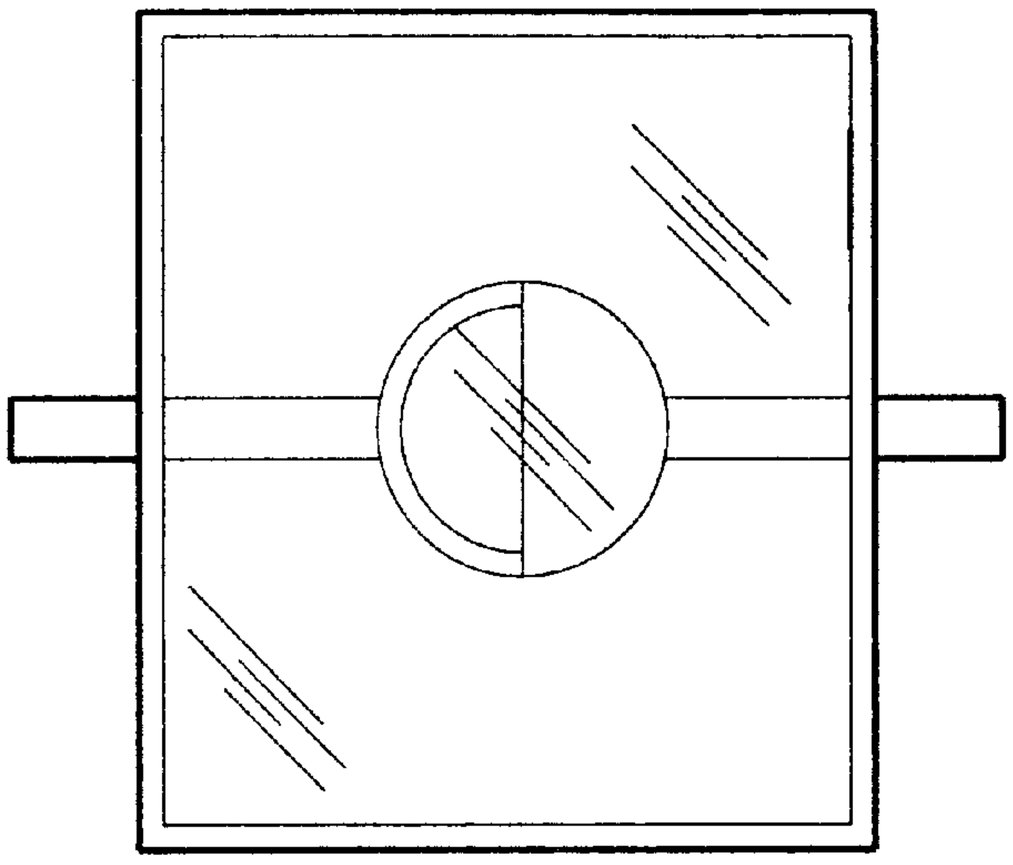


FIG. 10

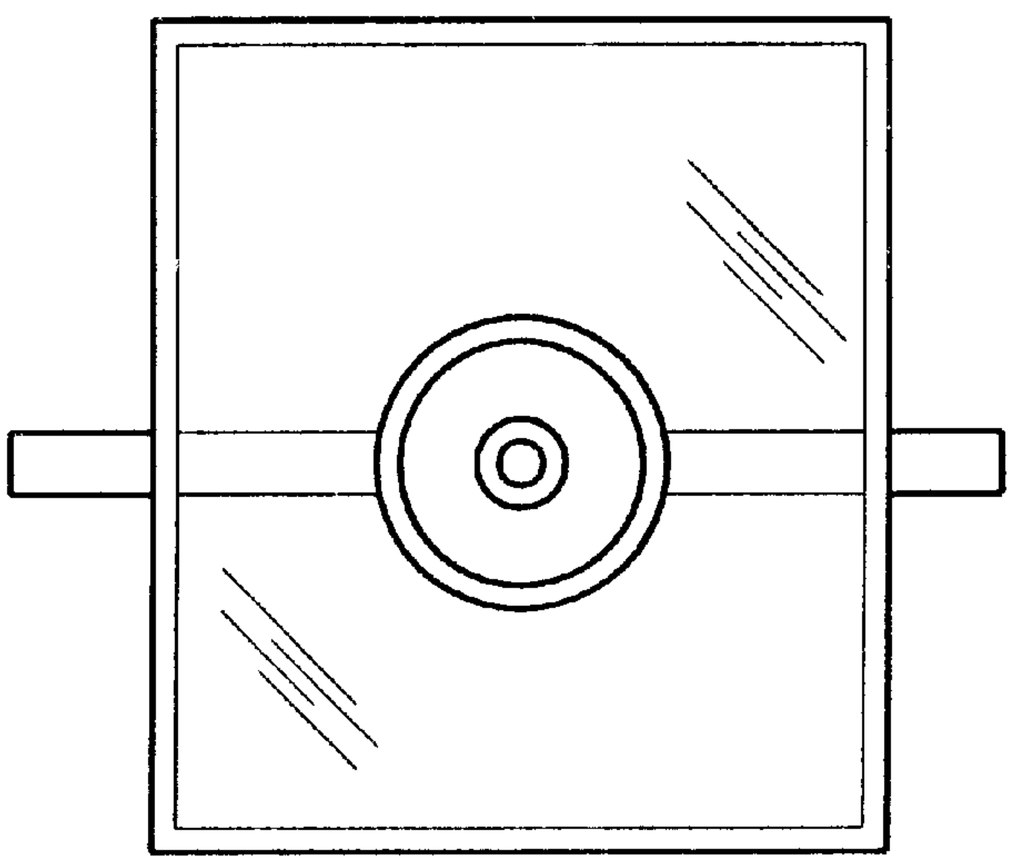


FIG. 9