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

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(45) **Date of Patent:** **** Feb. 13, 2018**

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

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

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(22) Filed: **Feb. 17, 2015**

(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)

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Assistant Examiner — Ieisha 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, top and left side perspective view of a first 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. 2 is a front view thereof, the rear view being identical; FIG. 3 is a left side view thereof; FIG. 4 is a right side view thereof; FIG. 5 is a top plan view thereof, the bottom plan view being identical; FIG. 6 is a front view of the half-body thereof, the rear view being identical; FIG. 7 is a left side view of the half-body thereof; FIG. 8 is a right side view of the half-body thereof; FIG. 9 is a top plan view of the half-body thereof; FIG. 10 is a bottom plan view of the half-body thereof; FIG. 11 is a perspective view showing the environmental use thereof; FIG. 12 is an exploded perspective view showing the environmental use thereof; FIG. 13 is a front, top 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. 14 is a front view thereof, the rear view being identical; FIG. 15 is a left side view thereof; FIG. 16 is a right side view thereof; FIG. 17 is a top plan view of thereof, the bottom plan view being identical; FIG. 18 is a front view of the half-body thereof, the rear view being identical; FIG. 19 is a left side view of the half-body thereof; FIG. 20 is a right side view of the half-body thereof; FIG. 21 is a top plan view of the half-body thereof; FIG. 22 is a bottom plan view of the half-body thereof; FIG. 23 is an enlarged cross sectional view taken along line 23-23 in FIG. 14 thereof;

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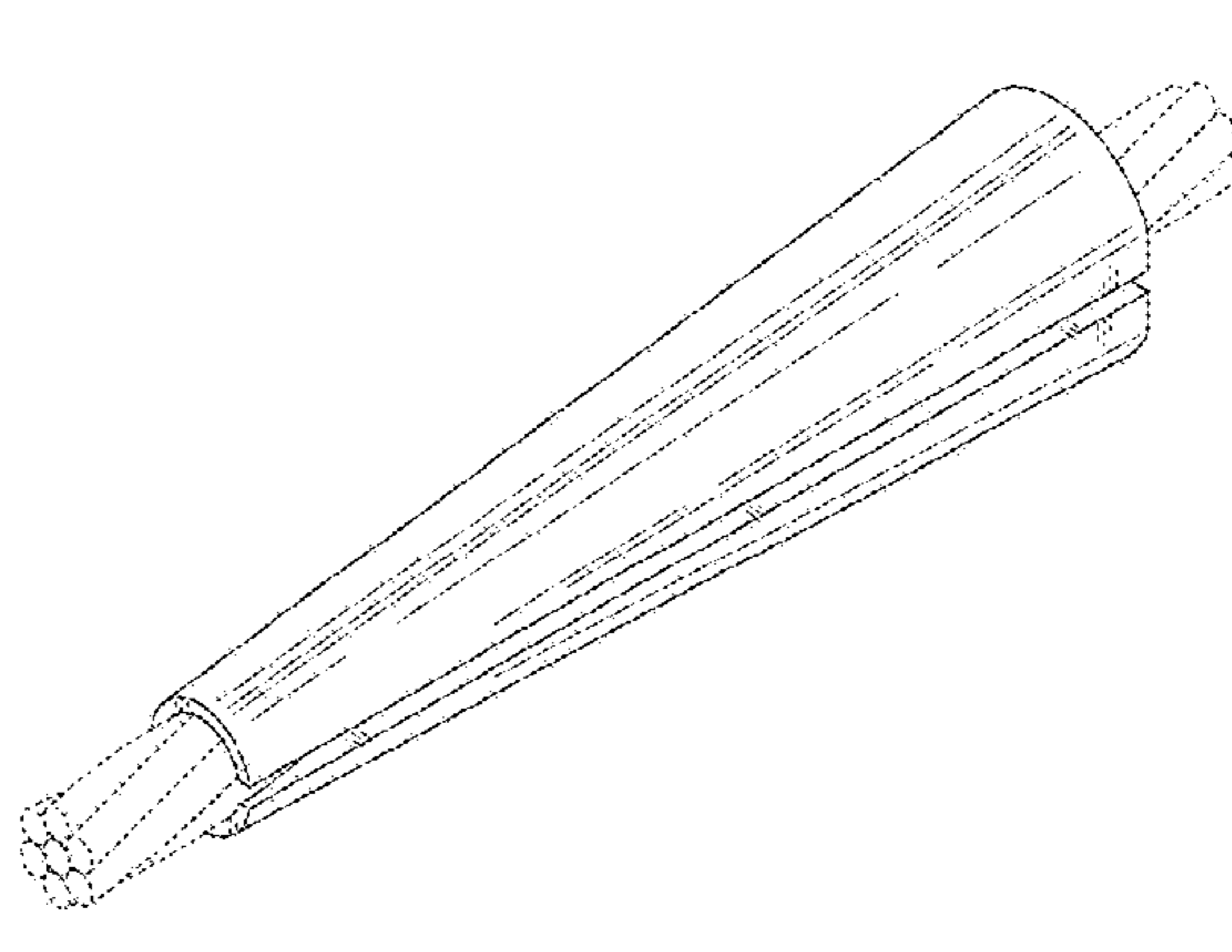
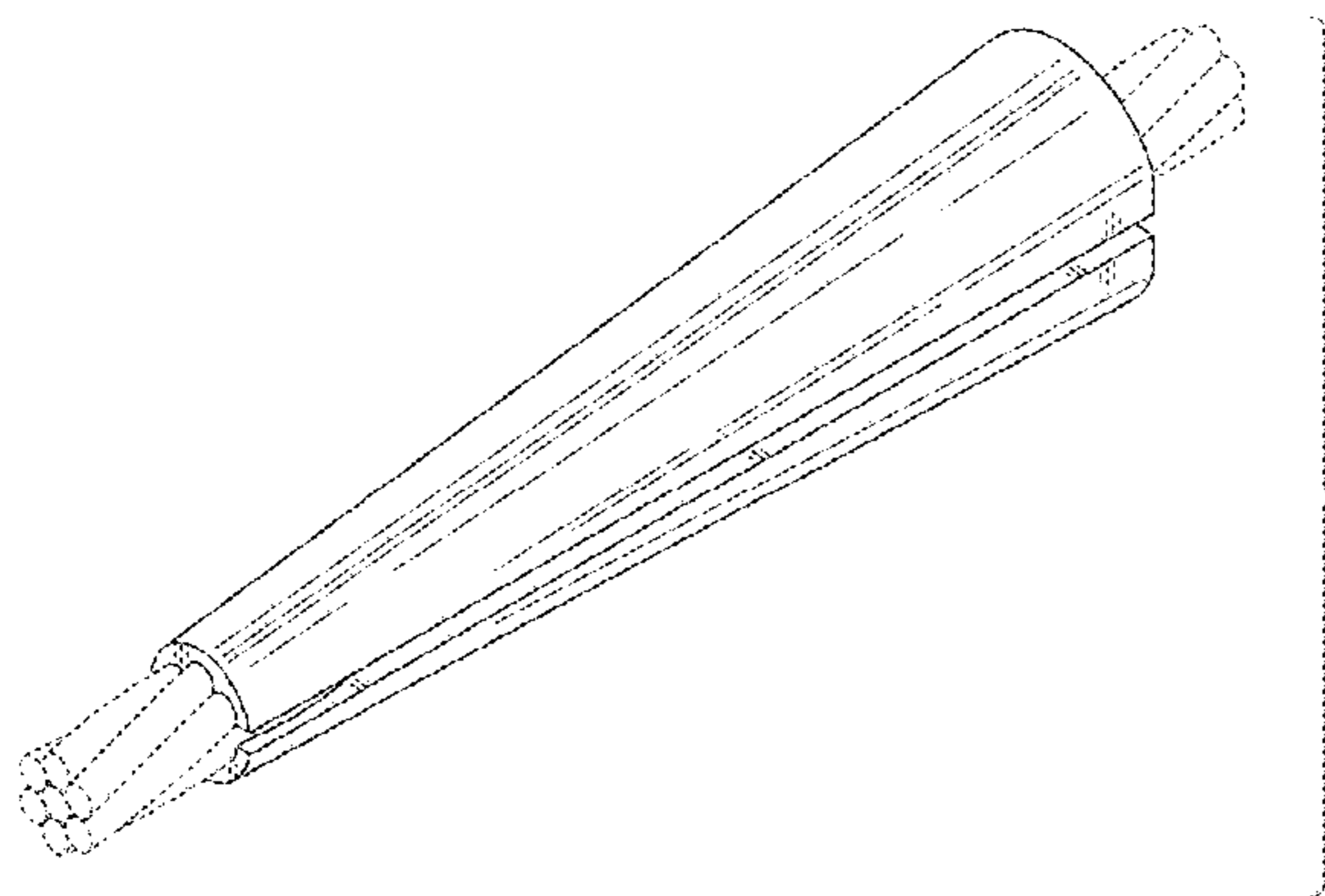


FIG. 24 is a perspective view showing the environmental use thereof; and,
 FIG. 25 is an exploded perspective view showing the environmental use thereof.
 The broken line showing in FIGS. 11-12 and 24-25 illustrates the environment of the claimed design and forms no part thereof.

1 Claim, 13 Drawing Sheets

(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
 4,509,233 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

* cited by examiner

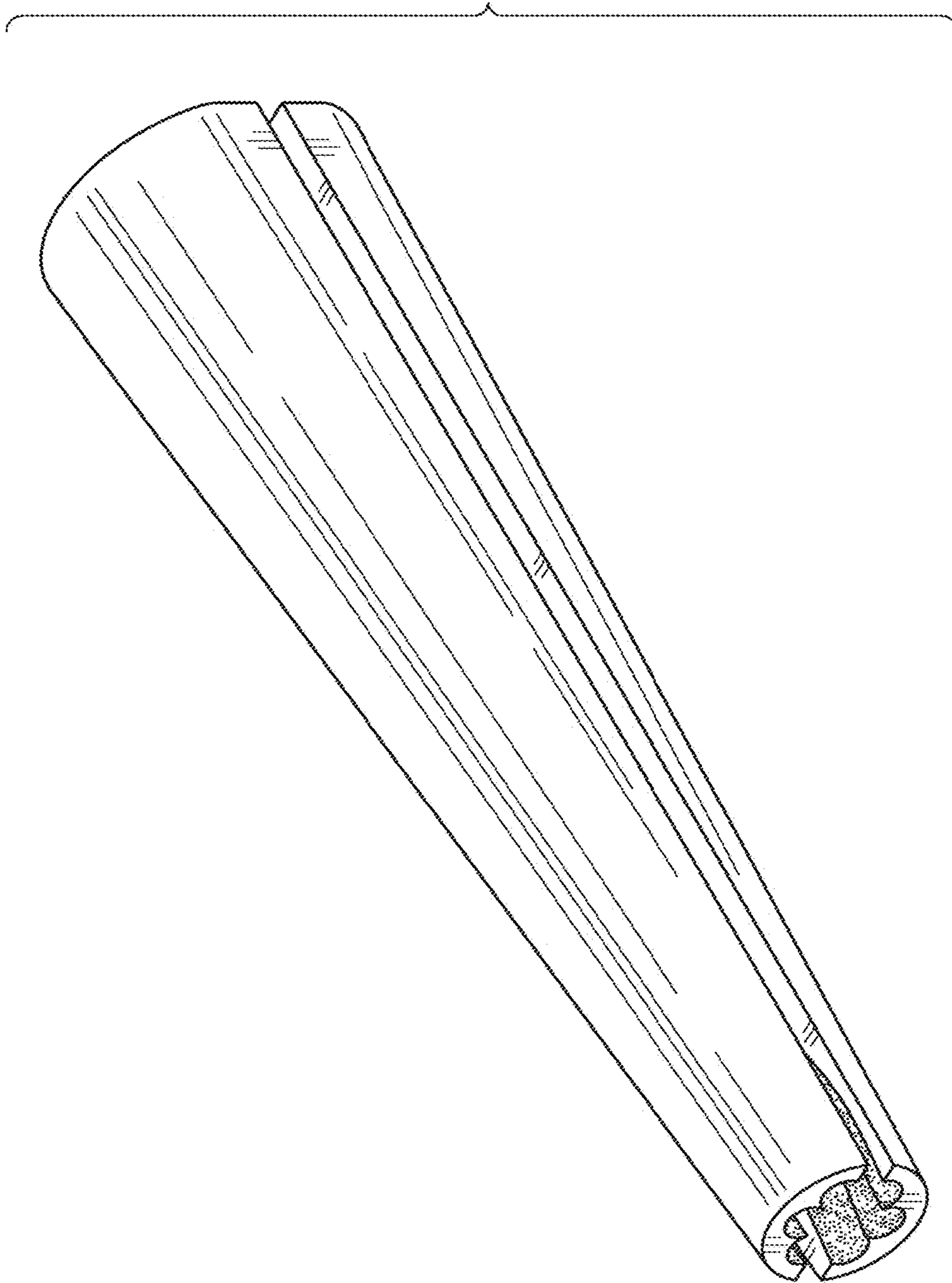


Fig. 1

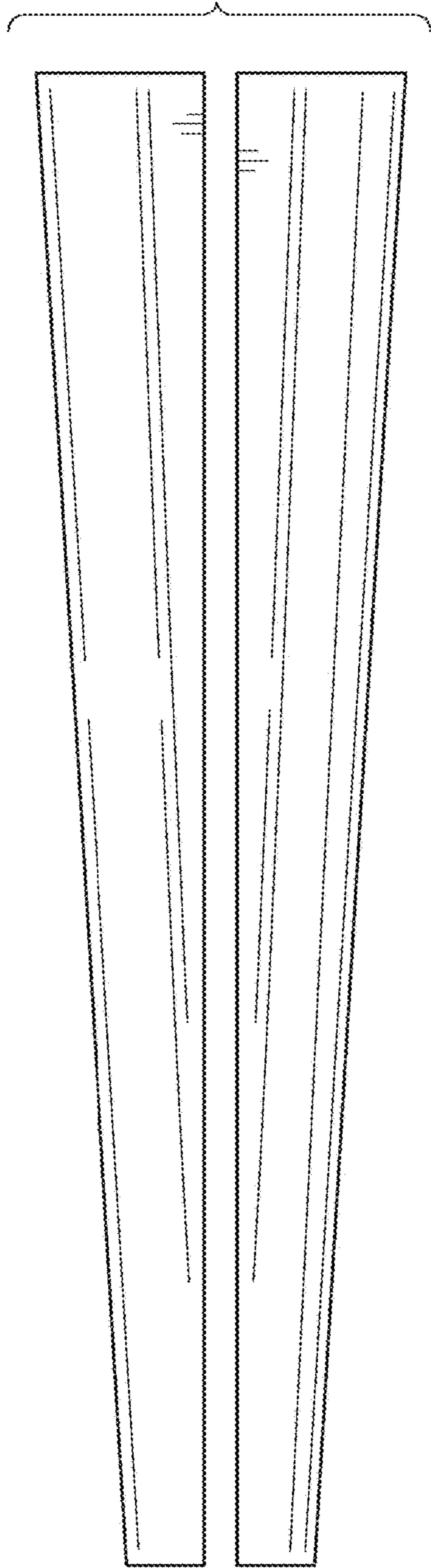


Fig. 2

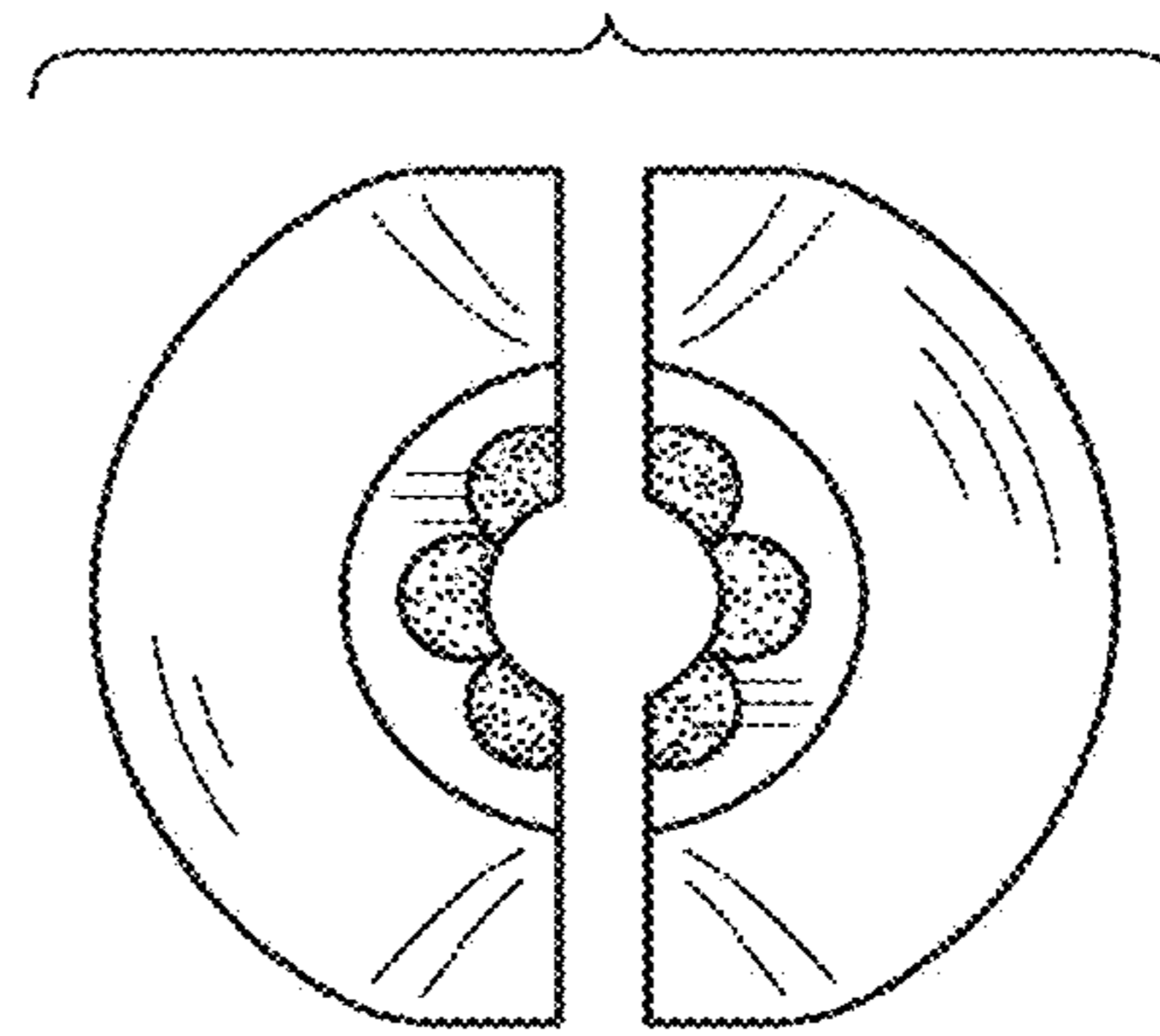


Fig. 3

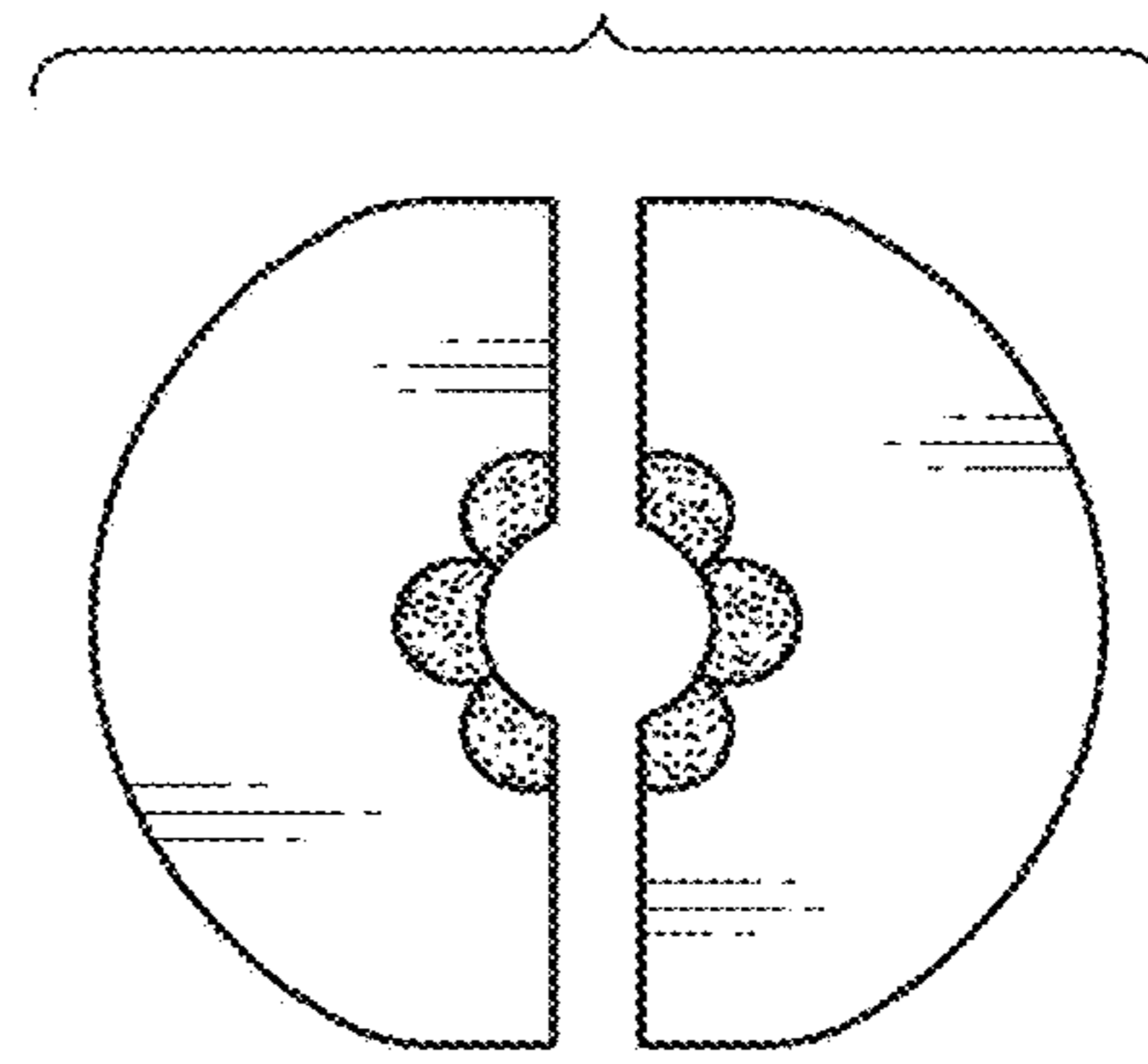


Fig. 4

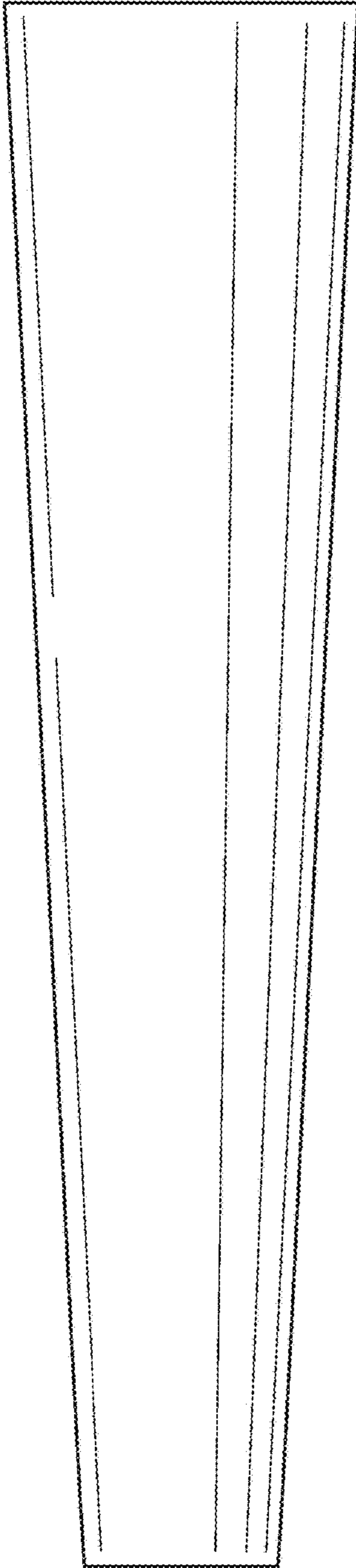


Fig. 5

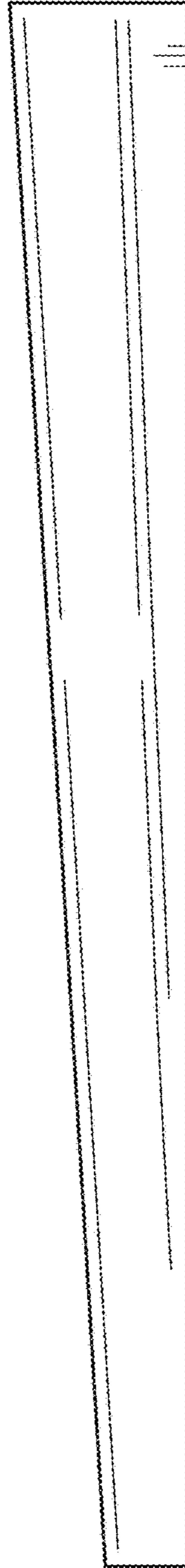


Fig. 6



Fig. 7

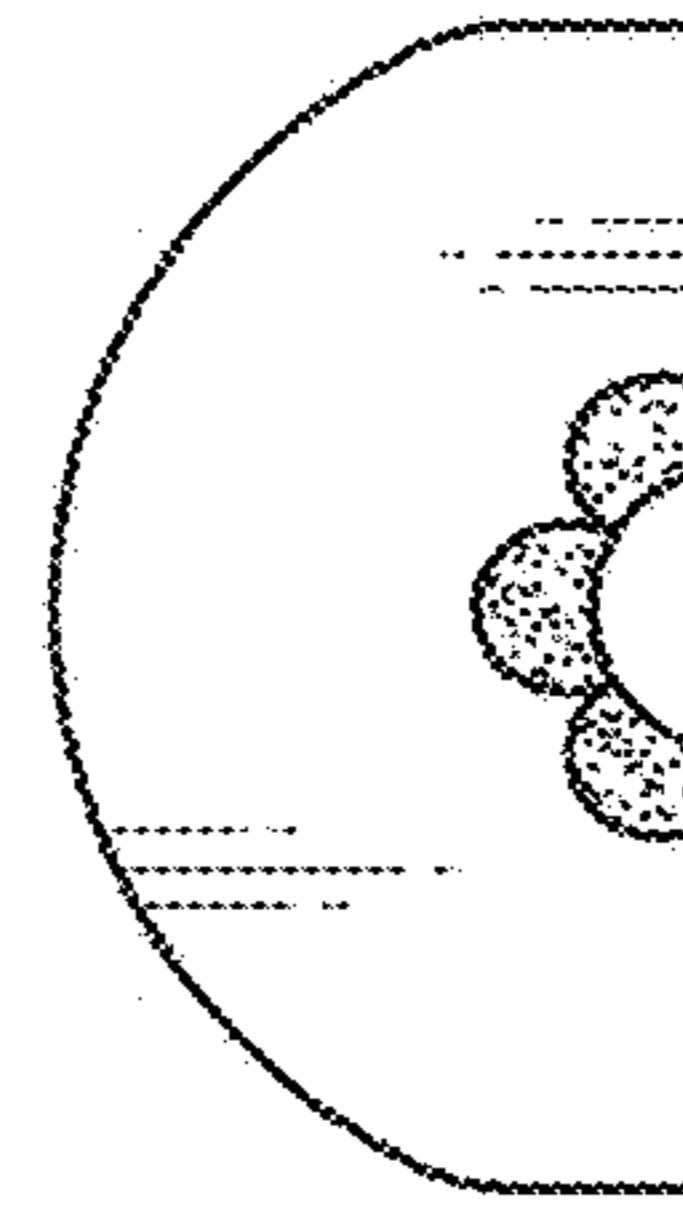


Fig. 8

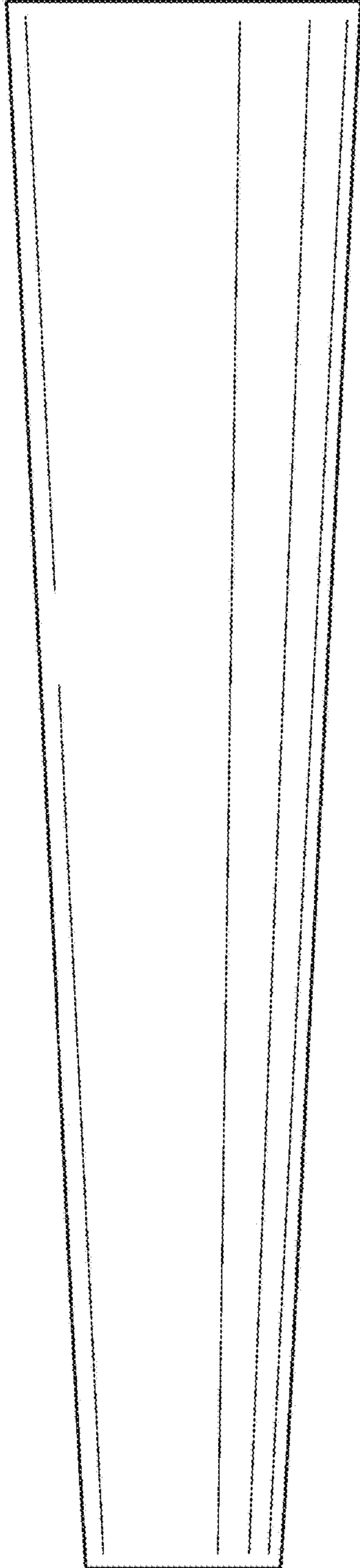


Fig. 9

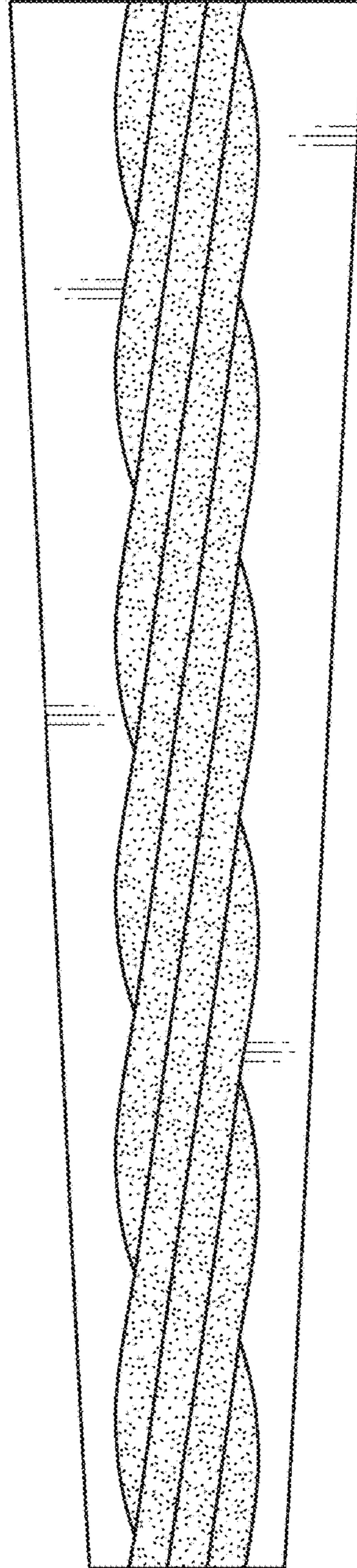


Fig. 10

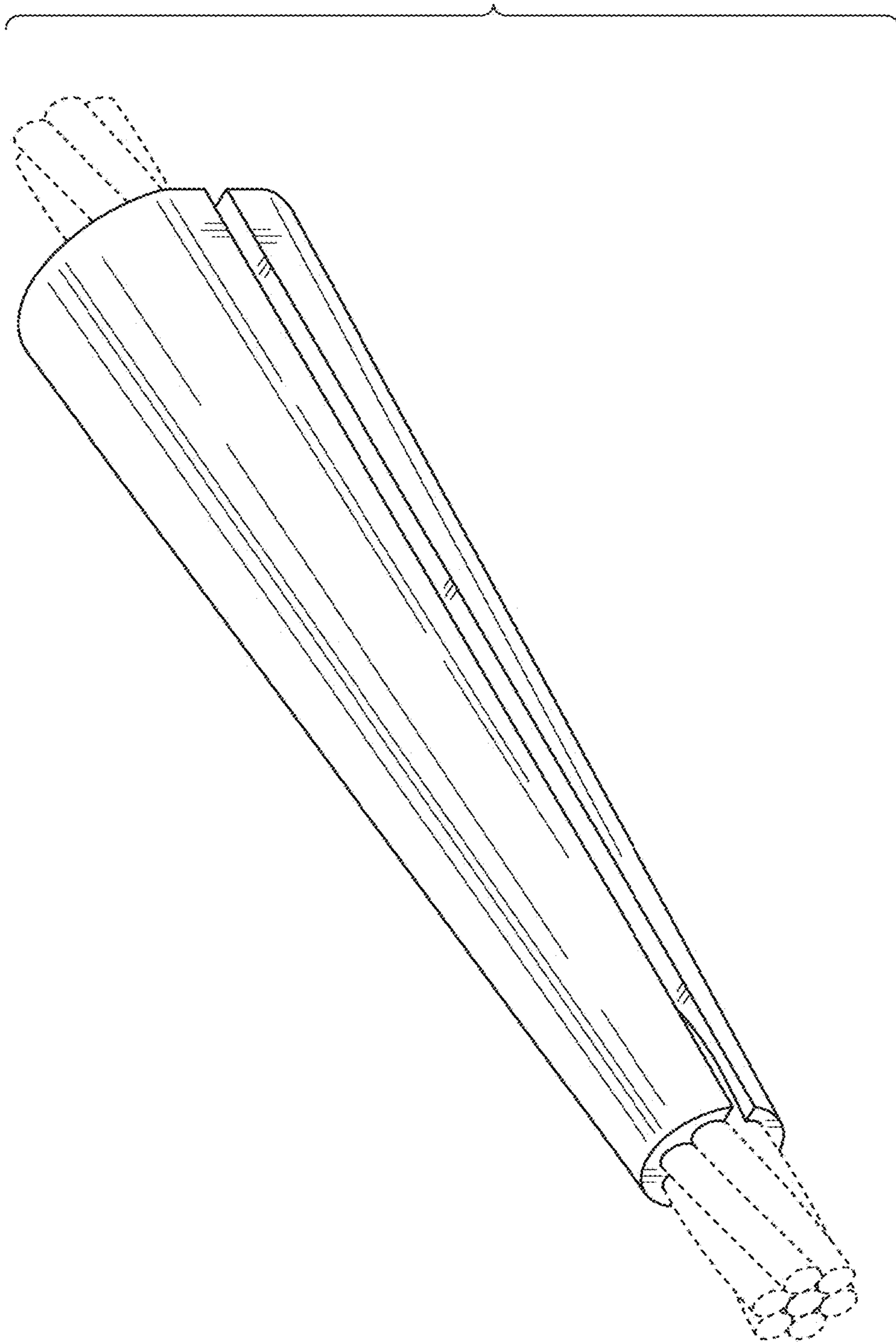


Fig. 11

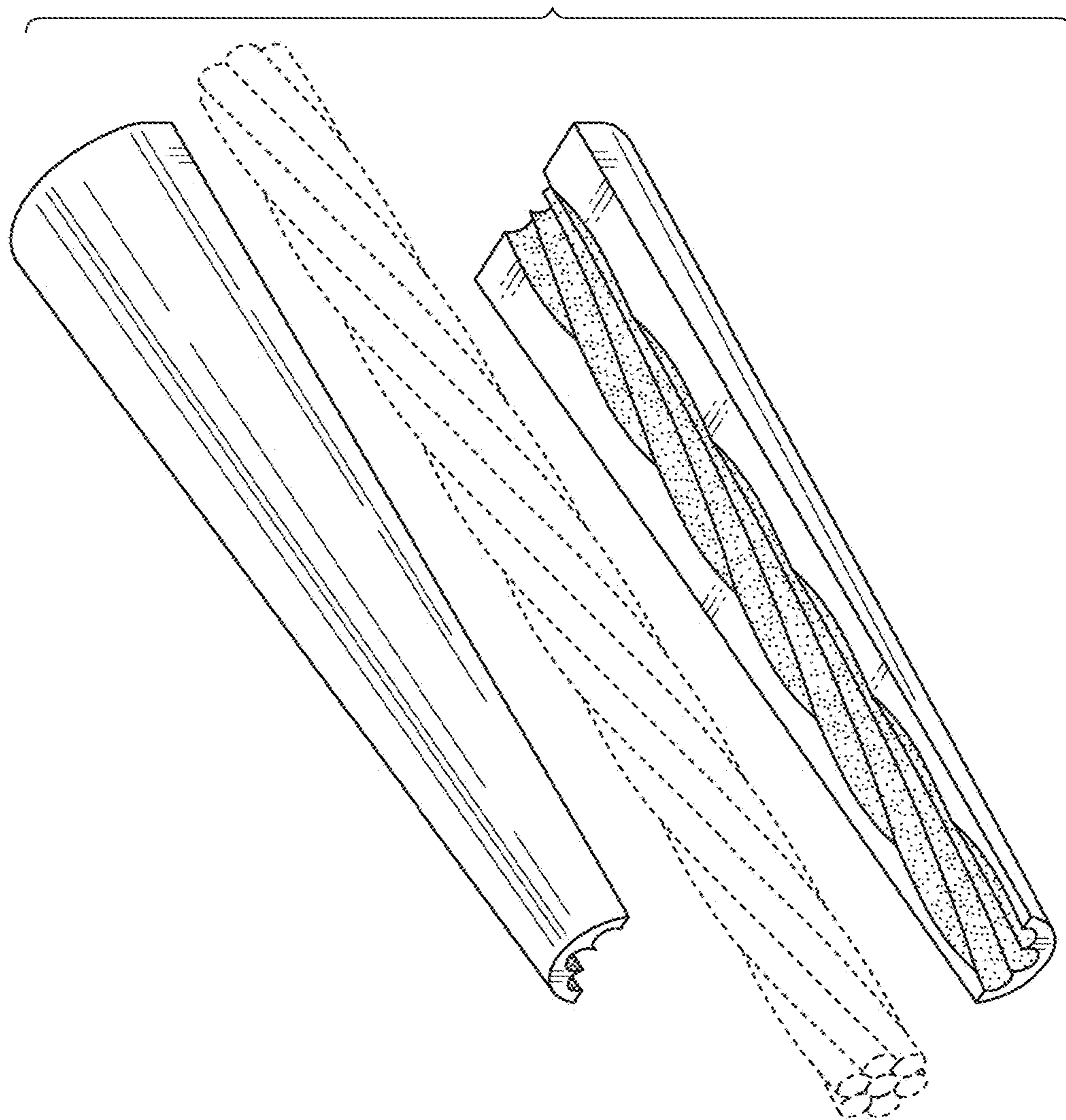


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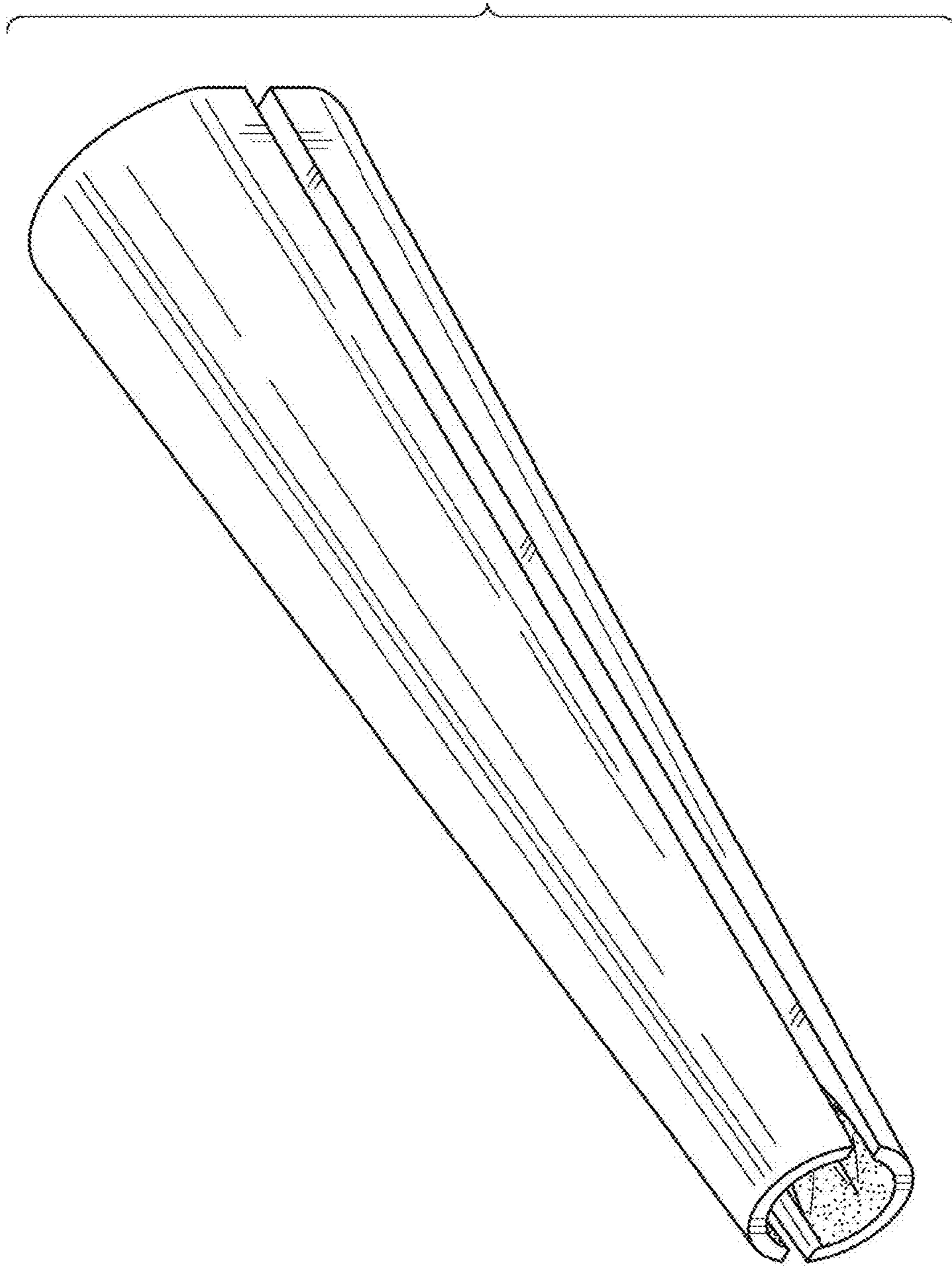


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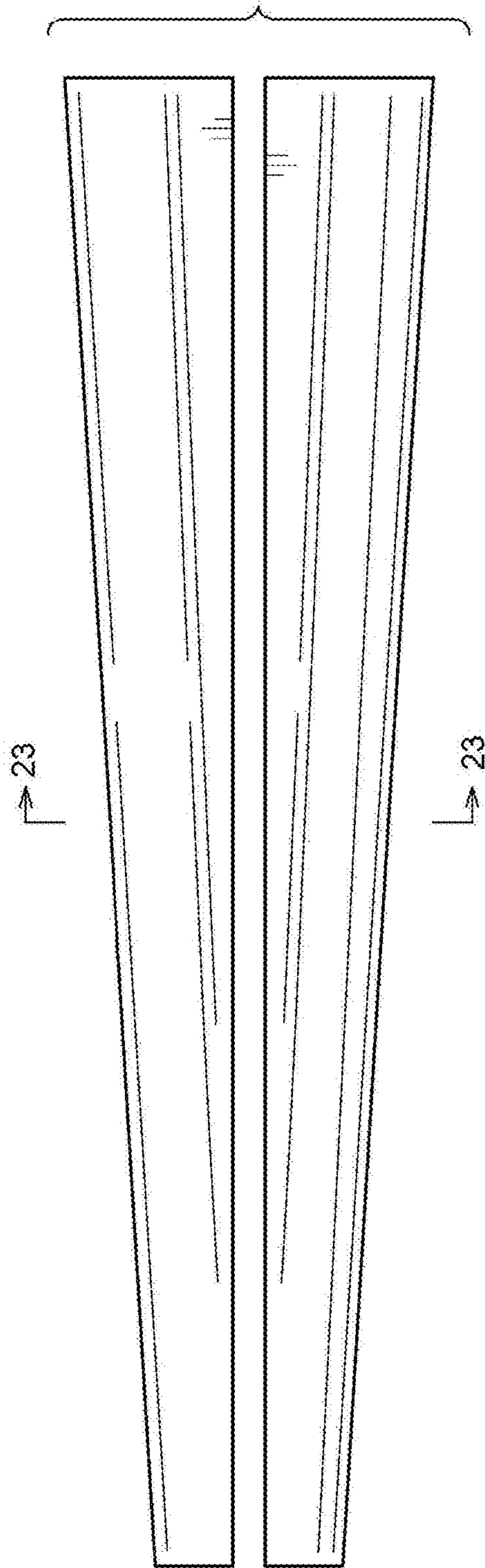


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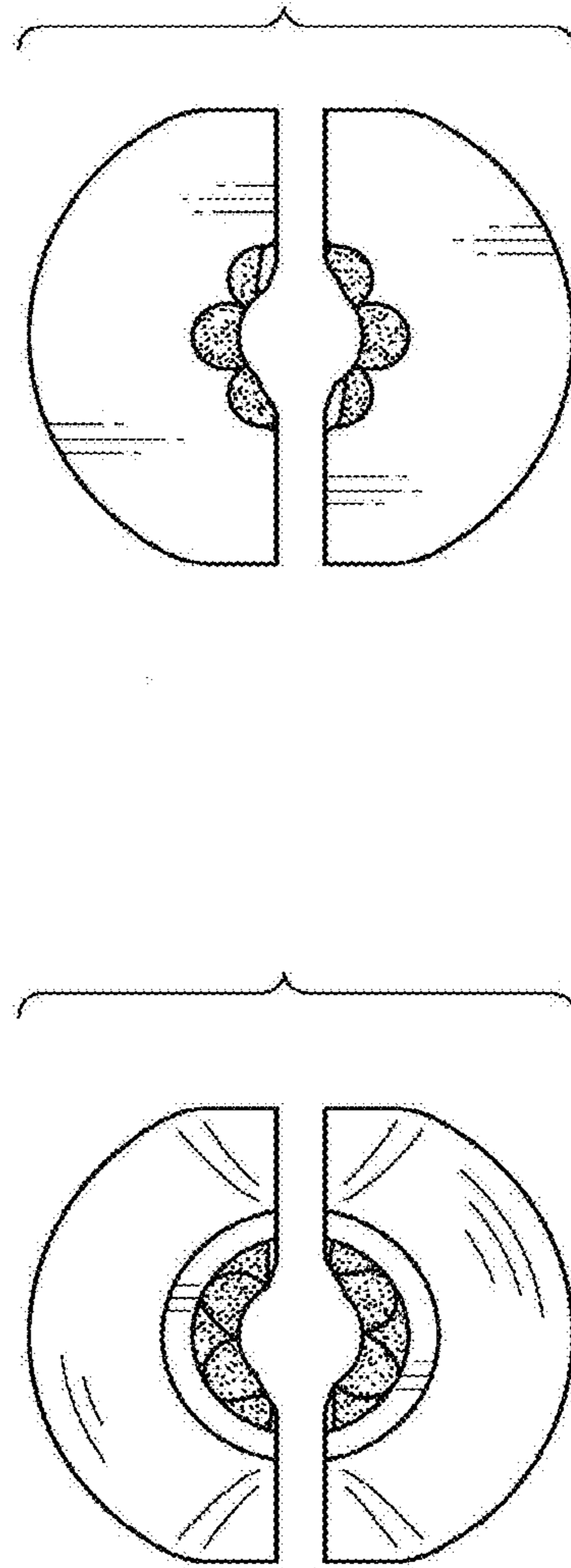


Fig. 15

Fig. 16

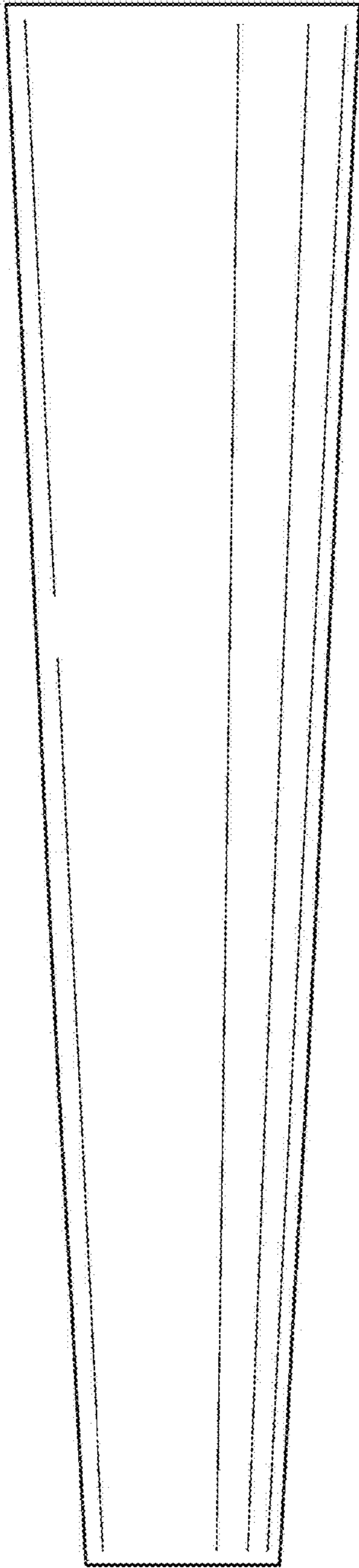


Fig. 17

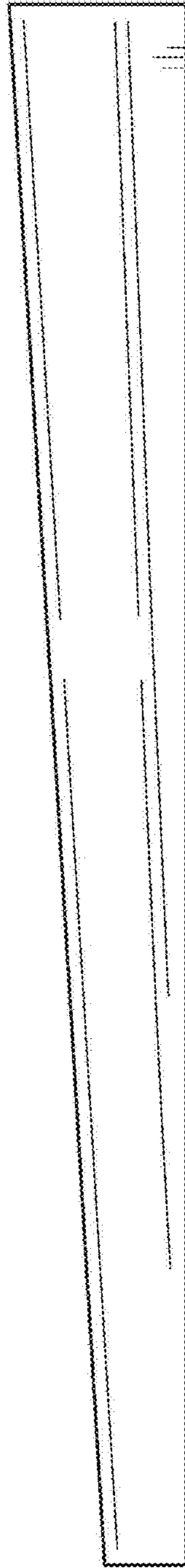


Fig. 18



Fig. 19



Fig. 20

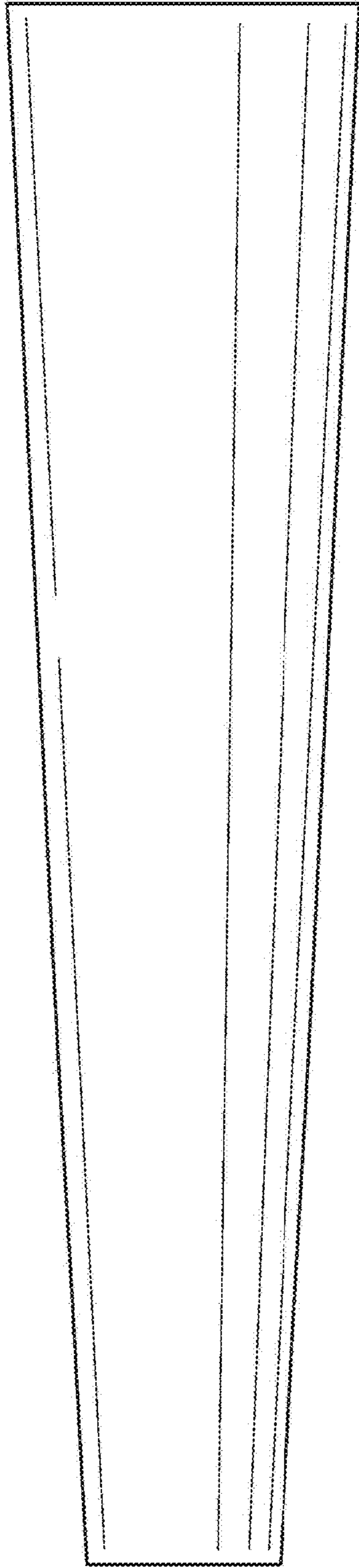


Fig. 21

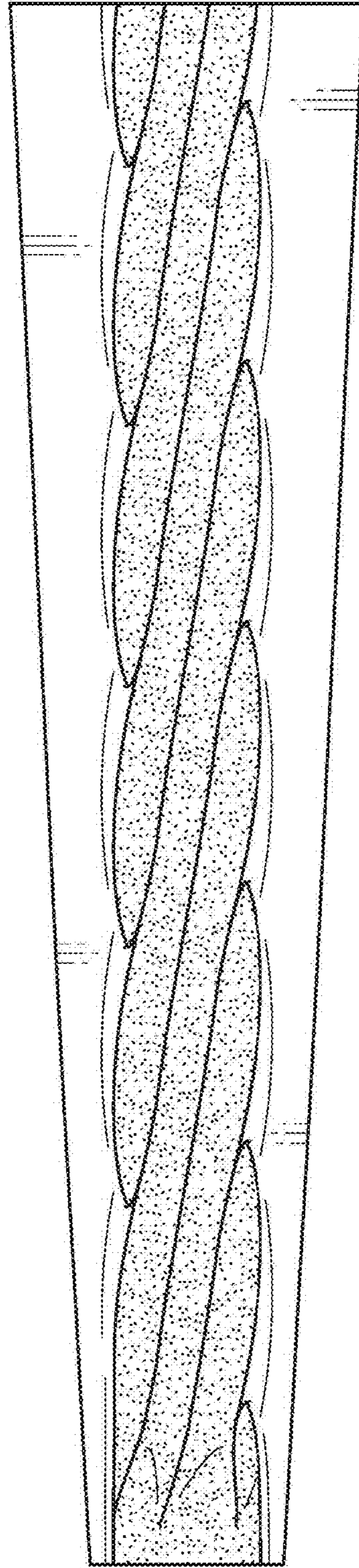


Fig. 22

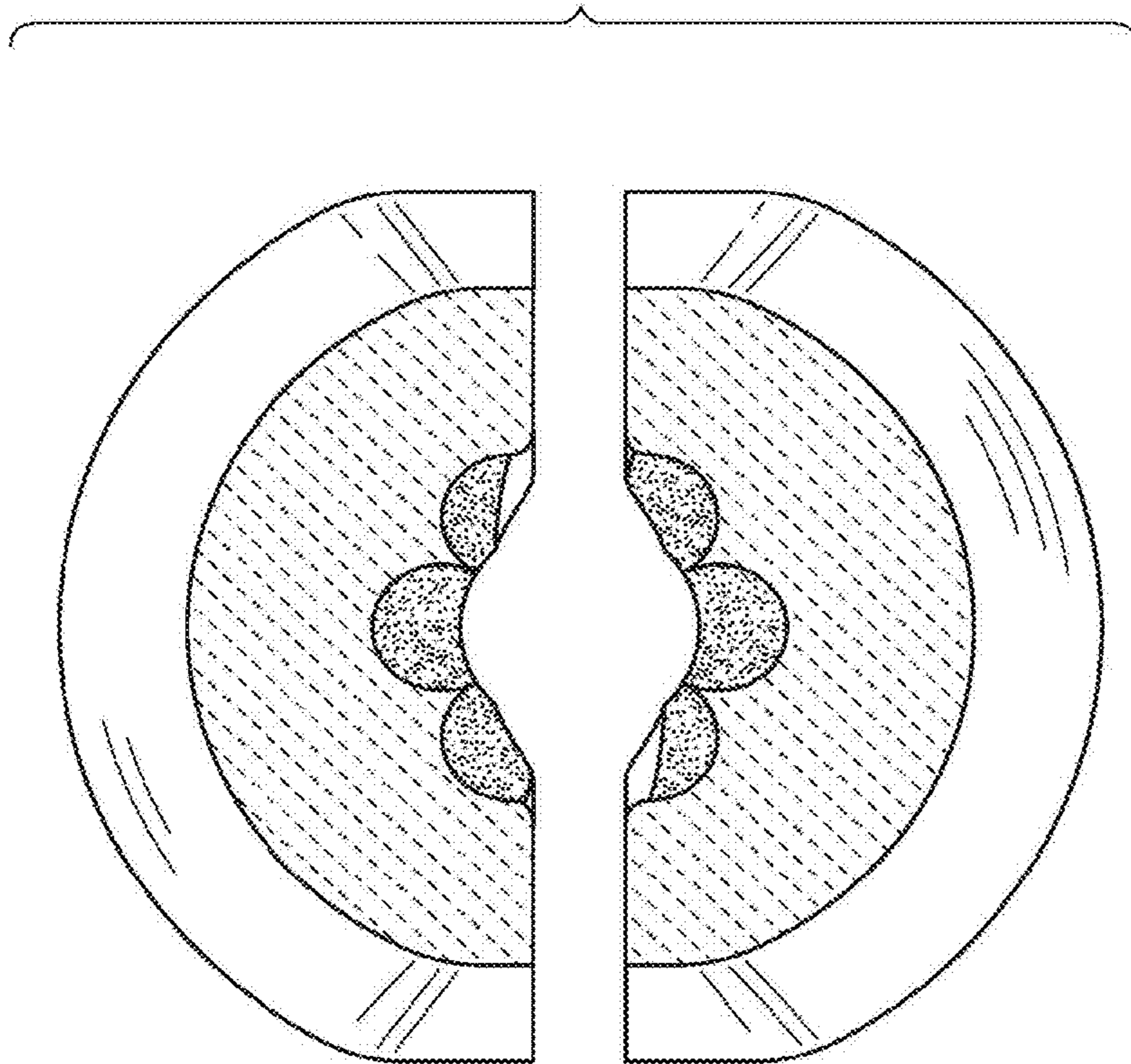


Fig. 23

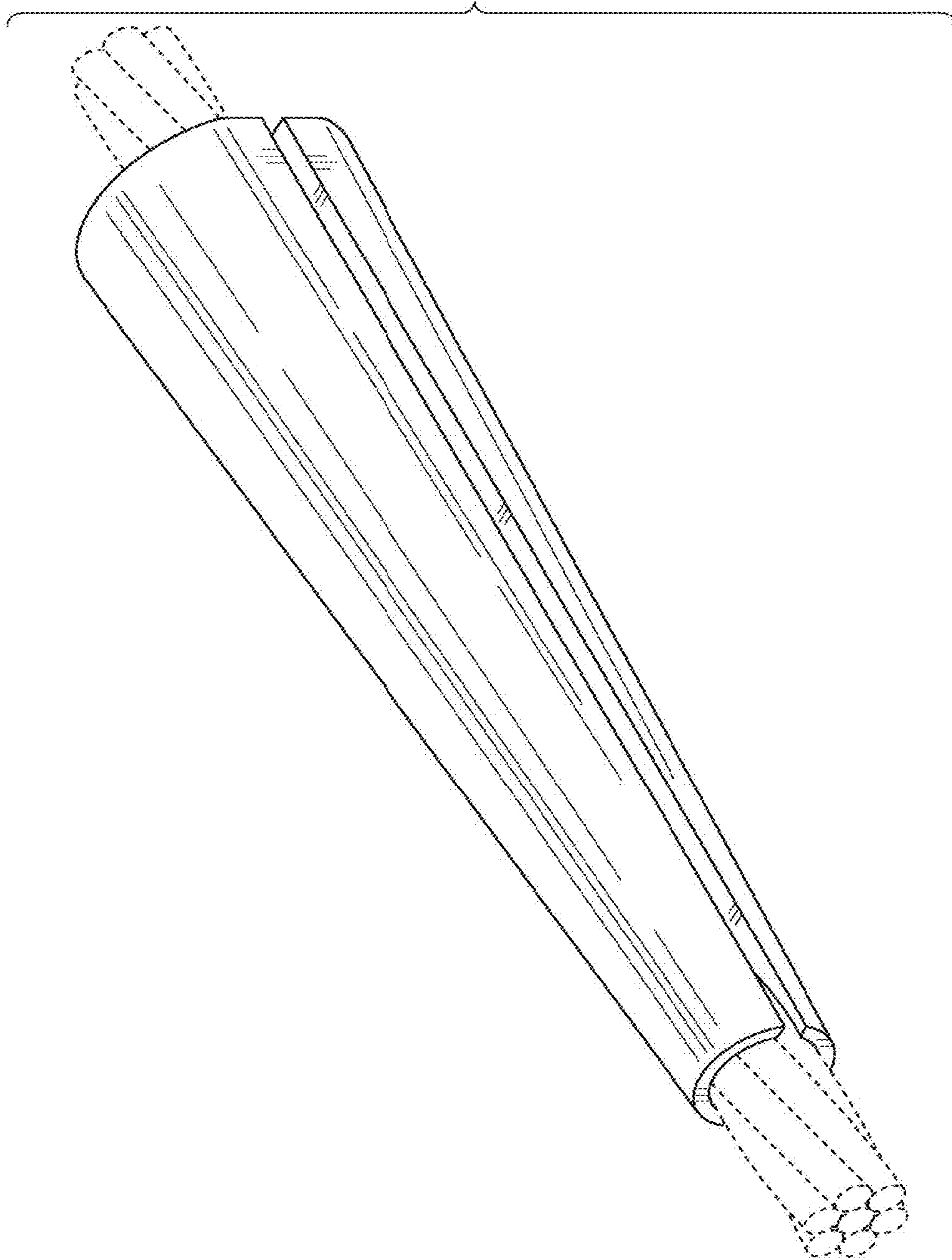


Fig. 24

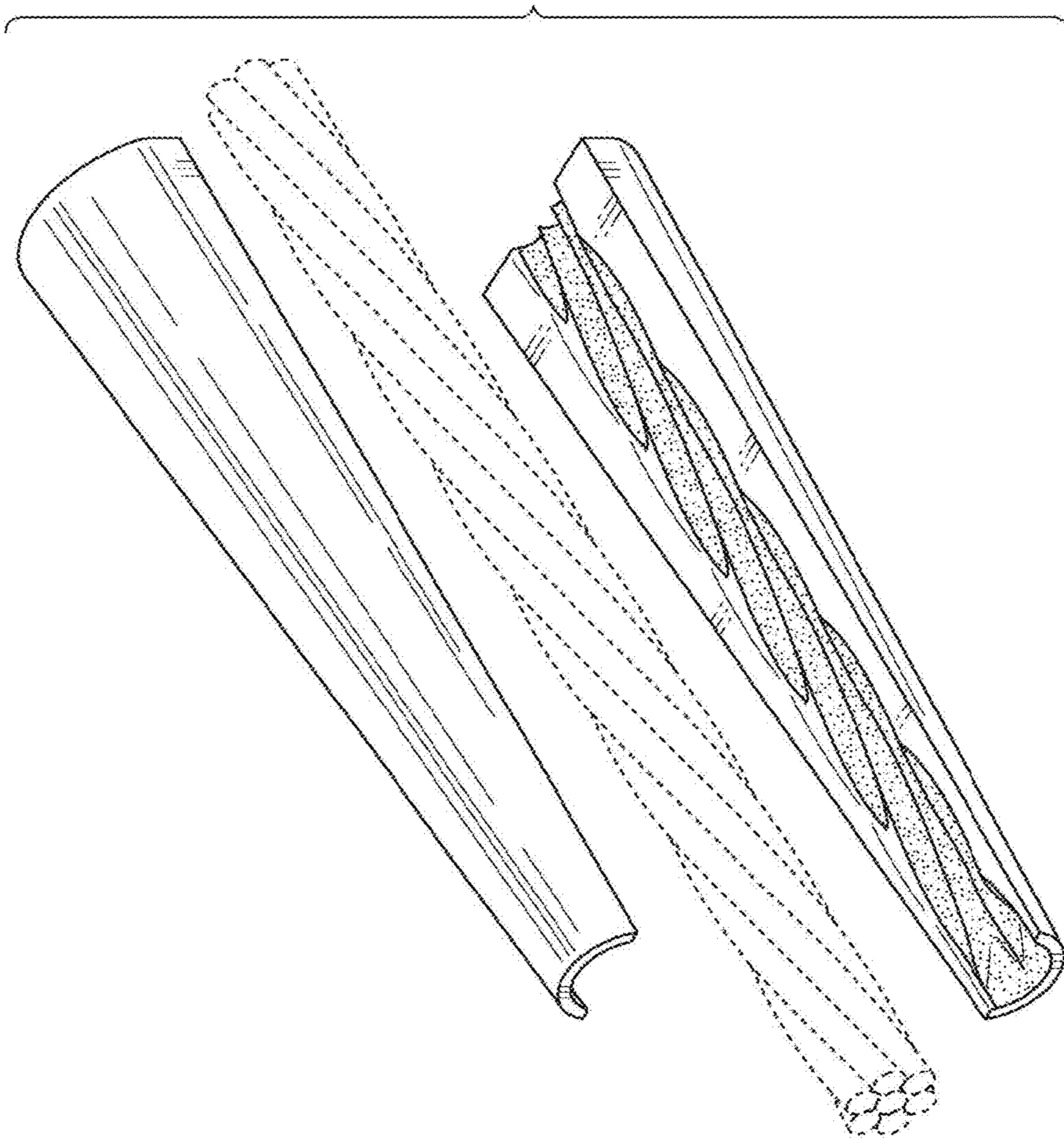


Fig. 25