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Hansen et al.

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(54) **HUMAN RESPIRATORY BLADDER**

4,621,621 A 11/1986 Marsalis

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(List continued on next page.)

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OTHER PUBLICATIONS

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

“Chronic bronchial asthma and emphysema,” *Geriatrics*, Jun. 1966.

(21) Appl. No.: **29/144,474**

Enhanced Tracheal Mucus Clearance with High Frequency Chest Wall Compression, *American Review of Respiratory Disease*, Sep. 1983.

(22) Filed: **Jul. 3, 2001**

“Peripheral mucociliary clearance with high-frequency chest wall compression,” *Journal of Applied Physiology*, Apr. 1985.

(51) **LOC (7) Cl. 24-01**

“Artificial Ventilation,” 1986.

(52) **U.S. Cl. D24/164**

“Tracheal mucus clearance in high-frequency oscillation: effect of peak flow rate bias,” *The European Respiratory Journal*, Jan. 1990.

(58) **Field of Search D24/164; 601/41, 601/44, 43, 149, 148, 150-153**

“High-frequency Chest Compression System to Aid in Clearance of Mucus from the Lung,” *Biomedical Instrumentation & Technology*, Jul. 1990.

(56) **References Cited**

“Preliminary Evaluation of High-Frequency Chest Compression for Secretion Clearance in Mechanically Ventilated Patients,” *Respiratory Care*, Oct. 1993.

U.S. PATENT DOCUMENTS

Primary Examiner—Stella Reid

2,223,570 A	12/1940	McMillin	
2,354,397 A	7/1944	Miller	
2,588,192 A	3/1952	Akerman et al.	
2,762,366 A	9/1956	Huxley, III et al.	
2,780,222 A	2/1957	Polzin et al.	
2,869,537 A	1/1959	Chu	
2,899,955 A	8/1959	Huxley, III et al.	
3,043,292 A	7/1962	Mendelson	
3,063,444 A	11/1962	Jobst	
3,078,842 A	2/1963	Gray	
3,179,106 A	4/1965	Meredith	
3,310,050 A	3/1967	Goldfarb	
3,545,017 A	12/1970	Cohn	
3,566,862 A *	3/1971	Schuh et al.	601/44
3,577,977 A	5/1971	Ritzinger, Jr. et al.	
4,004,579 A *	1/1977	Dedo	601/41
4,120,297 A	10/1978	Rabischong et al.	
4,135,503 A	1/1979	Romano	
4,178,922 A	12/1979	Curlee	
4,186,732 A	2/1980	Christoffel	
4,590,925 A	5/1986	Dillon	

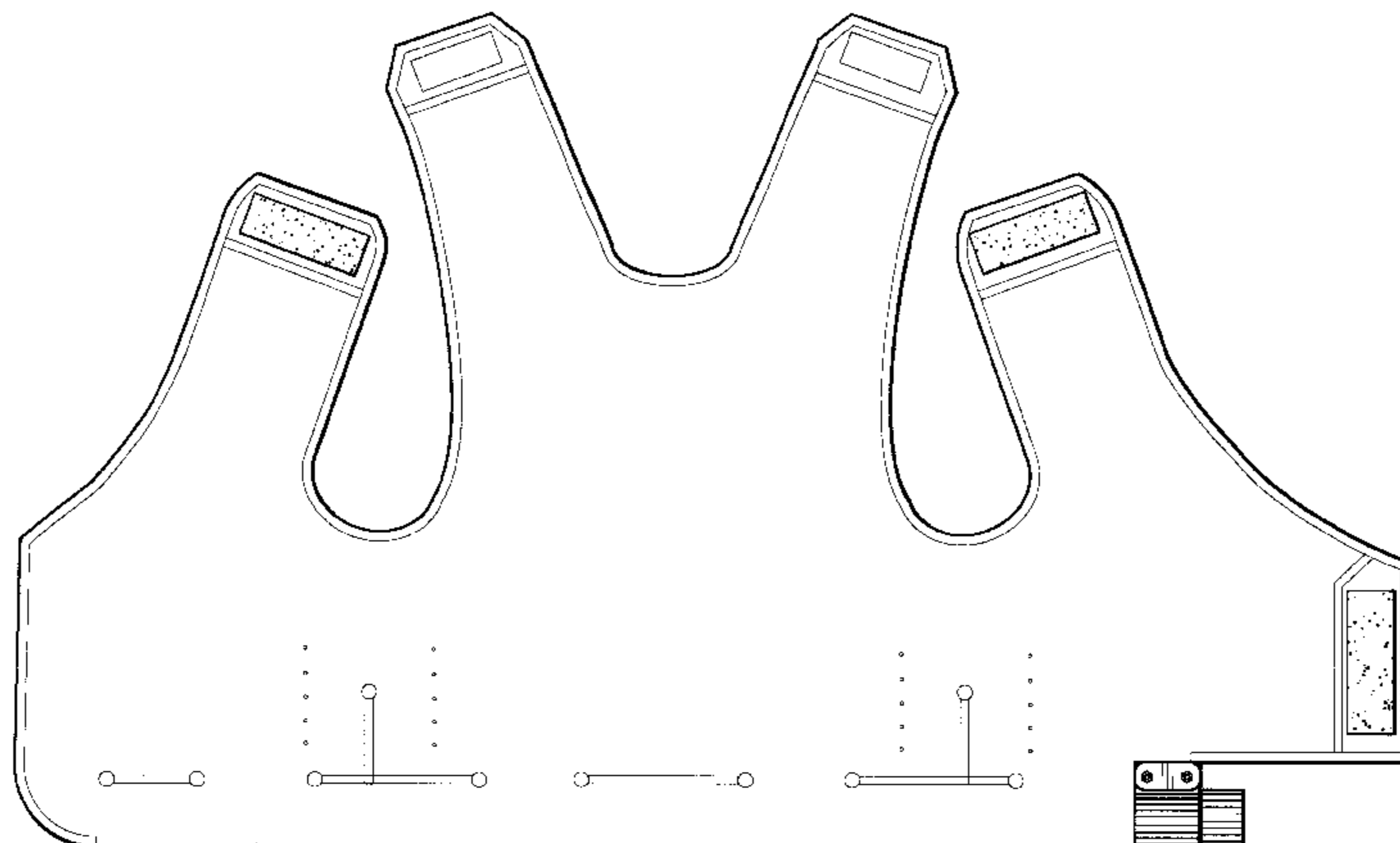
(57) **CLAIM**

The ornamental design for a human respiratory bladder, as shown and described.

DESCRIPTION

FIG. 1 is a front elevational view of a human body respiratory bladder, showing our new design;
FIG. 2 is a rear elevational view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is an end elevational view of the right end thereof; and,
FIG. 6 is an end elevational view of the left end thereof.

1 Claim, 4 Drawing Sheets



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U.S. PATENT DOCUMENTS

4,676,232 A	6/1987	Olsson et al.	5,222,478 A	6/1993	Scarberry et al.
4,682,588 A	7/1987	Curlee	5,235,967 A	8/1993	Arbisi et al.
4,838,263 A	6/1989	Warwick et al.	5,370,603 A	12/1994	Newman
4,840,167 A	6/1989	Olsson et al.	5,453,081 A	9/1995	Hansen
4,928,674 A *	5/1990	Halperin et al. 601/44	5,569,170 A	10/1996	Hansen
4,952,095 A	8/1990	Walters	D379,396 S	5/1997	Rongo et al.
4,977,889 A	12/1990	Budd	5,769,800 A	6/1998	Gelfand et al.
5,007,412 A	4/1991	DeWall	6,036,662 A	3/2000	Van Brunt et al.
5,055,052 A *	10/1991	Johnsen 601/41 X	6,155,996 A	12/2000	Van Brunt et al.
5,056,505 A	10/1991	Warwick et al.			

* cited by examiner

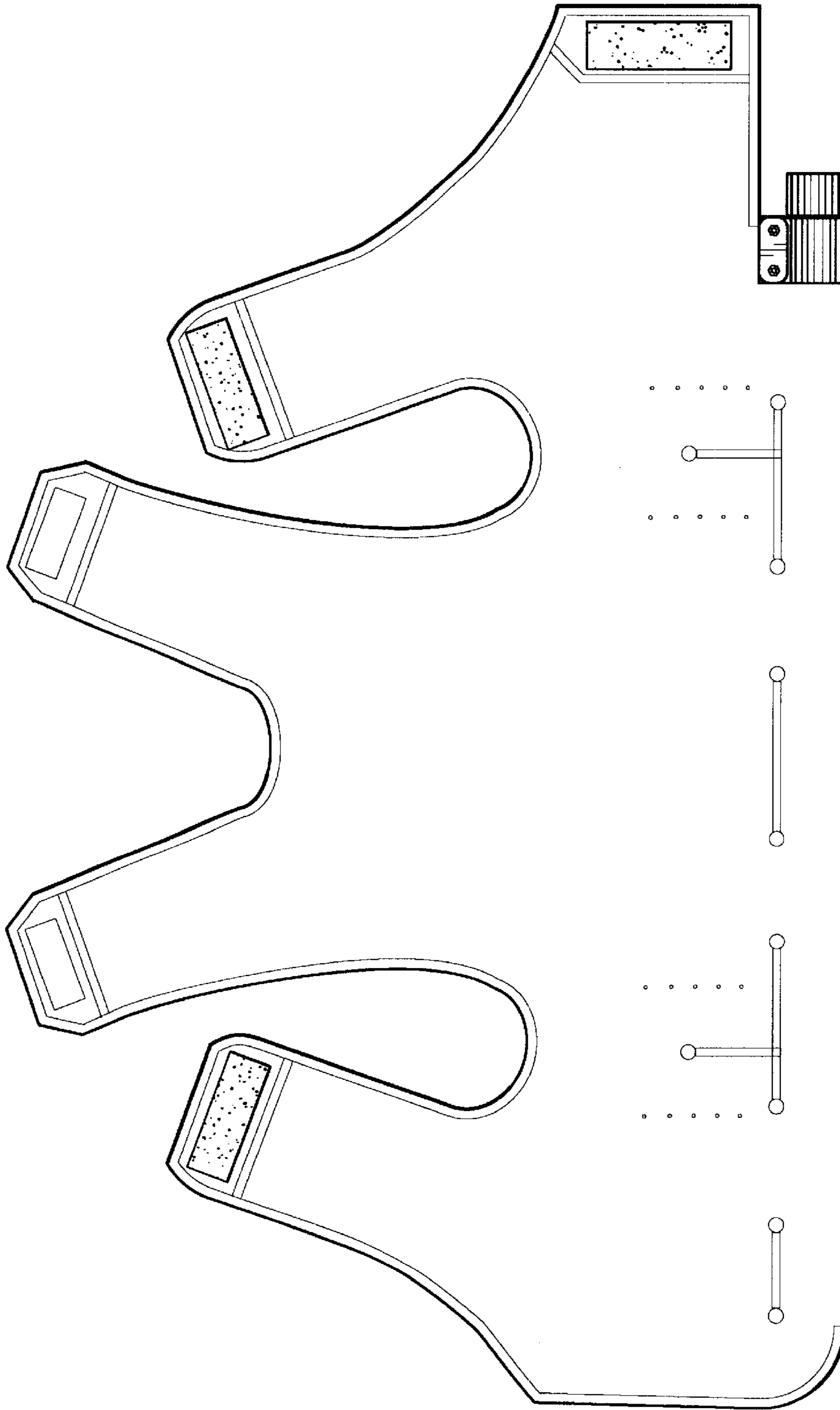


FIG. 1

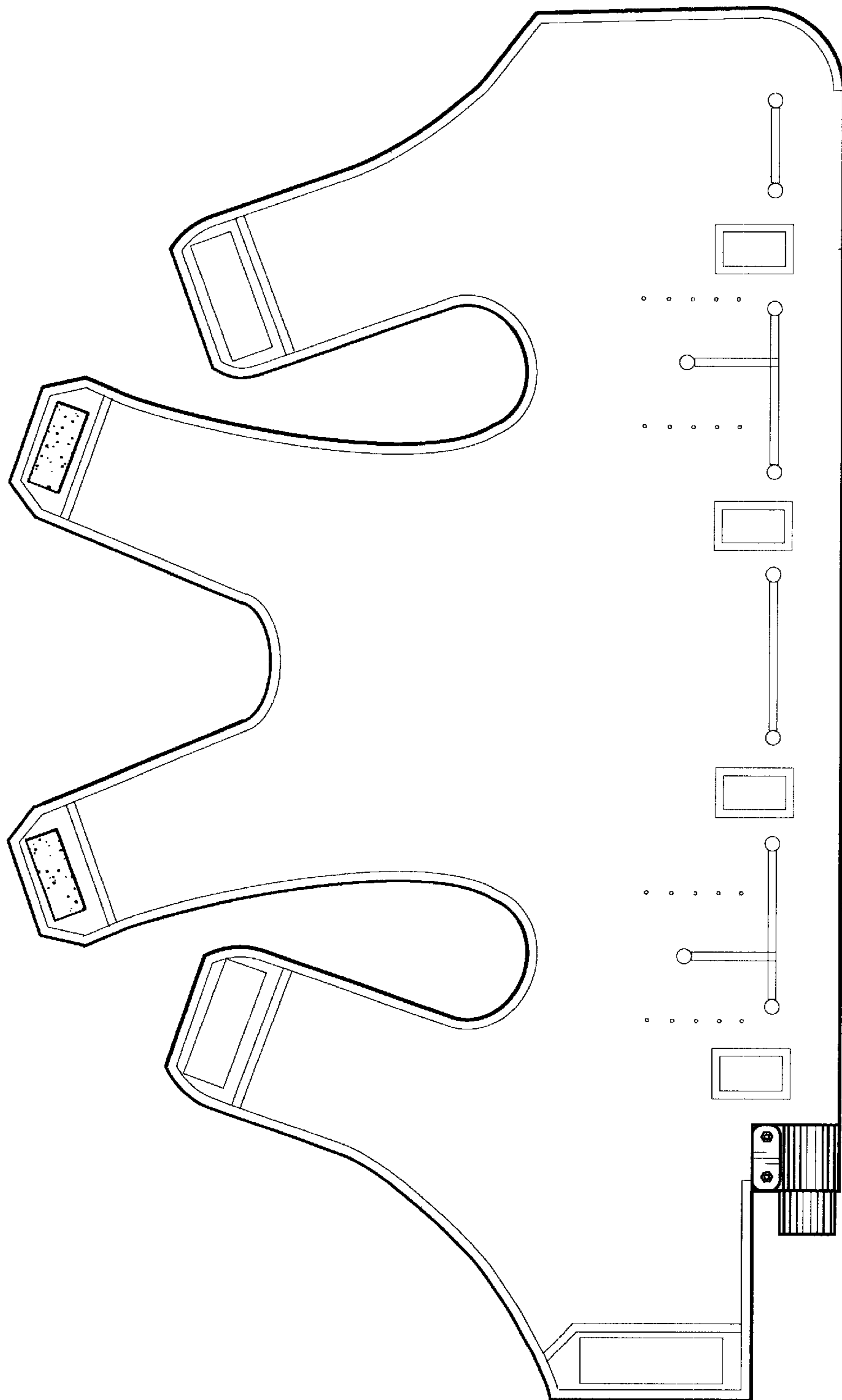


FIG. 2

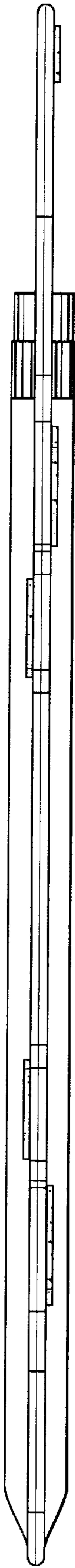


FIG. 3

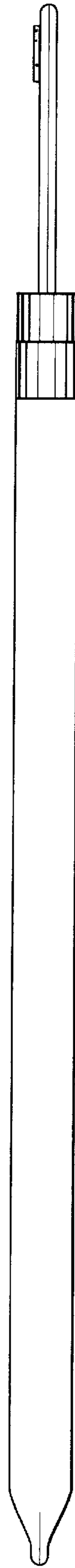


FIG. 4



FIG. 6

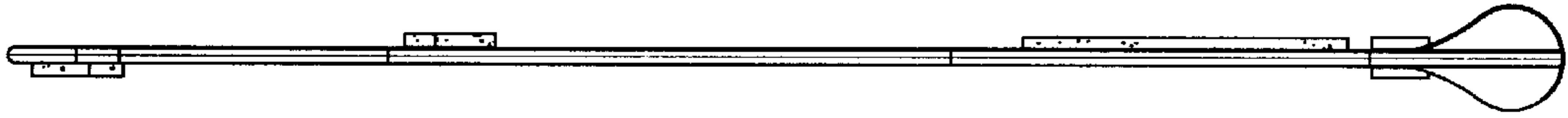


FIG. 5