



US00D449416B1

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

(10) **Patent No.:** **US D449,416 S**

(45) **Date of Patent:** **** Oct. 16, 2001**

(54) **SILENT CHAIN**

(75) Inventors: **Hiroshi Horie; Takayuki Funamoto;**
Yoshinori Iwasaki, all of Osaka (JP)

(73) Assignee: **Tsubakimoto Chain Co., Osaka (JP)**

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

(21) Appl. No.: **29/120,483**

(22) Filed: **Mar. 20, 2000**

(30) **Foreign Application Priority Data**

Nov. 11, 1999 (JP) 11-30962

(51) **LOC (7) Cl.** **12-05**

(52) **U.S. Cl.** **D34/35; D8/499**

(58) **Field of Search** **D34/29, 35; D8/499;**
198/850, 852, 853, 848, 849; 474/286,
209, 202, 213, 218, 220, 212, 217

(56) **References Cited**

U.S. PATENT DOCUMENTS

Re. 34,688	*	8/1994	Lapeyre	.....	198/853
D. 169,878	*	6/1953	Washington	.....	D34/29
D. 227,746	*	7/1973	Vitas	.....	D34/35
D. 373,950	*	9/1996	Otani et al.	.....	D34/35
653,462	*	7/1900	West	.....	198/853
741,453	*	10/1903	Butler et al.	.....	198/853
769,971	*	9/1904	Whitney	.....	198/853
799,072	*	9/1905	Morse	.....	198/850
1,634,642	*	7/1927	Bens	.....	474/286
1,780,040	*	10/1930	Pierce	.....	474/286
1,860,514	*	5/1932	Stiansen	.....	198/850
1,865,844	*	7/1932	Dull et al.	.....	198/850
1,919,768	*	7/1933	Brandt	.....	198/850
2,669,879	*	2/1954	Pierce	.....	198/852
3,804,232	*	4/1974	Freiwald	.....	198/195
4,034,556	*	7/1977	Riber	.....	198/850
4,993,543	*	2/1991	Lapeyre	.....	198/834
5,236,400	*	8/1993	Tsuyama	.....	474/217
5,372,554		12/1994	Okuda	.....	474/206
5,393,272	*	2/1995	Okuwaki et al.	.....	474/313
5,435,789	*	7/1995	Avramidis	.....	474/206
5,445,570	*	8/1995	White	.....	474/213

5,453,058	*	9/1995	Reese et al.	.....	474/206
5,803,854	*	9/1998	Tada et al.	.....	474/213
5,902,203	*	5/1999	Kanehira et al.	.....	474/213
5,921,881	*	7/1999	Nakamura	.....	474/217
5,941,059		8/1999	Kanehira et al.	.....	59/5
6,077,181	*	6/2000	Kanehira et al.	.....	474/212

* cited by examiner

Primary Examiner—Cynthia E. Ramirez

(74) *Attorney, Agent, or Firm*—Howson & Howson

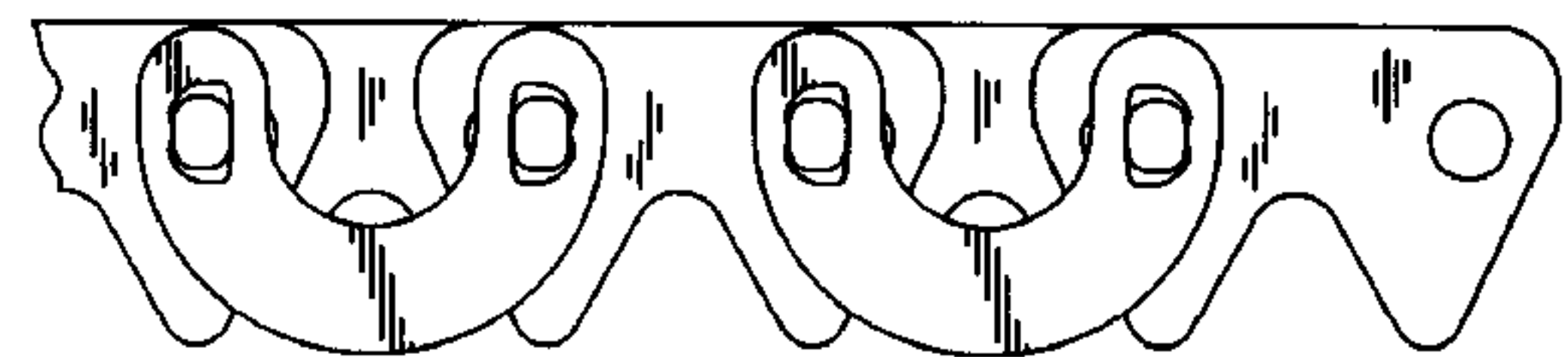
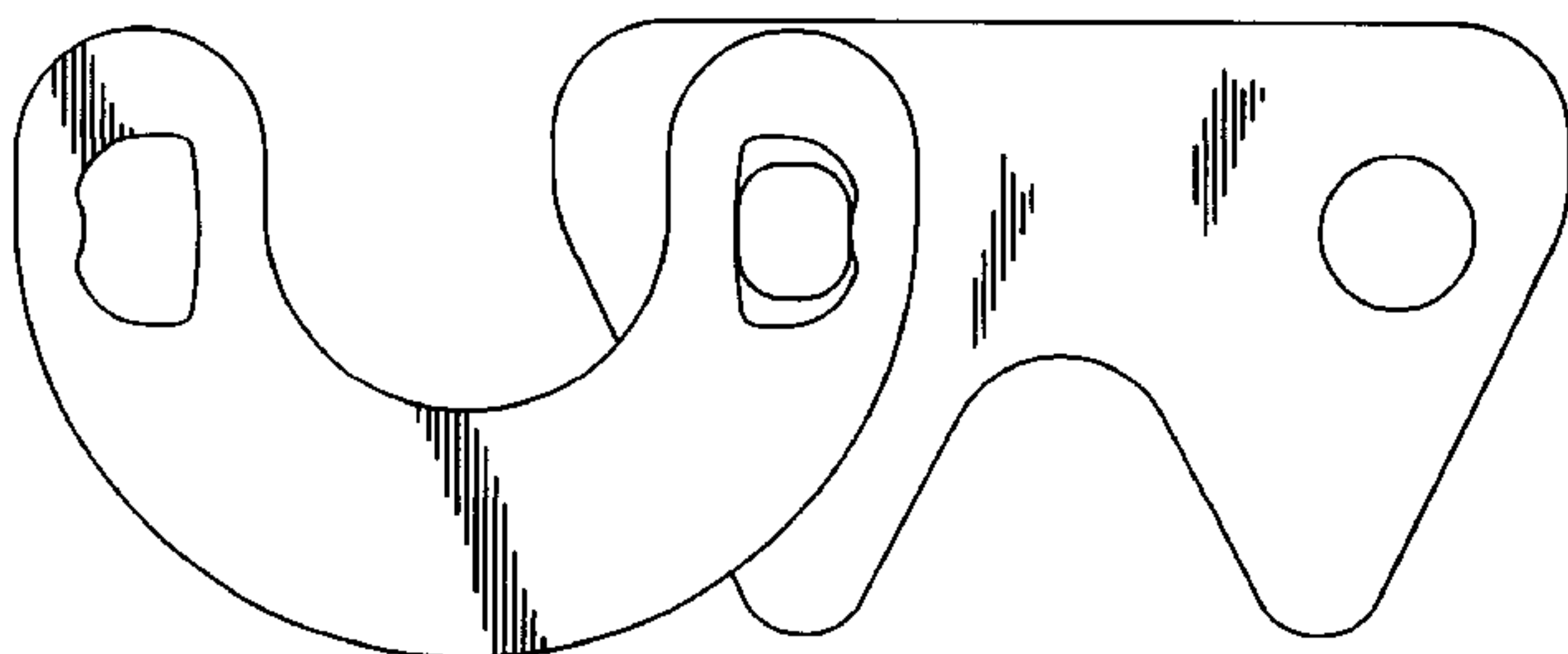
(57) **CLAIM**

The ornamental design for a silent chain, as shown and described.

DESCRIPTION

FIG. 1 is a fragmentary front elevational view of a portion of a silent chain, showing our new design;
 FIG. 2 is a top plan view thereof;
 FIG. 3 is right side elevational view thereof;
 FIG. 4 is a bottom plan view thereof;
 FIG. 5 is a fragmentary front elevational view showing a portion of a silent chain, consisting of plural, repeated links, in accordance with our new design;
 FIG. 6 is a right-side elevational view of the chain portion shown in FIG. 5;
 FIG. 7 is a fragmentary elevational view showing a sprocket having thereon a portion of a silent chain in accordance with our new design, the sprocket being illustrated by broken lines as environmental structure; and,
 FIG. 8 is a sectional view of the chain, guide plates and sprocket, taken on plane 8—8 in FIG. 7.
 The left side elevational view of the guide plate is a mirror image of the right side elevational view, and the rear elevational view of the guide plate is a mirror image of the front elevational view. The broken line showing of the sprocket is for illustrative purpose only and forms no part of the claimed design. The broken line in FIG. 5 and the corresponding broken lines in FIG. 7 indicate that the chain, which consists of repeated identical units, can be of any desired length.

1 Claim, 2 Drawing Sheets



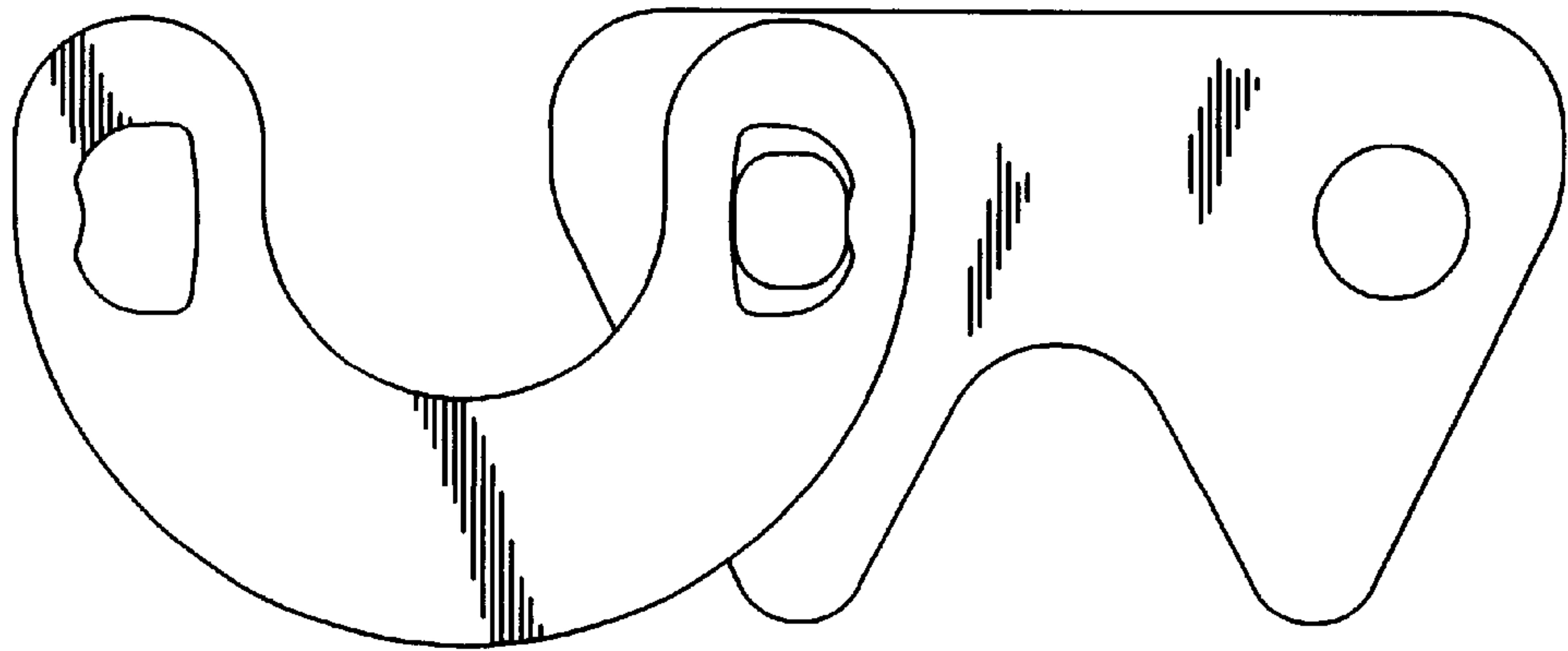


Fig. 1

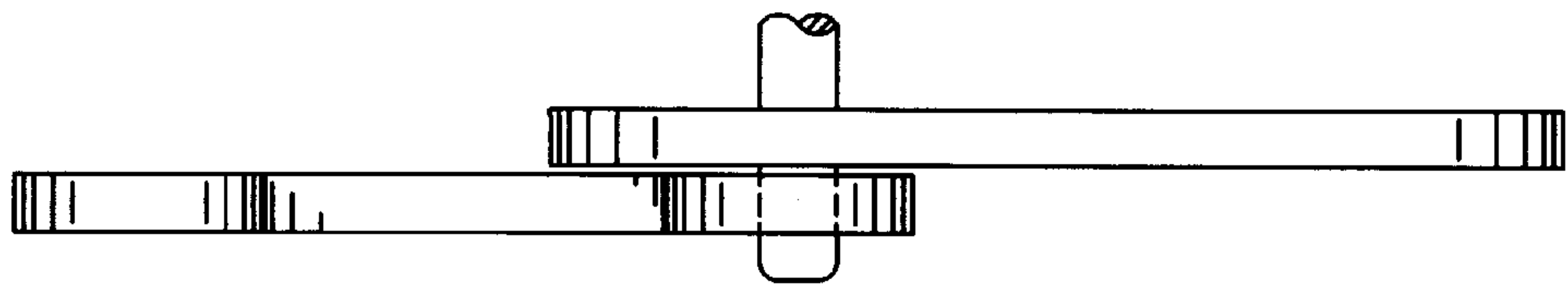


Fig. 2

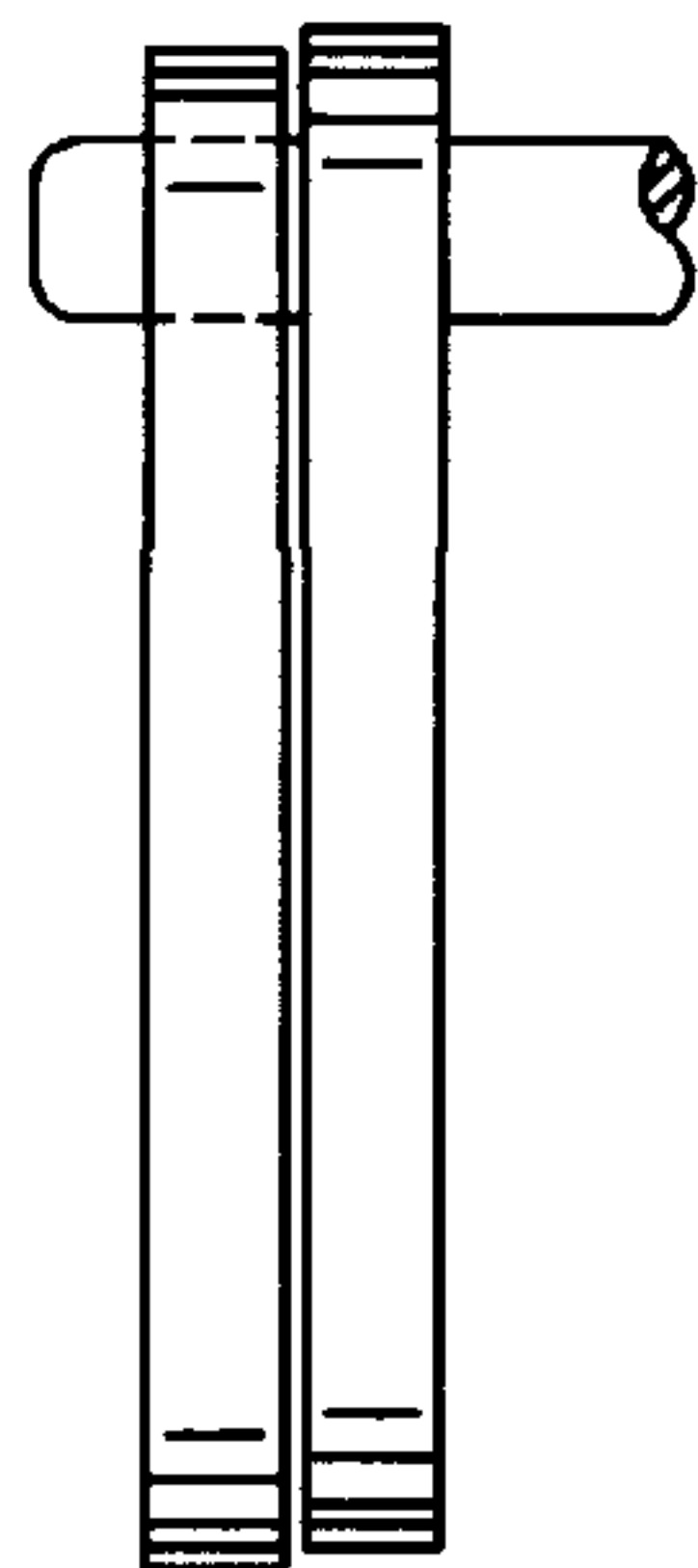
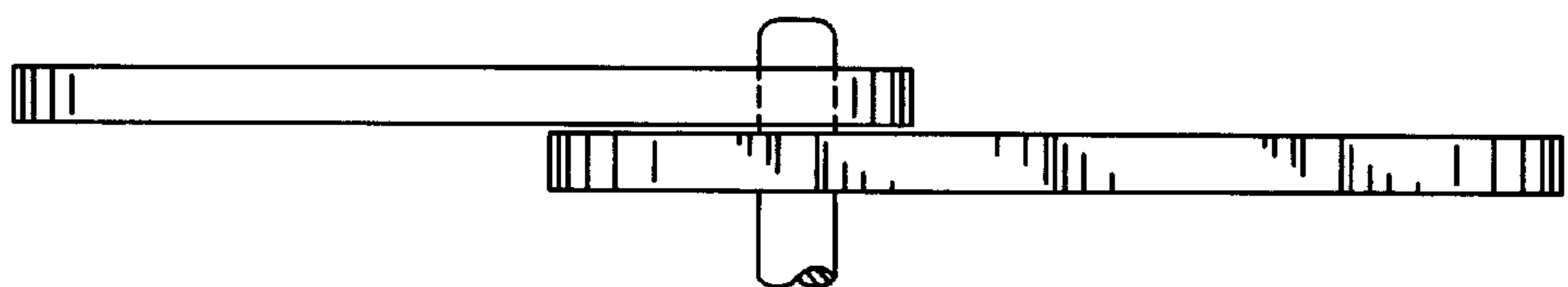


Fig. 3

Fig. 4



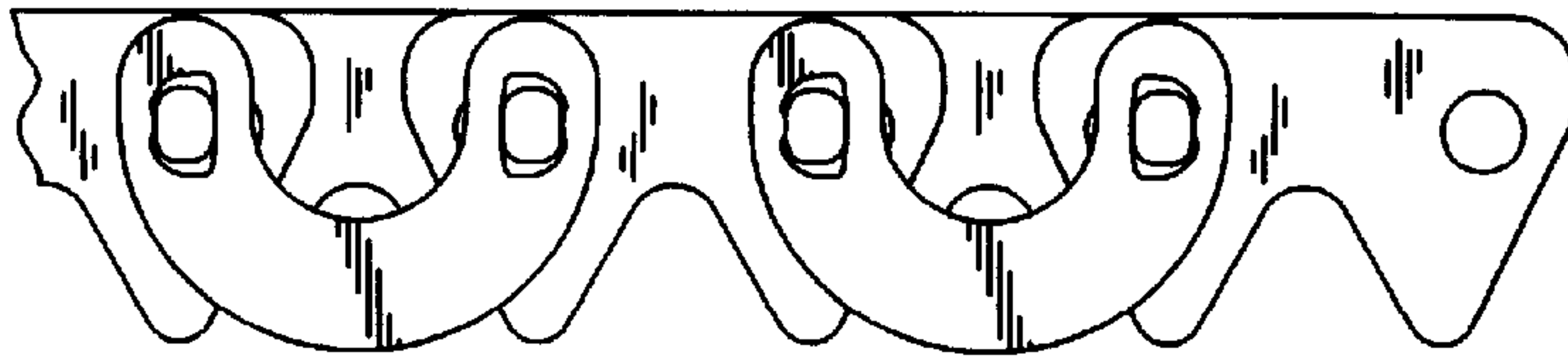


Fig. 5

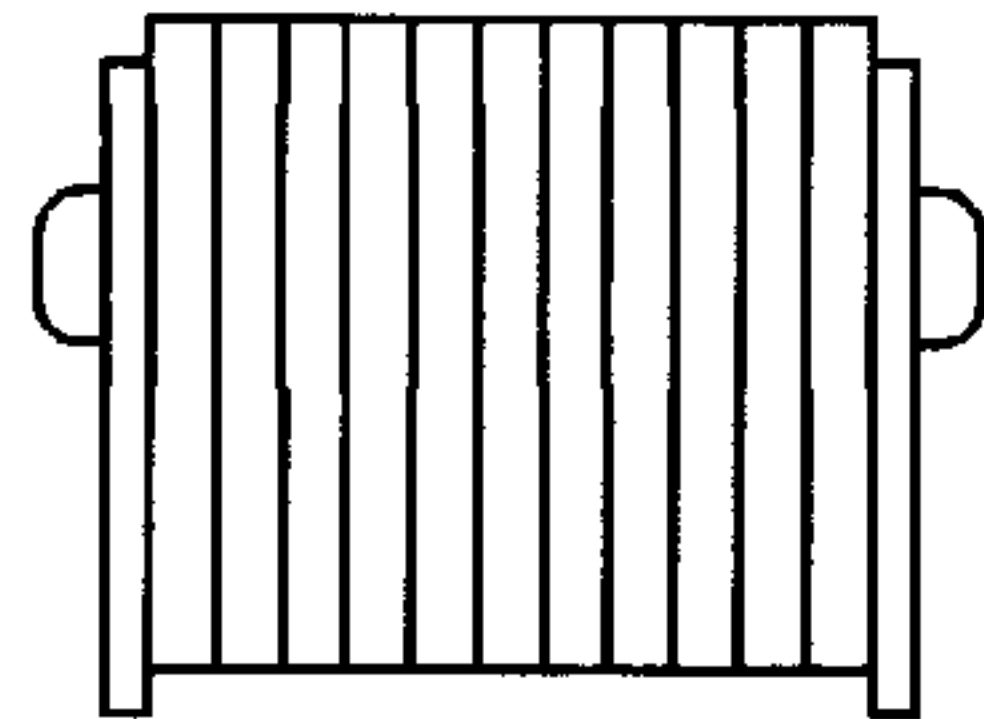


Fig. 6

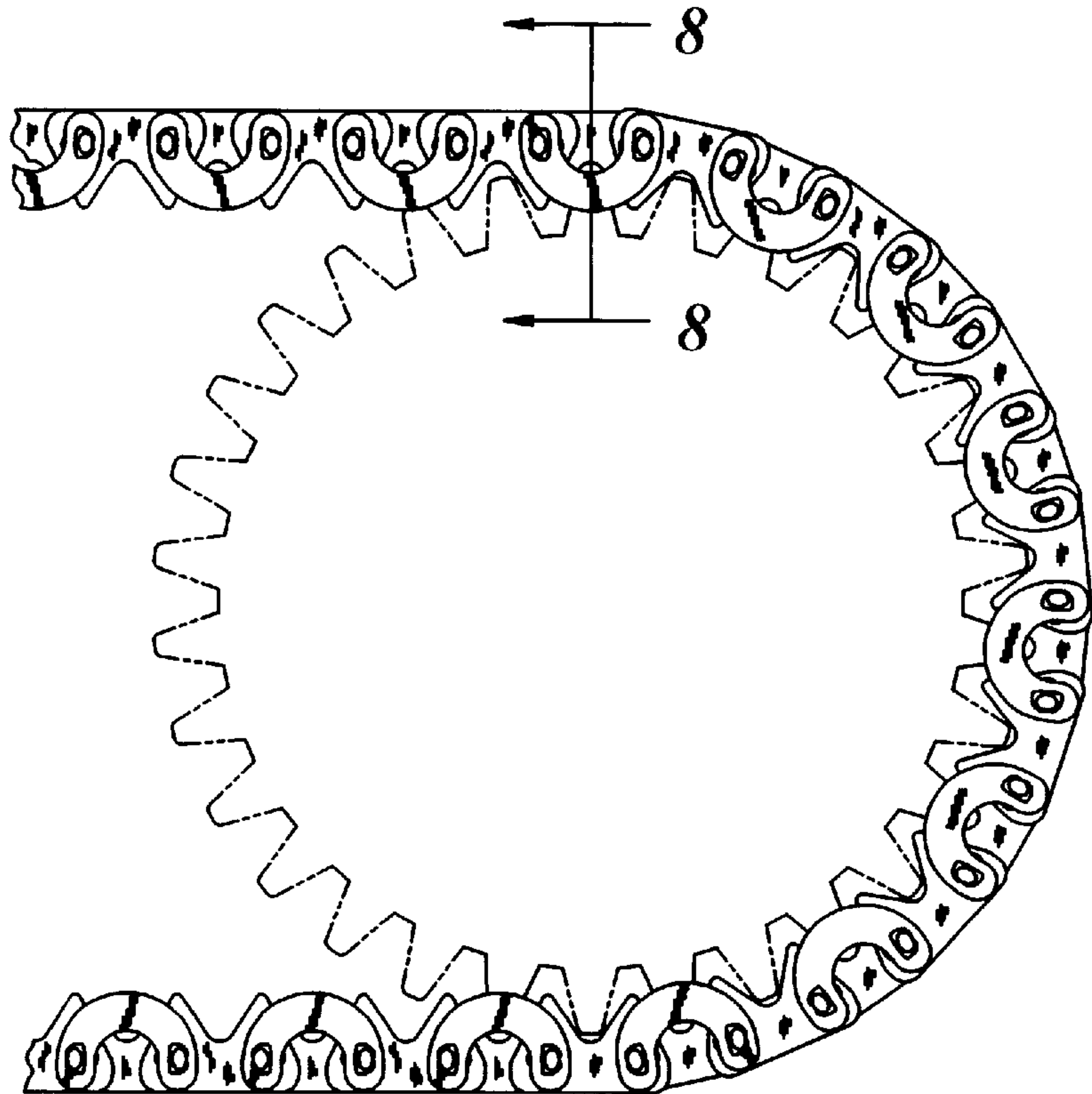


Fig. 7

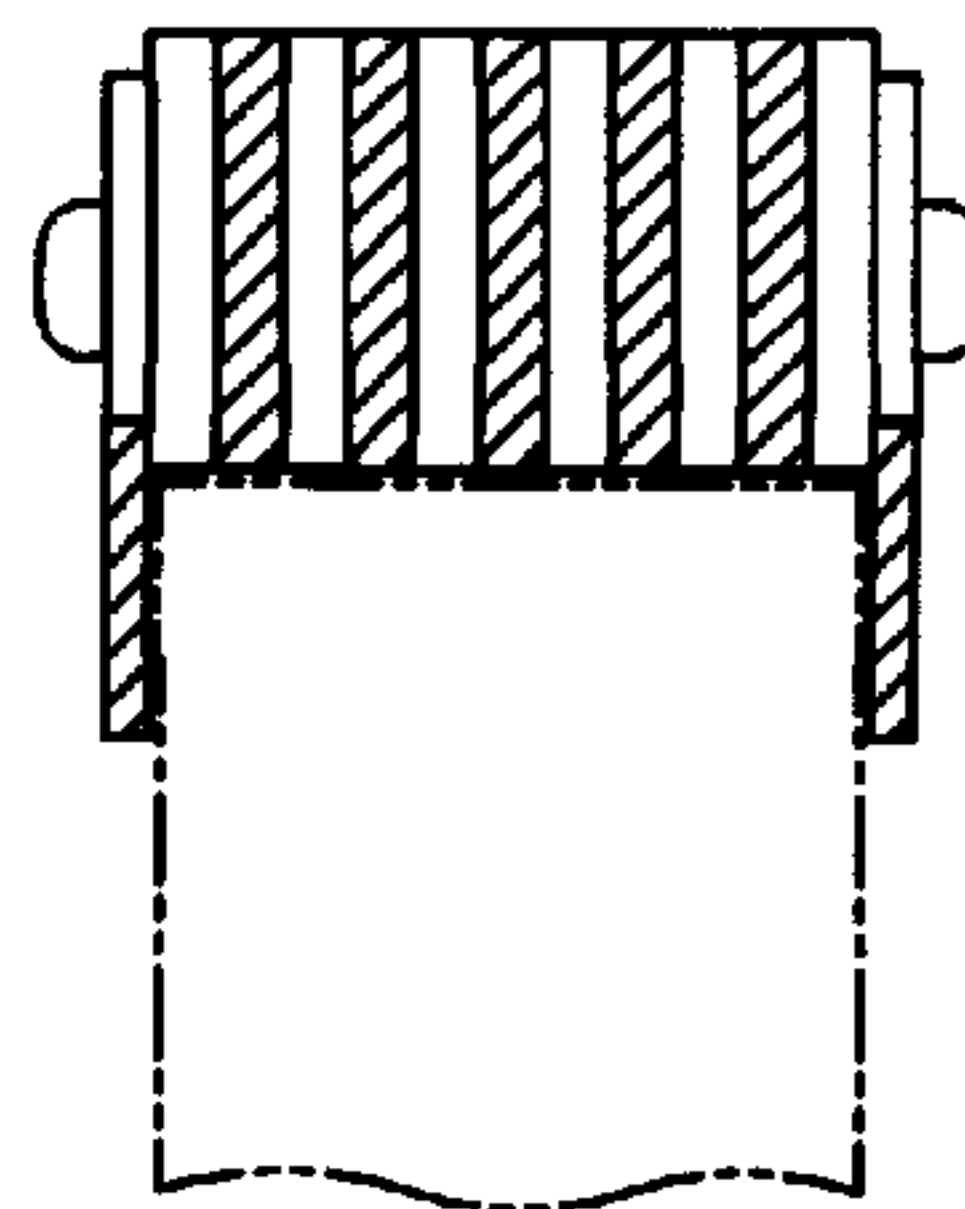


Fig. 8