



US00D814279S

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

(10) **Patent No.:** **US D814,279 S**  
(45) **Date of Patent:** **\*\* Apr. 3, 2018**

(54) **TOOL FOR FIXING A TENSION MEMBER OF COMPOSITE STRAND FOR PRESTRESSED CONCRETE REINFORCEMENT AND POST TENSIONING CONCRETE STRUCTURE**

(71) Applicant: **TOKYO ROPE MFG. CO., LTD.**,  
Chuo-ku, Tokyo (JP)

(72) Inventors: **Daisuke Manabe**, Kasumigaura Ibaraki (JP); **Shunji Hachisuka**, Kasumigaura Ibaraki (JP); **Hiroshi Kimura**, Noba Chiba (JP); **Fumihiko Matsuda**, Kasumigaura Ibaraki (JP); **Kohsuke Ashiduka**, Chikushino Fukuoka (JP)

(73) Assignee: **TOKYO ROPE MFG. CO., LTD.**,  
Tokyo (JP)

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

(21) Appl. No.: **29/564,846**

(22) Filed: **May 16, 2016**

(30) **Foreign Application Priority Data**

Dec. 21, 2015 (JP) ..... 2015-028358  
Dec. 21, 2015 (JP) ..... 2015-028359

(Continued)

(51) **LOC (11) Cl.** ..... **08-08**

(52) **U.S. Cl.**  
USPC ..... **D8/383; D8/382**

(58) **Field of Classification Search**  
USPC ..... D8/383, 382, 385, 393, 394, 396, 499,  
D8/354, 355, 14, 44, 47, 71, 72

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,408,144 A \* 2/1922 Snow ..... F16G 11/048  
403/275  
1,600,521 A \* 9/1926 Smith ..... F16G 11/048  
403/211

(Continued)

*Primary Examiner* — Sandra S Snapp

*Assistant Examiner* — Ieisha N Price

(74) *Attorney, Agent, or Firm* — Holtz, Holtz & Volek PC

(57) **CLAIM**

The ornamental design for a tool for fixing a tension member of composite strand for prestressed concrete reinforcement and post tensioning concrete structure, as shown and described.

**DESCRIPTION**

FIG. 1 is a front, bottom and left side perspective view of a tool for fixing a tension member of composite strand for prestressed concrete reinforcement and post tensioning concrete structure, showing our new design;

FIG. 2 is a front view thereof;

FIG. 3 is a rear view thereof;

FIG. 4 is a top view thereof;

FIG. 5 is a bottom view thereof;

FIG. 6 is a left side view thereof;

FIG. 7 is a right side view thereof;

FIG. 8 is an enlarged cross sectional view thereof, taken along line 8-8 in FIG. 2;

FIG. 9 is an enlarged cross sectional view thereof, taken along line 9-9 in FIG. 2;

FIG. 10 is a perspective view showing the state of use thereof;

(Continued)

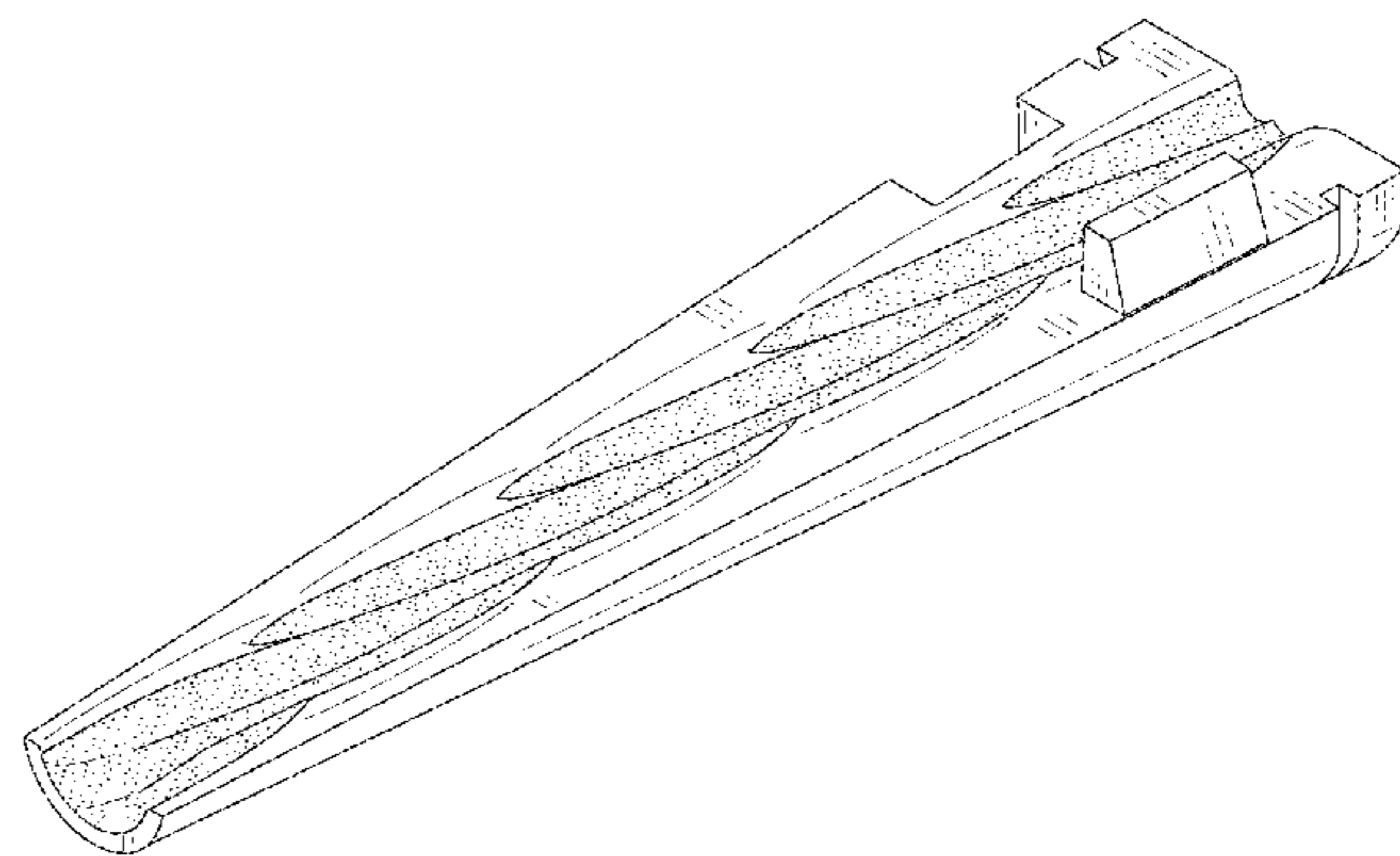
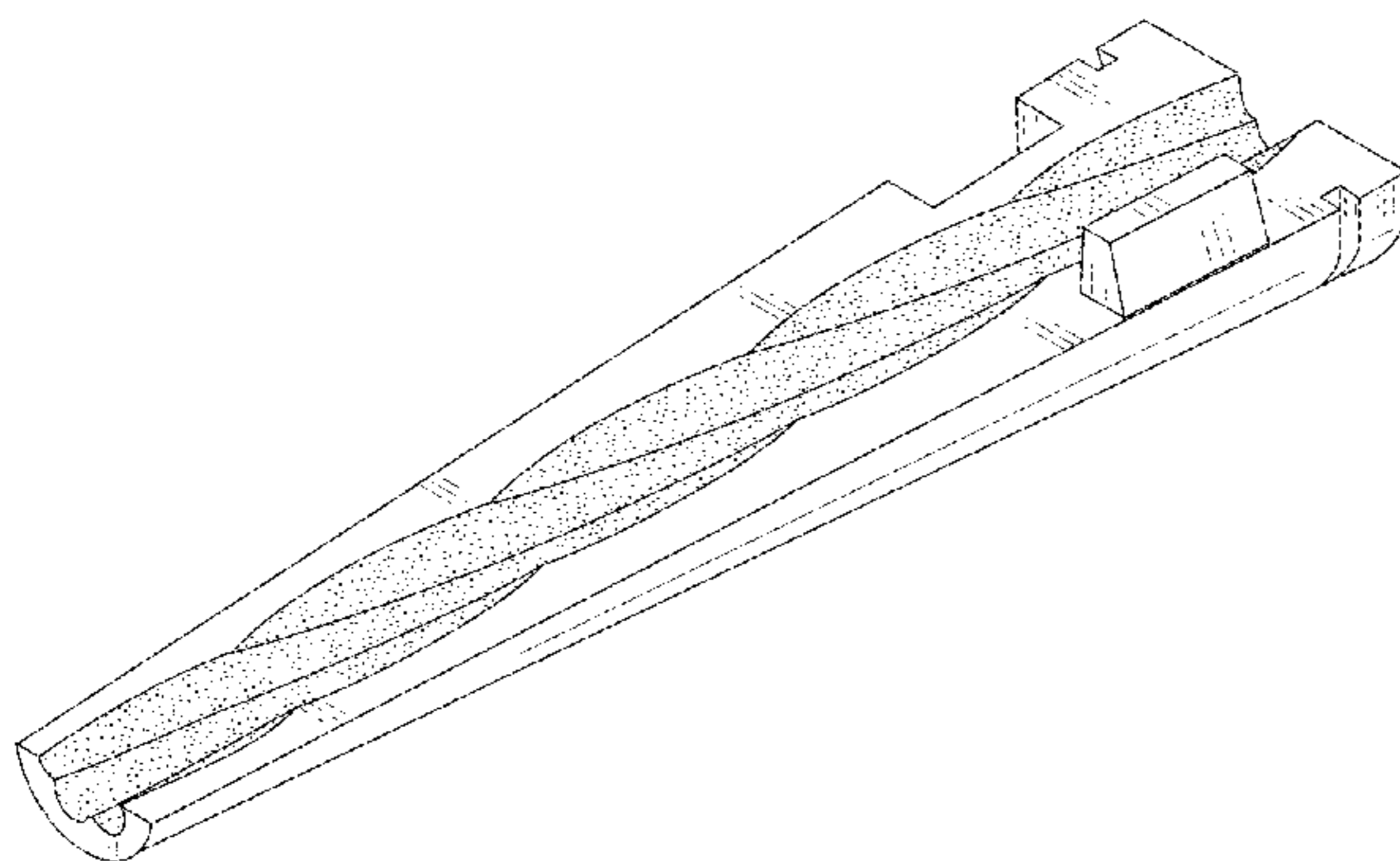


FIG. 11 is a front, bottom and left side perspective view of a second embodiment of a tool for fixing a tension member of composite strand for prestressed concrete reinforcement and post tensioning concrete structure, showing our new design;

FIG. 12 is a front view thereof;

FIG. 13 is a rear view thereof;

FIG. 14 is a top view thereof;

FIG. 15 is a bottom view thereof;

FIG. 16 is a left side view thereof;

FIG. 17 is a right side view thereof;

FIG. 18 is an enlarged cross sectional view thereof, taken along line 18-18 in FIG. 12;

FIG. 19 is an enlarged cross sectional view thereof, taken along line 19-19 in FIG. 12; and,

FIG. 20 is a perspective view showing the state of use thereof.

The broken lines shown in the sectional views of FIGS. 8, 9, 18 and 19 illustrate portions of the tool for fixing a tension member of composite strand for prestressed concrete reinforcement and post tensioning concrete structure and form no part of the claimed design. The broken lines shown in FIGS. 10 and 20 illustrates the environment of the claimed design and forms no part thereof.

**1 Claim, 12 Drawing Sheets**

(30) **Foreign Application Priority Data**

Dec. 21, 2015 (JP) ..... 2015-028360  
 Dec. 21, 2015 (JP) ..... 2015-028361

(58) **Field of Classification Search**

CPC . D07B 1/18; D07B 1/005; D07B 9/00; D07B 2201/20; D07B 2201/2083; D07B 2201/2084; D07B 2201/2085; D07B 2201/2089; F16G 11/00; F16G 11/03; F16G 11/04; F16G 11/048; F16G 11/08; F16G 11/10; F16G 11/105; F16G 11/108

See application file for complete search history.

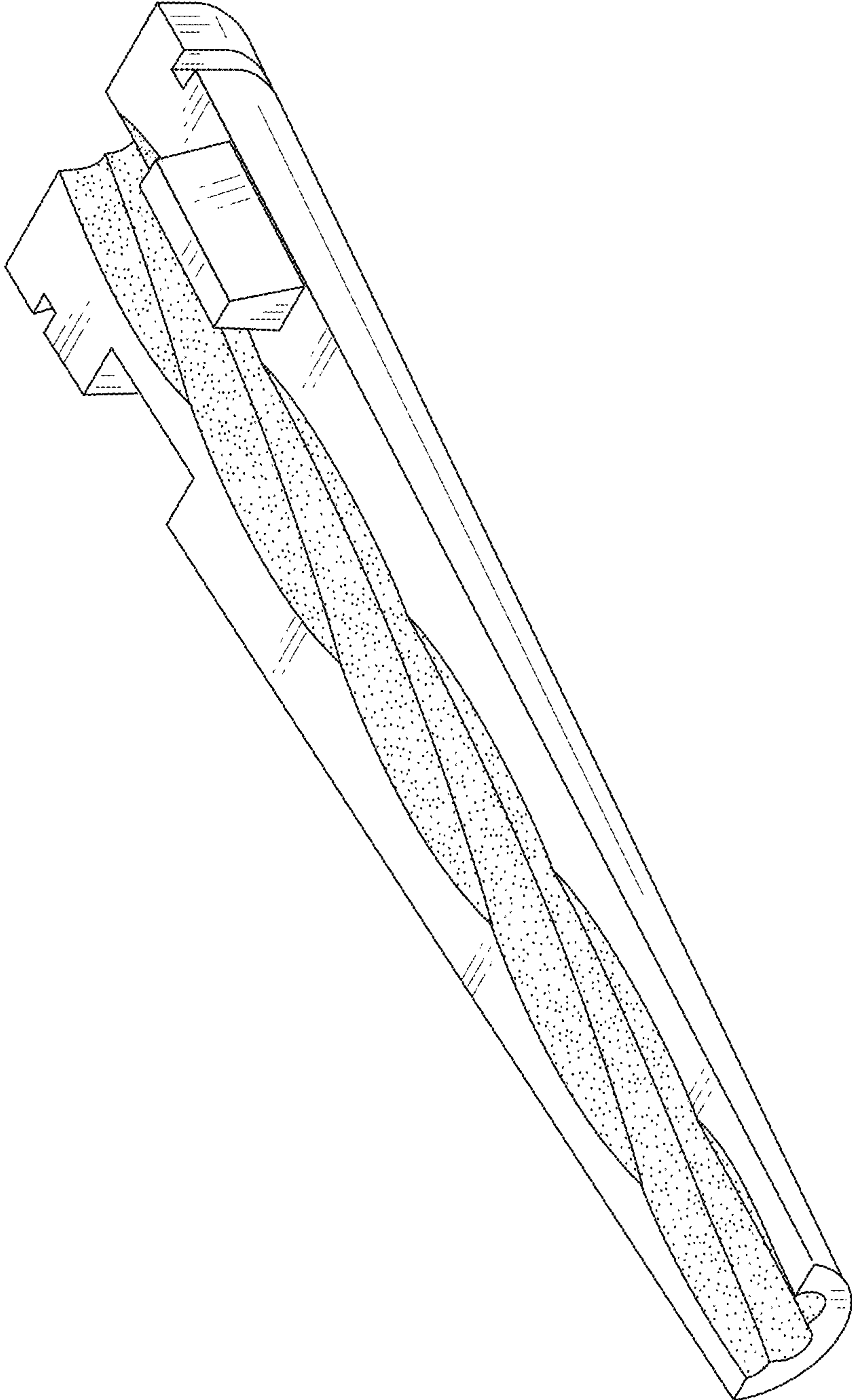
(56) **References Cited**

U.S. PATENT DOCUMENTS

1,797,194 A \* 3/1931 Knapp ..... F16G 11/048  
 403/370

1,857,436 A \* 5/1932 Cole ..... F16G 11/048  
 24/122.3  
 1,894,389 A \* 1/1933 Zapf ..... D07B 9/00  
 24/122.6  
 2,075,335 A \* 3/1937 Brown ..... F16G 11/14  
 403/370  
 2,180,866 A \* 11/1939 Cryer ..... E01F 15/06  
 24/136 R  
 2,341,922 A \* 2/1944 Robbins ..... F16G 11/048  
 294/102.1  
 3,254,383 A \* 6/1966 Ehmann ..... F16G 11/05  
 403/275  
 3,374,511 A \* 3/1968 Barker ..... F16G 11/04  
 403/369  
 3,475,795 A \* 11/1969 Youngblood ..... F16G 11/05  
 174/135  
 3,600,014 A \* 8/1971 Harris ..... F16G 11/05  
 174/176  
 3,676,899 A \* 7/1972 Ehlert ..... F16G 11/05  
 403/247  
 3,879,147 A \* 4/1975 Morell ..... E04C 5/122  
 24/115 M  
 3,952,377 A \* 4/1976 Morell ..... E04C 5/122  
 24/136 R  
 4,066,368 A \* 1/1978 Mastalski ..... F16G 11/04  
 24/115 M  
 4,459,722 A 7/1984 Dziedzic et al.  
 4,509,233 A \* 4/1985 Shaw ..... G02B 6/48  
 24/115 M  
 5,211,500 A \* 5/1993 Takaki ..... B22D 19/14  
 403/269  
 5,233,730 A \* 8/1993 Milne ..... E21D 21/008  
 24/115 M  
 5,369,849 A \* 12/1994 De France ..... F16G 11/048  
 24/115 M  
 6,015,953 A \* 1/2000 Tosaka ..... H01R 4/20  
 174/79  
 D775,085 S \* 12/2016 Hachisuka ..... D13/153  
 2002/0076274 A1 \* 6/2002 Carlsen ..... F16G 11/048  
 403/314  
 2012/0141198 A1 \* 6/2012 Kondo ..... F16G 11/02  
 403/361  
 2012/0240365 A1 \* 9/2012 Van der Ende ..... E21B 19/12  
 24/457  
 2016/0237615 A1 \* 8/2016 Manabe ..... D07B 1/18  
 2017/0022661 A1 1/2017 Fukuda et al.

\* cited by examiner



*Fig. 1*



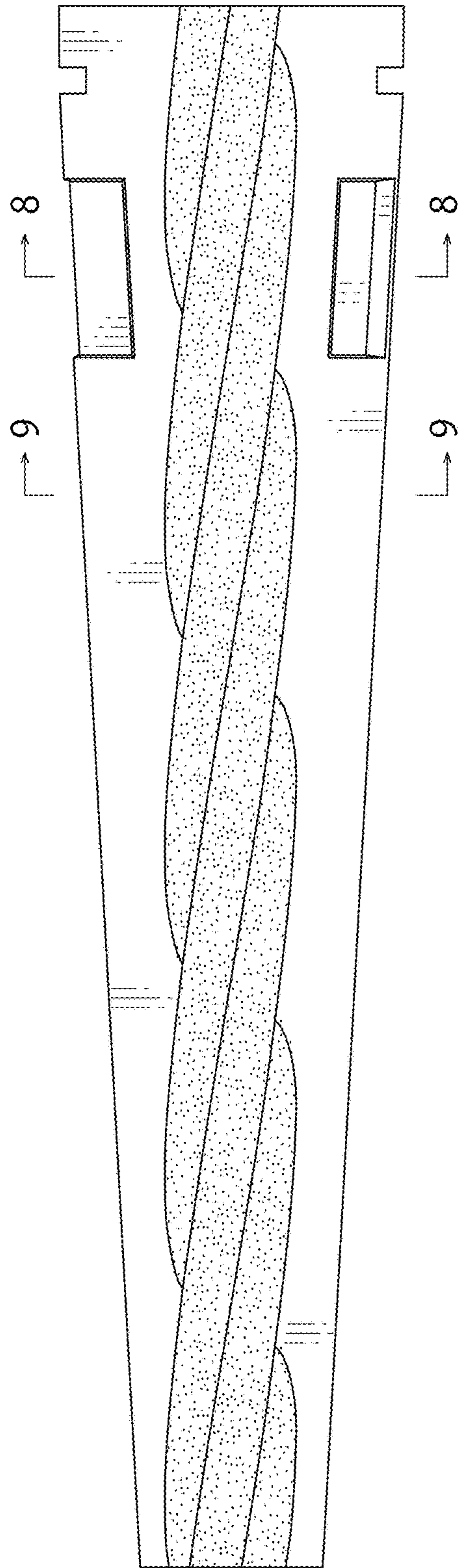


Fig. 2

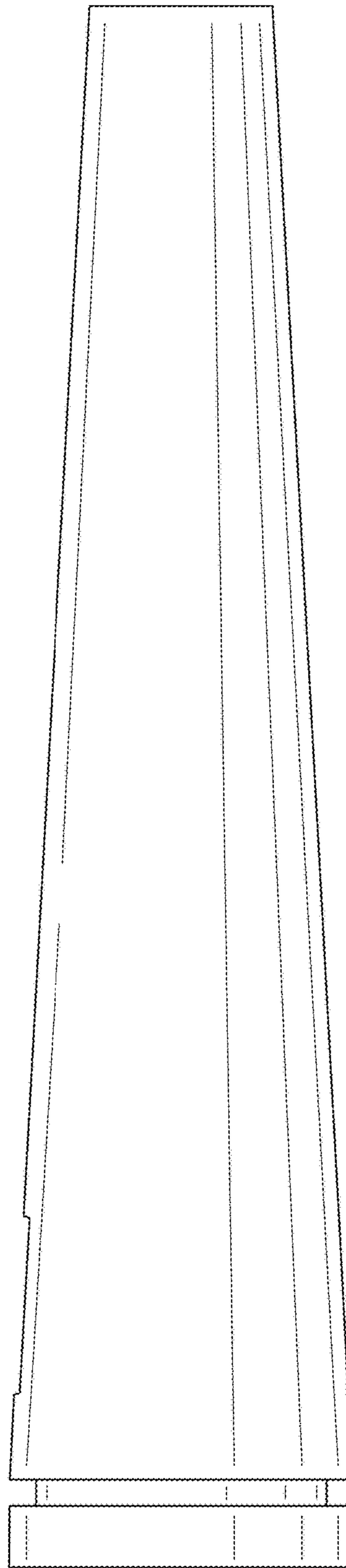
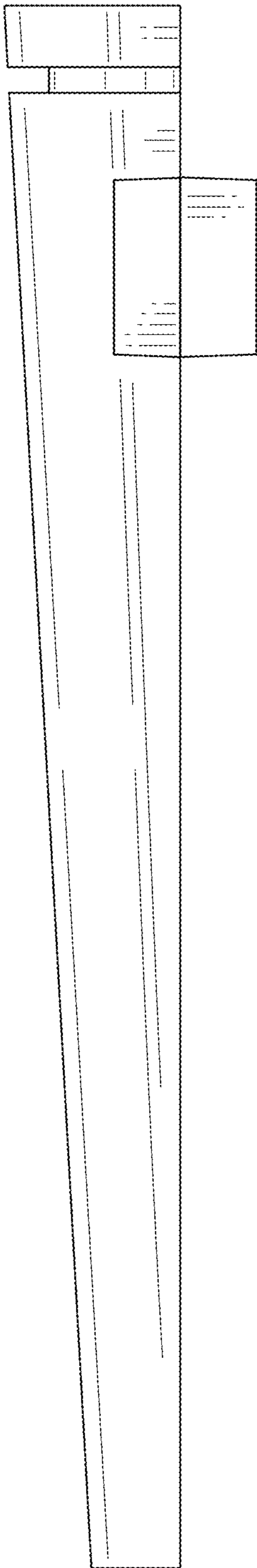
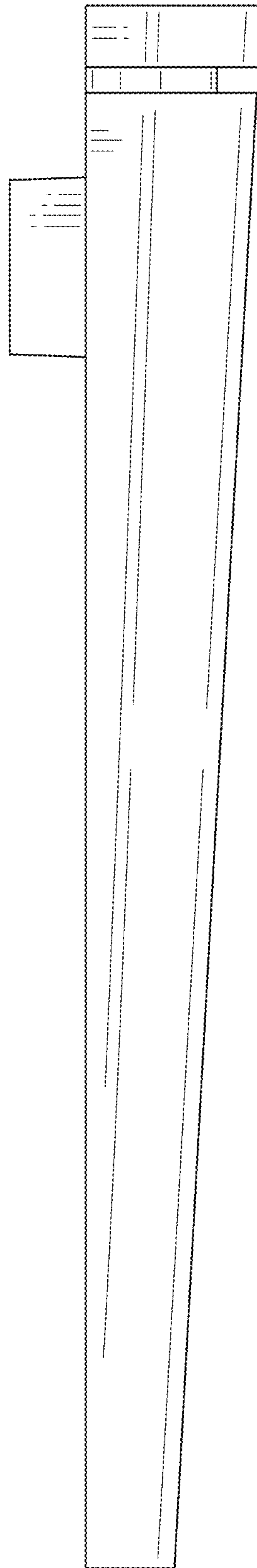


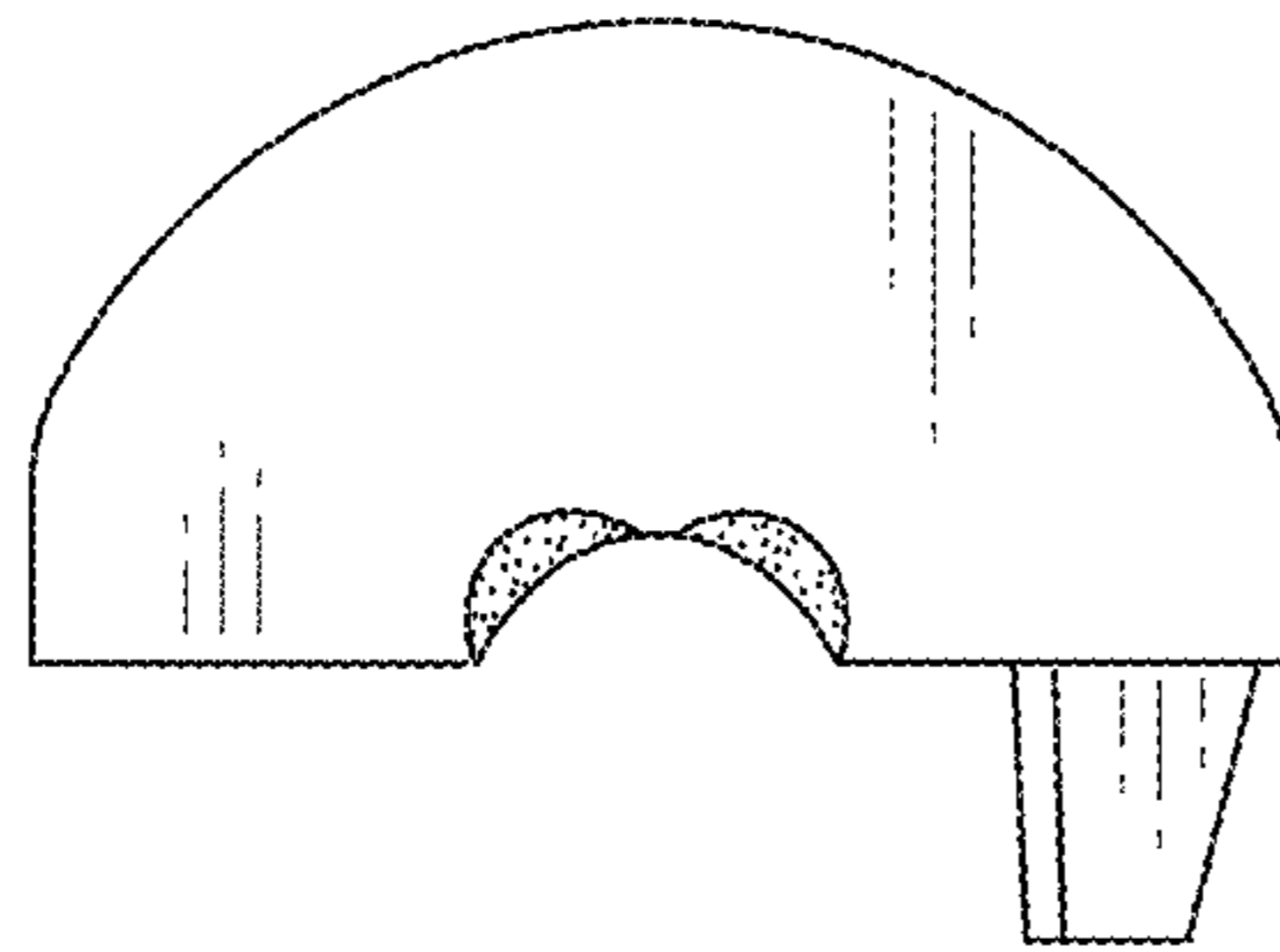
Fig. 3



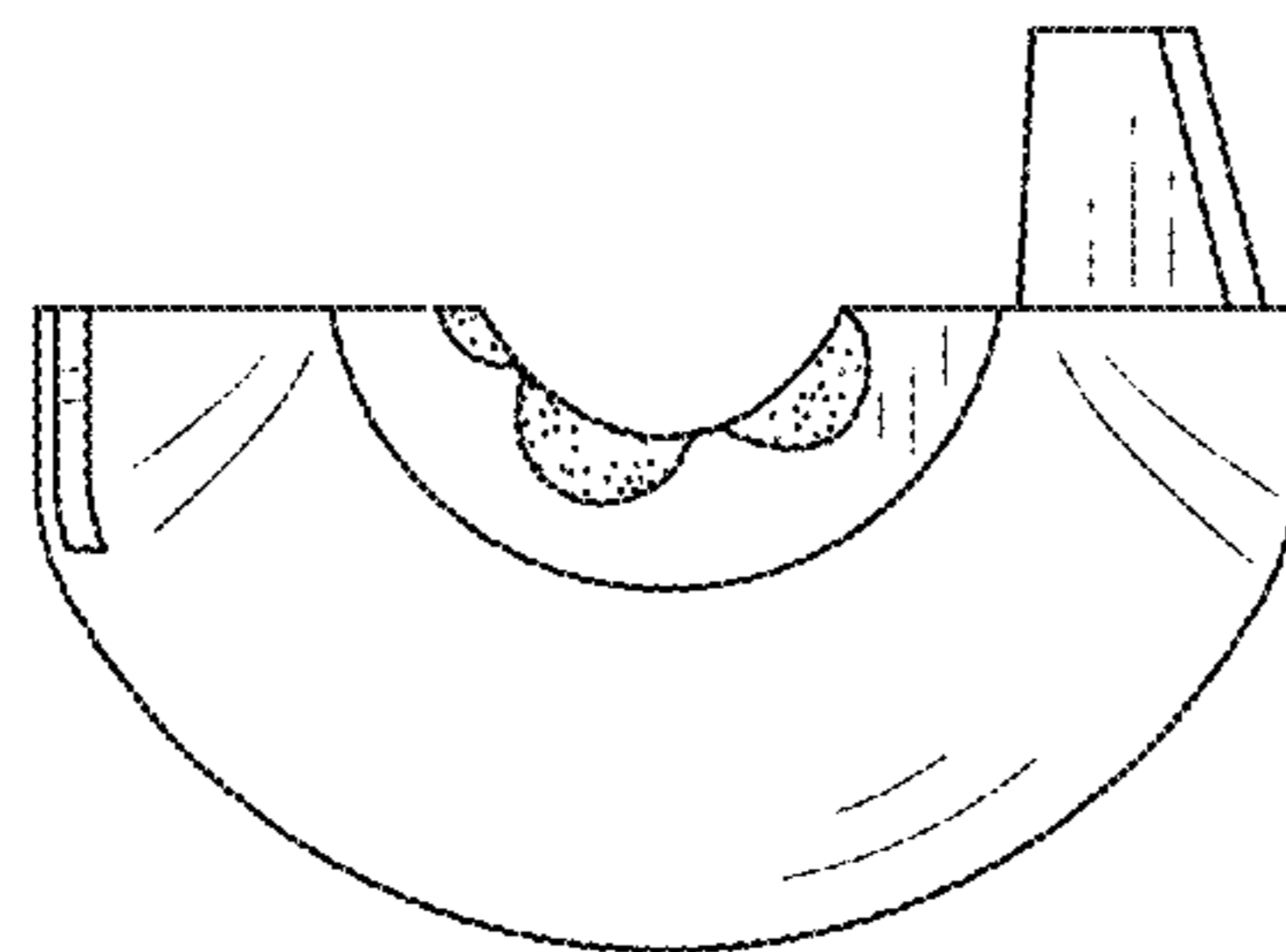
*Fig. 4*



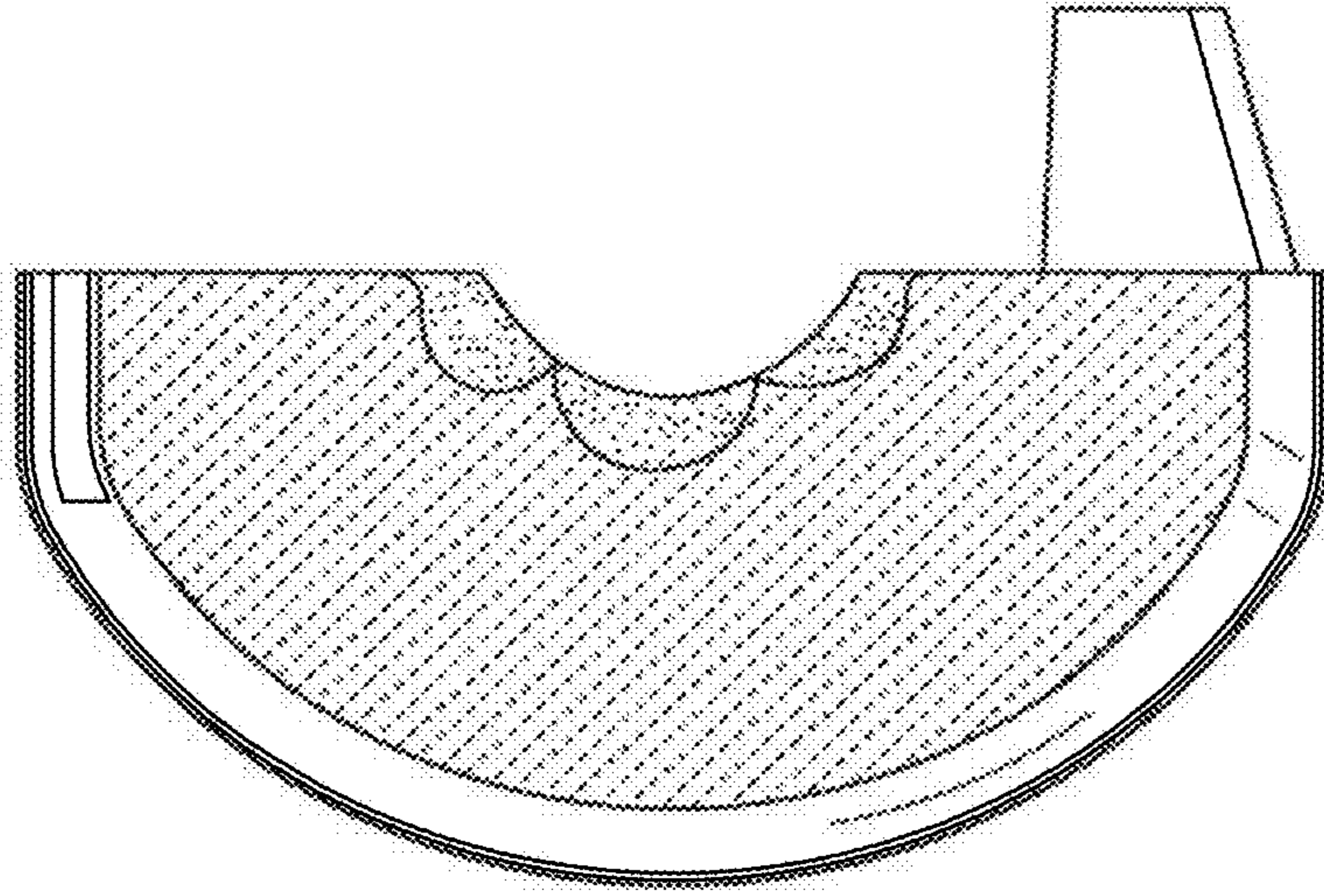
*Fig. 5*



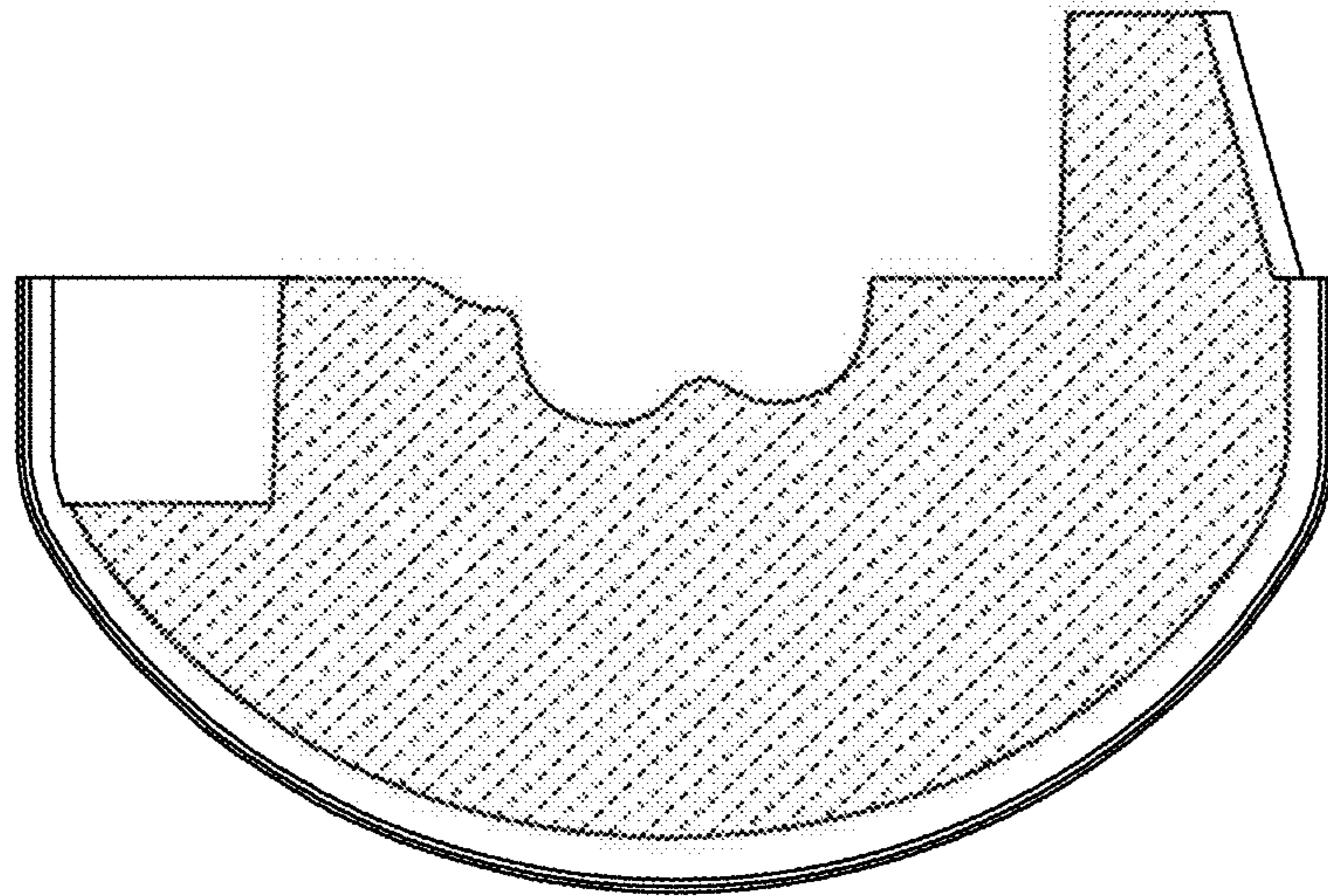
*Fig. 7*



*Fig. 6*



*Fig. 9*



*Fig. 8*



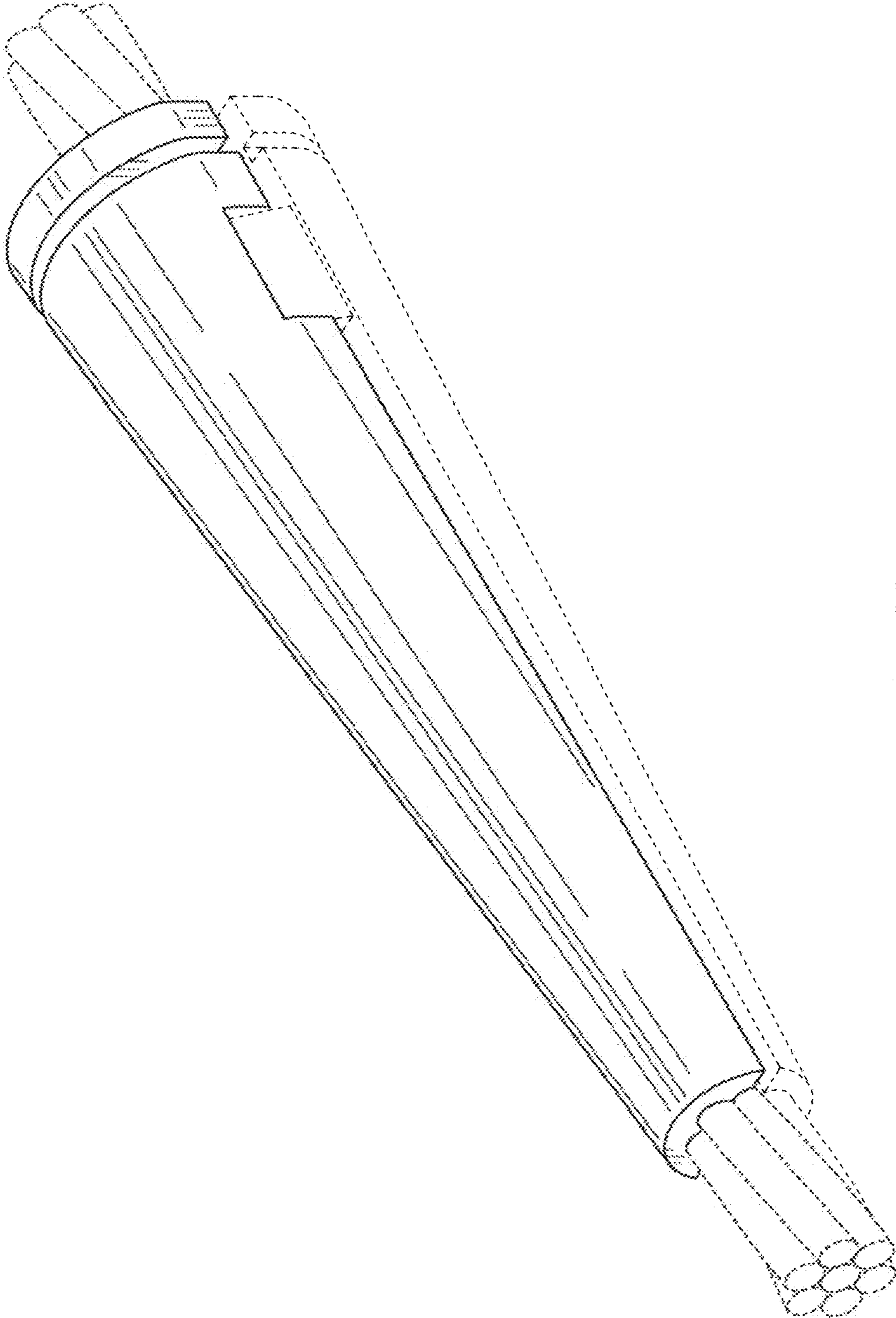
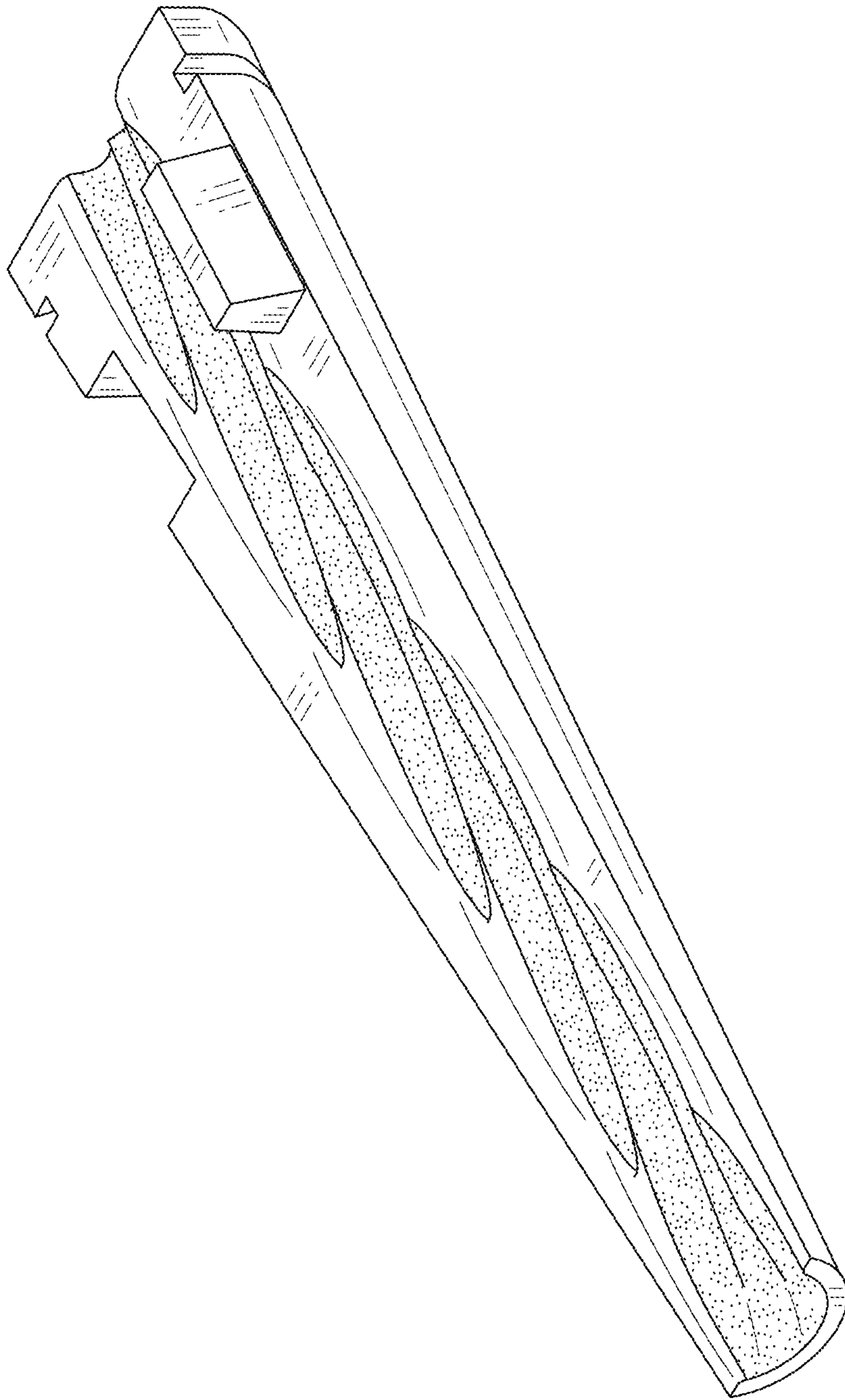


Fig. 10





*Fig. 11*

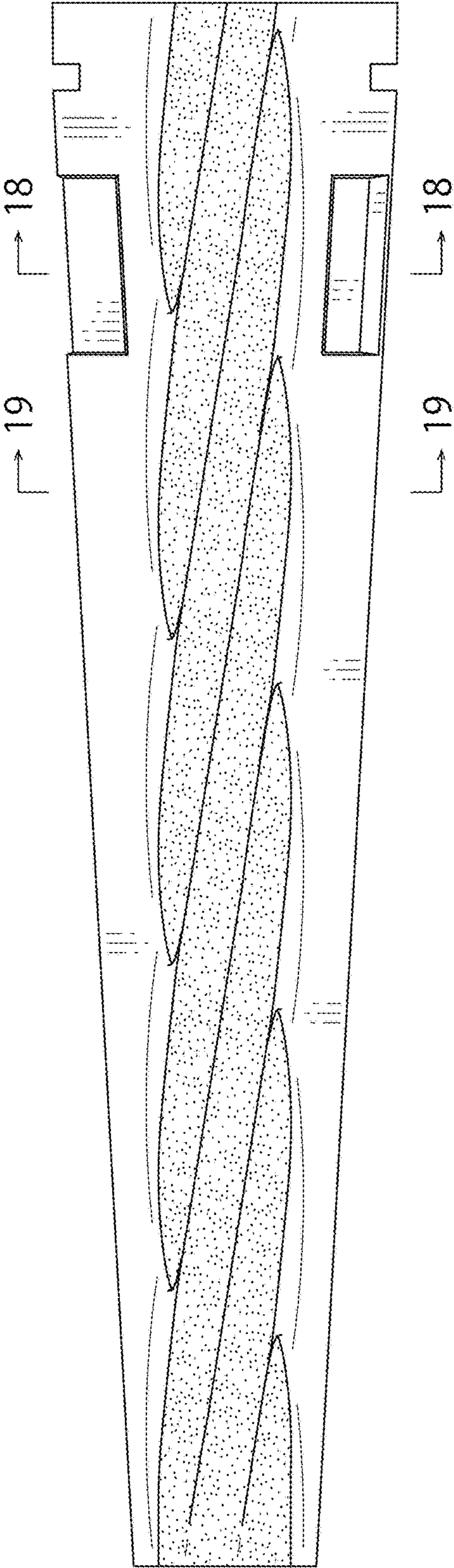


Fig. 12

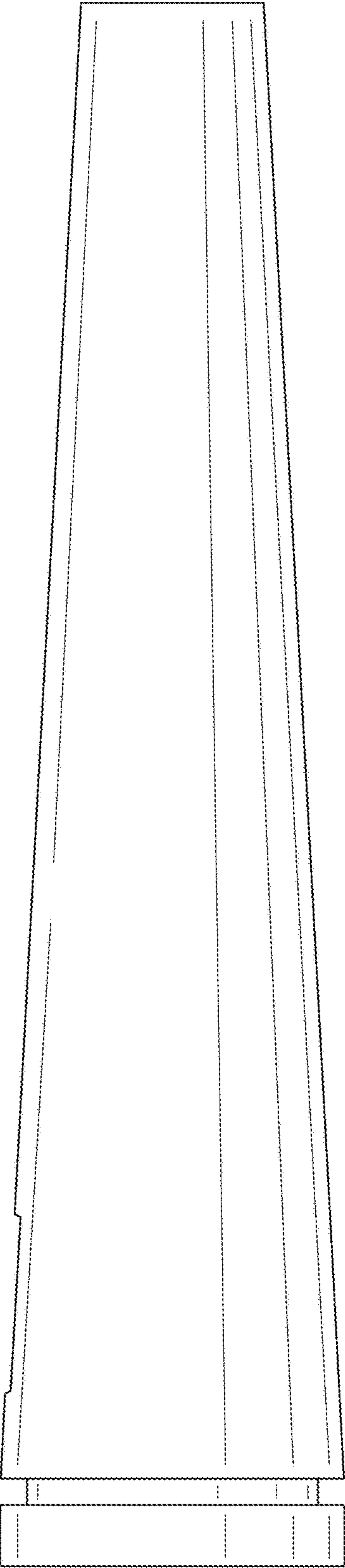
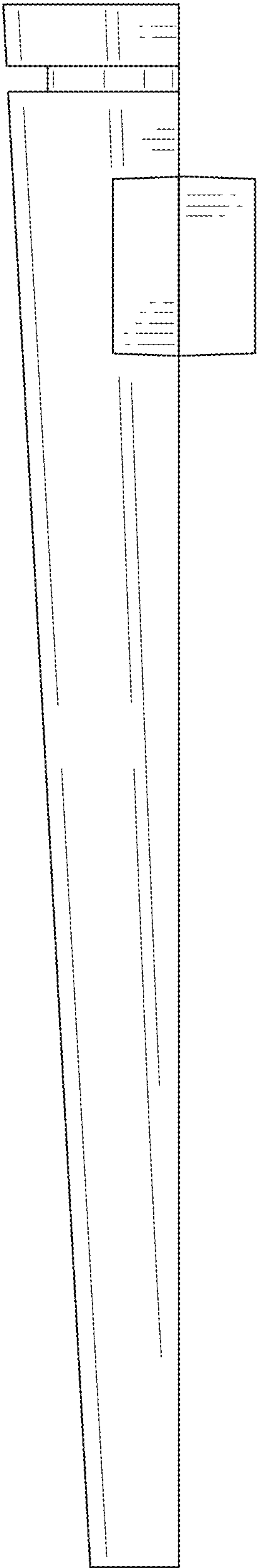
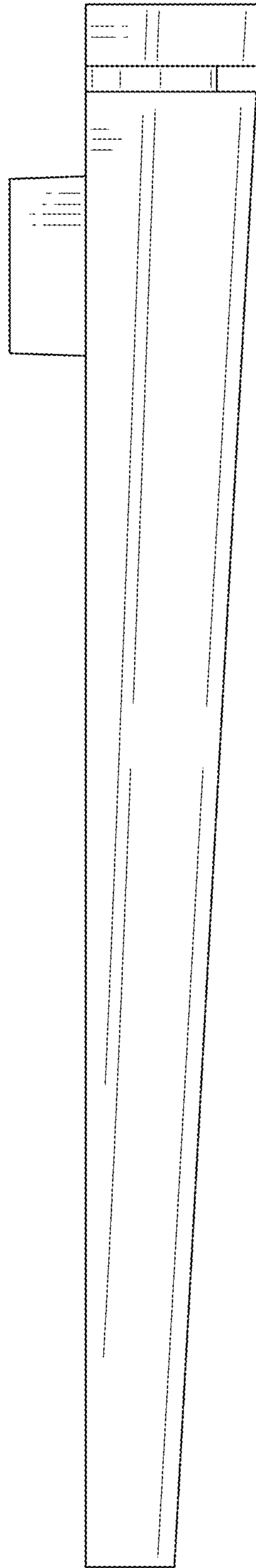


Fig. 13



*Fig. 14*



*Fig. 15*

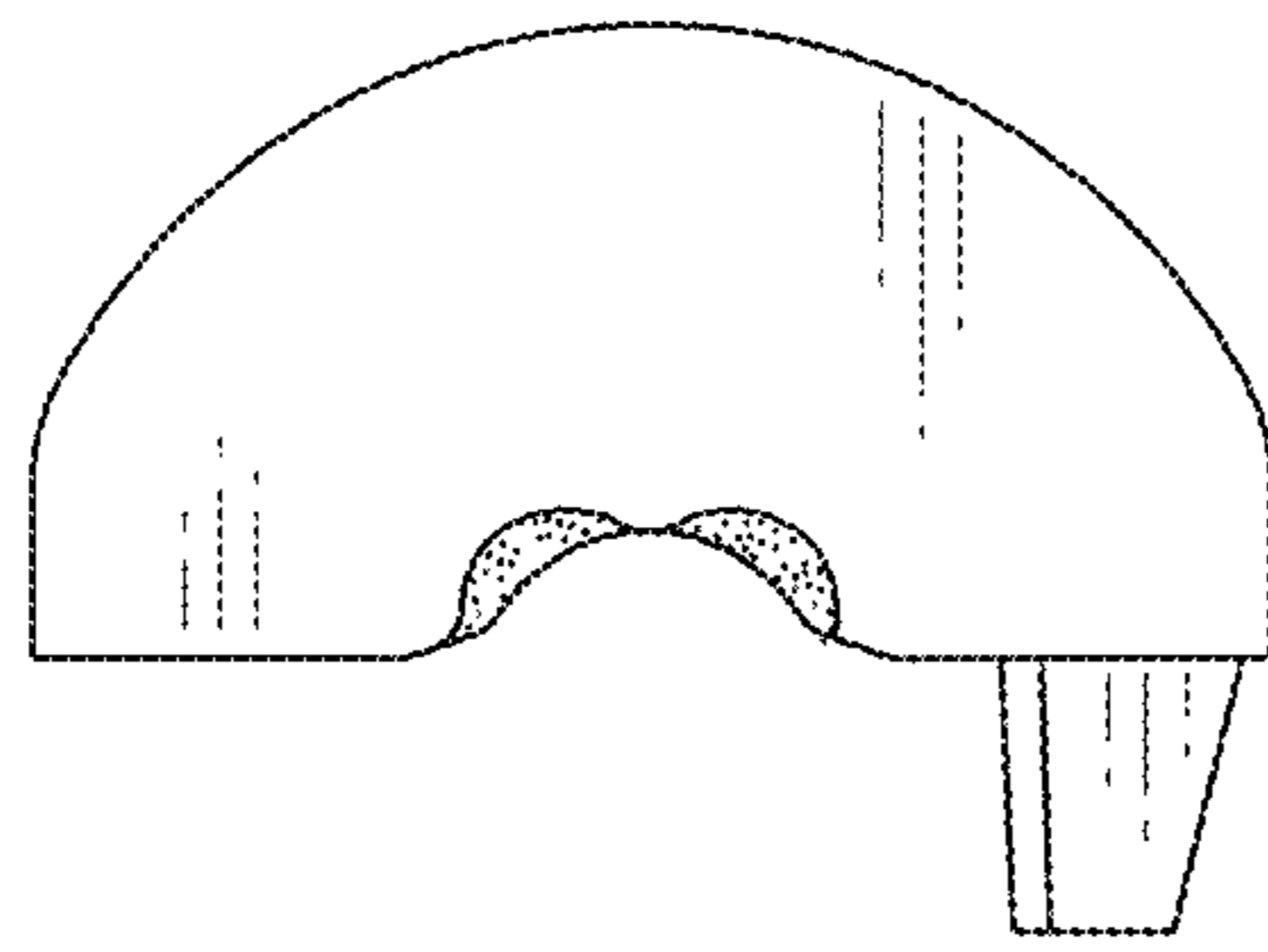


Fig. 17

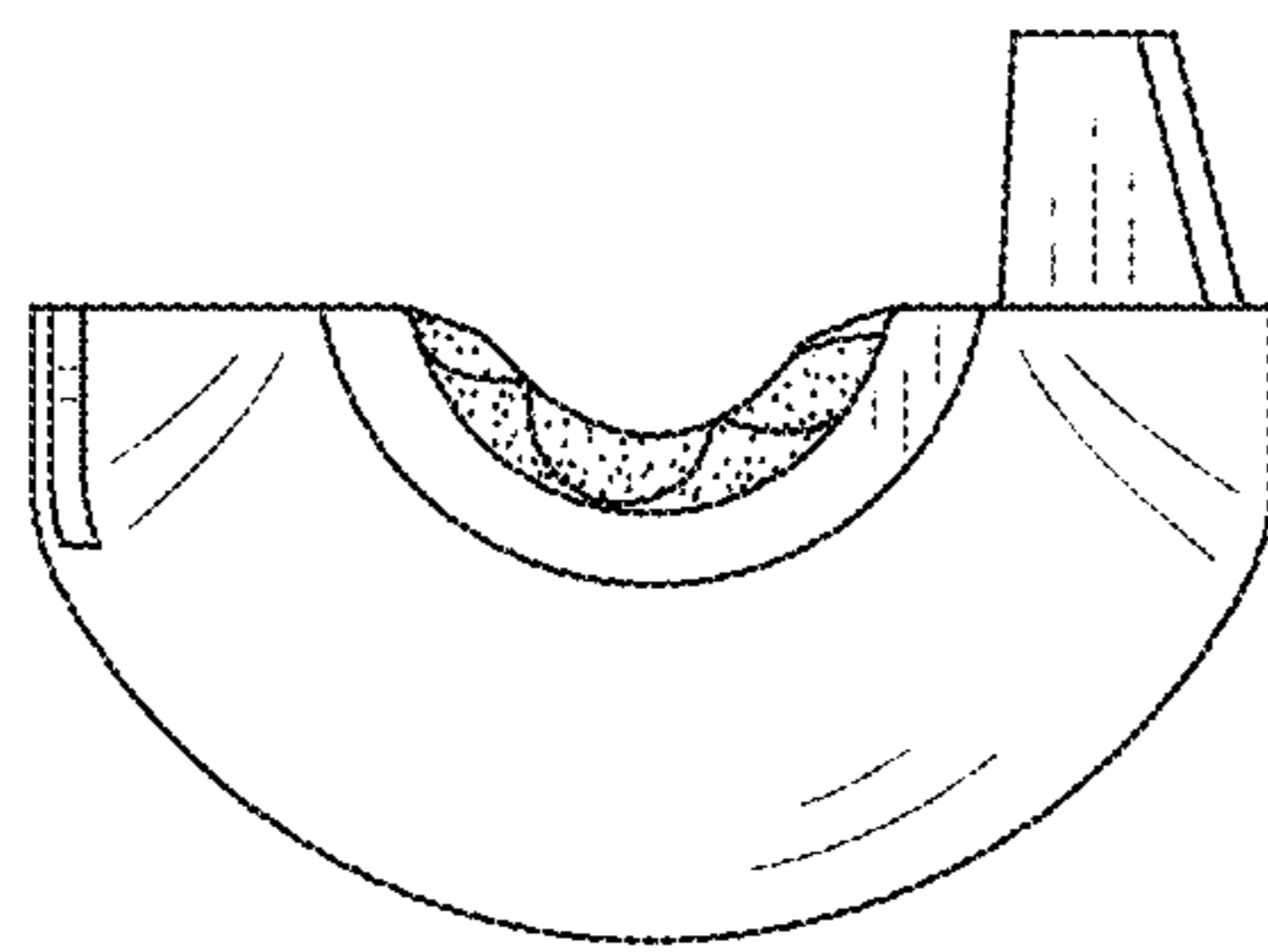


Fig. 16



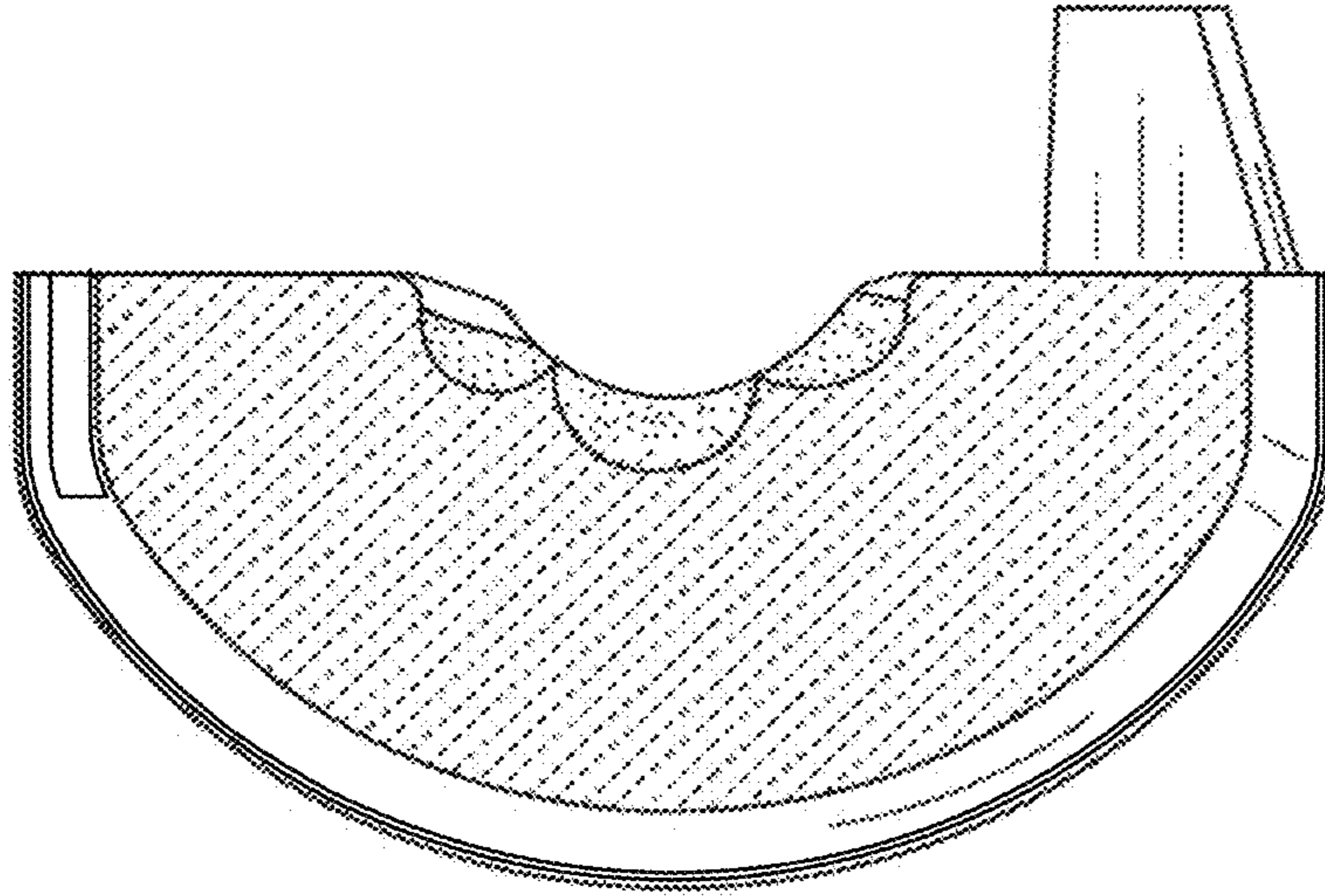


Fig. 19

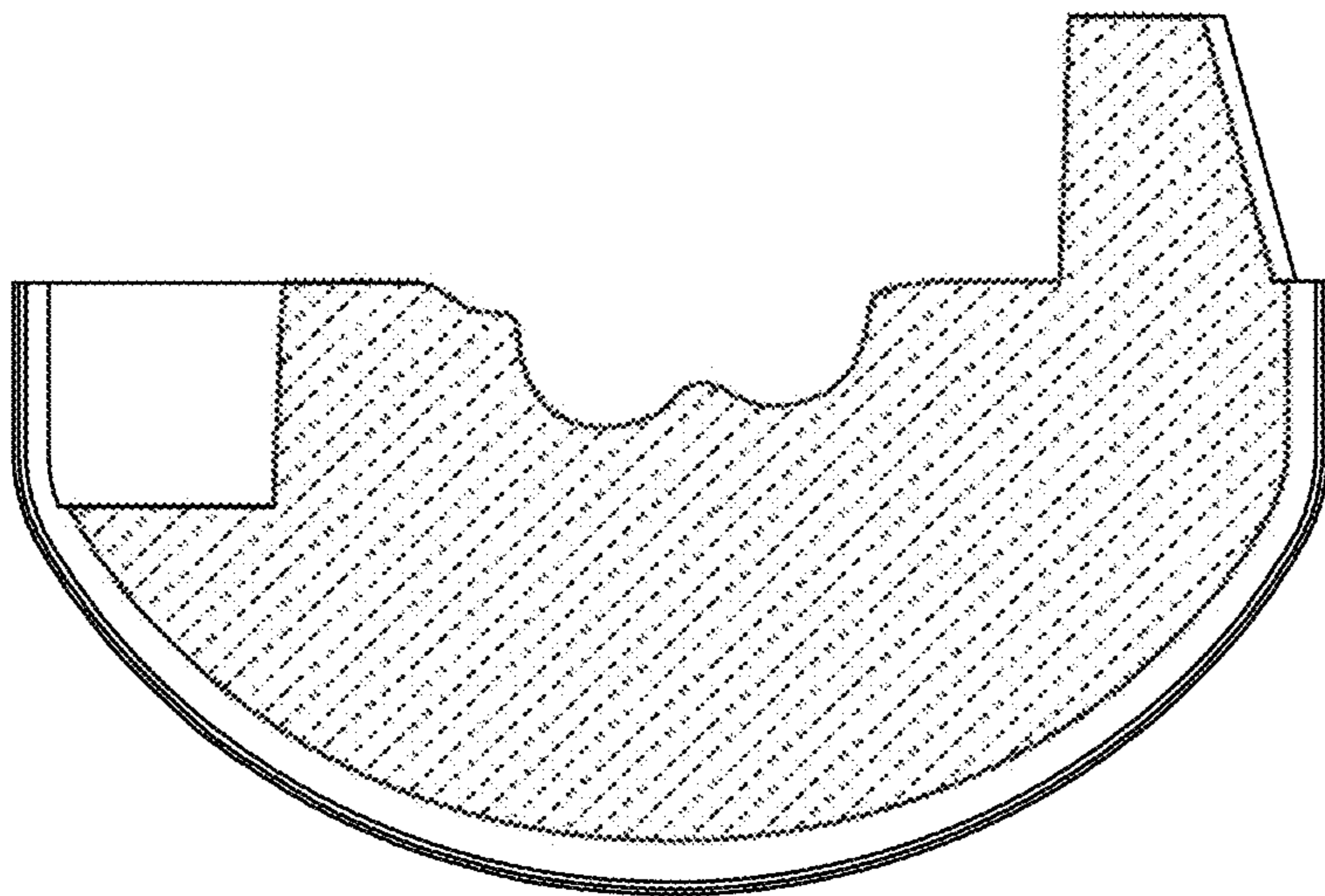
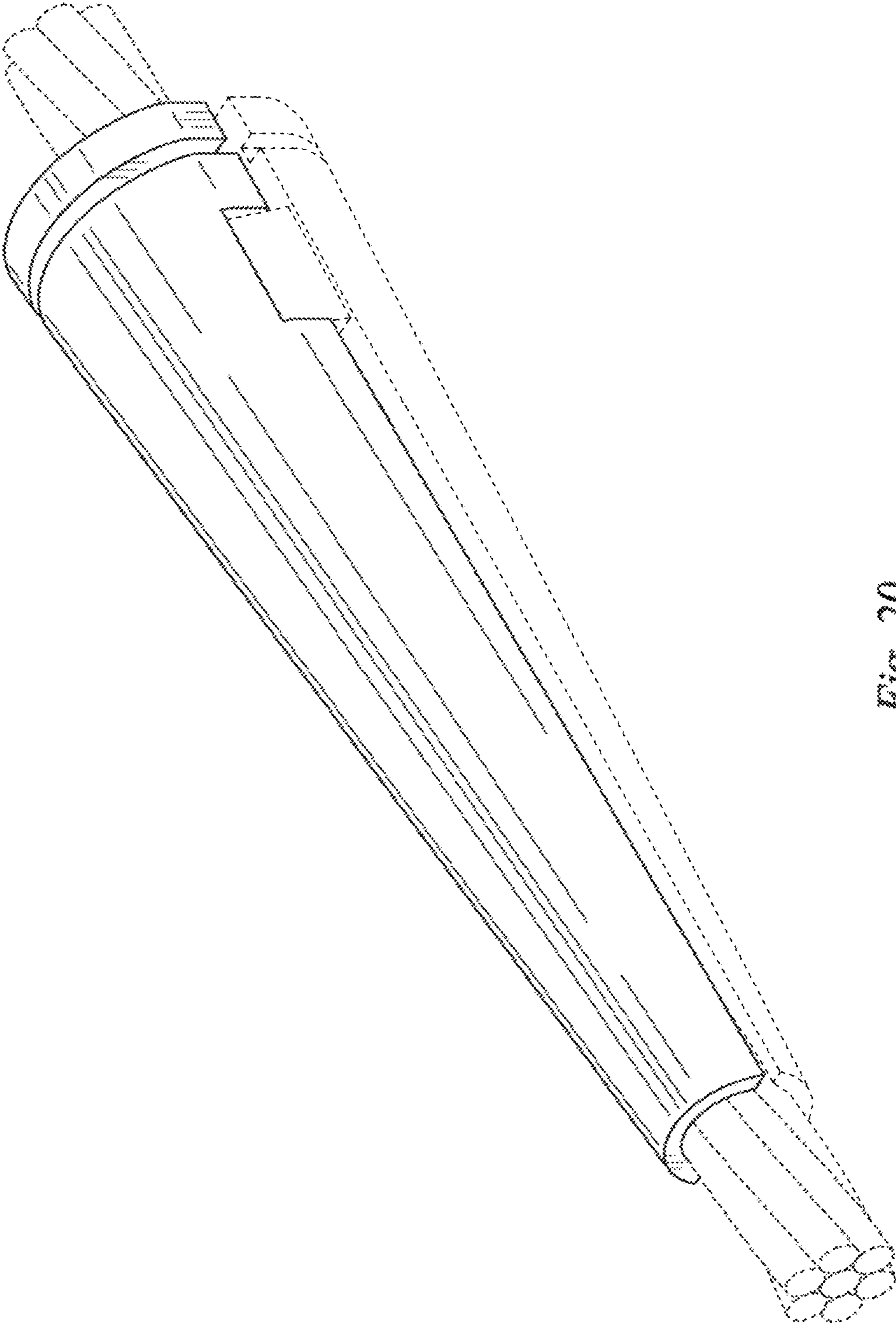


Fig. 18



*Fig. 20*