



US00D900310S

(12) **United States Design Patent** (10) **Patent No.:** **US D900,310 S**
Carper et al. (45) **Date of Patent:** **** Oct. 27, 2020**

(54) **SYRINGE PLUNGER SEAL AND BARREL**

(74) *Attorney, Agent, or Firm* — Goodhue, Coleman & Owens, P.C.

(71) Applicant: **Treble Innovations, LLC**, Spanish Fork, UT (US)

(57) **CLAIM**

(72) Inventors: **Scott Carper**, Freeburg, PA (US);
Brian Dean Owens, Plano, TX (US);
Roland Clifford Park, Springville, UT (US)

The ornamental design for syringe plunger seal and barrel, as shown and described.

DESCRIPTION

(73) Assignee: **TREBLE INNOVATIONS, LLC**, Spanish Fork, UT (US)

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

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

FIG. 1 is a perspective view of a plunger seal and barrel showing a new design;

(21) Appl. No.: **29/712,743**

FIG. 2 is a front view thereof;

(22) Filed: **Nov. 11, 2019**

FIG. 3 is a back view thereof;

Related U.S. Application Data

(62) Division of application No. 29/634,995, filed on Jan. 26, 2018.

FIG. 4 is a left side view thereof;

(51) **LOC (12) Cl.** **24-02**

FIG. 5 is a right side view thereof;

(52) **U.S. Cl.**
USPC **D24/112**

FIG. 6 is a perspective view of a plunger seal and barrel showing another new design;

(58) **Field of Classification Search**
USPC D24/112–114, 108, 133, 130, 127, 186;
606/181, 185; 604/264, 272, 187, 181,
604/184, 227

FIG. 7 is a front view thereof;

(Continued)

FIG. 8 is a back view thereof;

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,242,405 A 9/1993 Howe
D383,205 S * 9/1997 Pagay D24/112
(Continued)

FIG. 9 is a left side view thereof;

FIG. 10 is a right side view thereof;

FIG. 11 is a perspective view of a plunger seal and barrel showing another new design;

FIG. 12 is a front view thereof;

FIG. 13 is a back view thereof;

FIG. 14 is a left side view thereof;

FIG. 15 is a right side view thereof;

FIG. 16 is a perspective view of a plunger seal and barrel showing another new design;

FIG. 17 is a front view thereof;

FIG. 18 is a back view thereof;

FIG. 19 is a left side view thereof;

FIG. 20 is a right side view thereof;

FIG. 21 is a perspective view of a plunger seal and barrel showing another new design;

FIG. 22 is a front view thereof;

FIG. 23 is a back view thereof;

FIG. 24 is a left side view thereof;

FIG. 25 is a right side view thereof;

(Continued)

FOREIGN PATENT DOCUMENTS

WO 2007014428 A1 2/2007

Primary Examiner — David G Muller

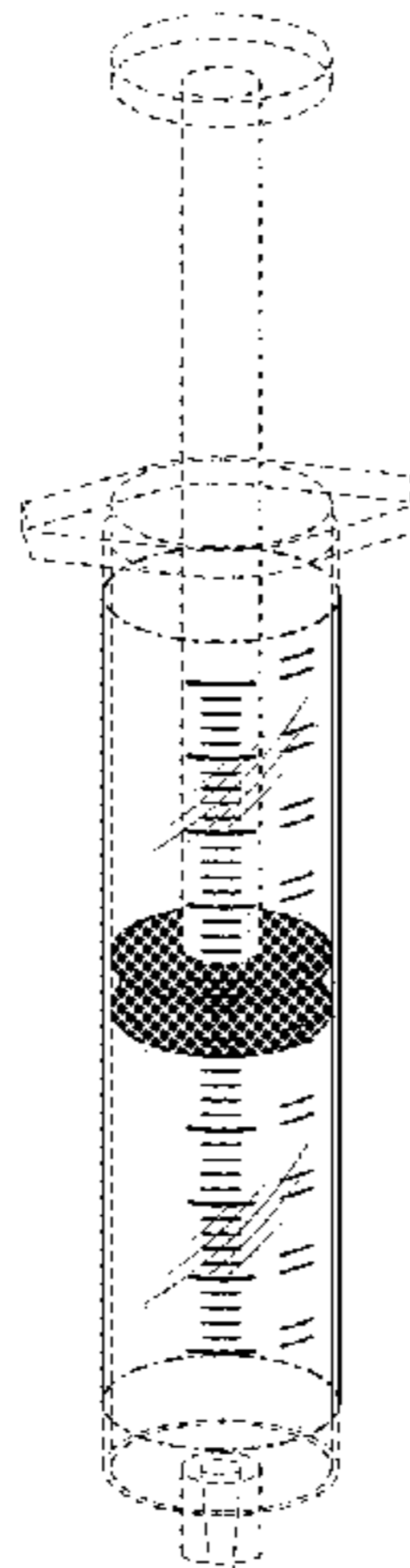


FIG. 26 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 27 is a front view thereof;
 FIG. 28 is a back view thereof;
 FIG. 29 is a left side view thereof;
 FIG. 30 is a right side view thereof;
 FIG. 31 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 32 is a front view thereof;
 FIG. 33 is a back view thereof;
 FIG. 34 is a left side view thereof;
 FIG. 35 is a right side view thereof;
 FIG. 36 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 37 is a front view thereof;
 FIG. 38 is a back view thereof;
 FIG. 39 is a left side view thereof;
 FIG. 40 is a right side view thereof;
 FIG. 41 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 42 is a front view thereof;
 FIG. 43 is a back view thereof;
 FIG. 44 is a left side view thereof;
 FIG. 45 is a right side view thereof;
 FIG. 46 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 47 is a front view thereof;
 FIG. 48 is a back view thereof;
 FIG. 49 is a left side view thereof;
 FIG. 50 is a right side view thereof;
 FIG. 51 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 52 is a front view thereof;
 FIG. 53 is a back view thereof;
 FIG. 54 is a left side view thereof;
 FIG. 55 is a right side view thereof;
 FIG. 56 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 57 is a front view thereof;
 FIG. 58 is a back view thereof;
 FIG. 59 is a left side view thereof;
 FIG. 60 is a right side view thereof;

FIG. 61 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 62 is a front view thereof;
 FIG. 63 is a back view thereof;
 FIG. 64 is a left side view thereof;
 FIG. 65 is a right side view thereof;
 FIG. 66 is a perspective view of a plunger seal and barrel showing another new design;
 FIG. 67 is a front view thereof;
 FIG. 68 is a back view thereof;
 FIG. 69 is a left side view thereof; and,
 FIG. 70 is a right side view thereof.

The broken lines in the Figures show portions of the syringe plunger seal and barrel and environment which form no part of the claimed design.

**1 Claim, 14 Drawing Sheets
 (14 of 14 Drawing Sheet(s) Filed in Color)**

(58) **Field of Classification Search**

CPC A61M 5/178; A61M 3/00; A61M 5/20;
 A61M 5/31; A61M 5/3146; A61M
 5/3129; A61M 5/3148; A61M 5/315
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D447,797	S *	9/2001	Odell	D24/112
6,290,678	B1	9/2001	Aydelotte et al.	
6,936,034	B2 *	8/2005	Watkins	A61M 5/3243 359/441
D578,210	S *	10/2008	Muta	D24/114
D610,253	S *	2/2010	Kawamura	D24/114
D660,958	S *	5/2012	McLoughlin	D24/113
D667,950	S *	9/2012	Hyun	D24/130
D674,086	S *	1/2013	Khalaj	D24/114
D729,931	S *	5/2015	Takeuchi	D24/114
D739,524	S *	9/2015	Zemel	D24/114
D743,025	S *	11/2015	Berler	D24/114
9,352,096	B2 *	5/2016	Felsovalyi	A61M 5/3137
D780,913	S *	3/2017	Murasawa	D24/130
2005/0080384	A1	4/2005	Green	

* cited by examiner

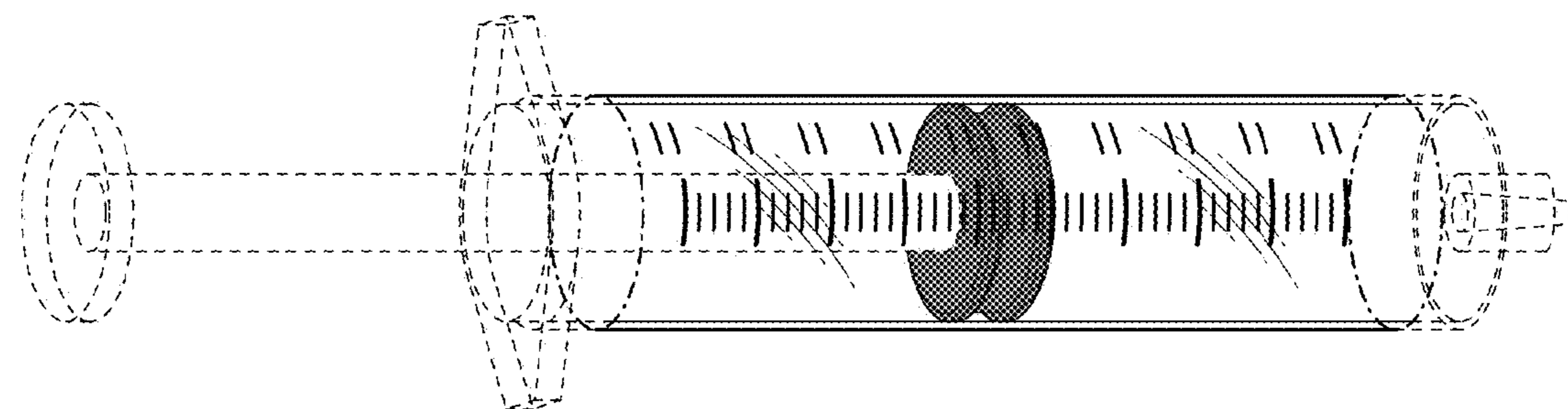


FIG. 1

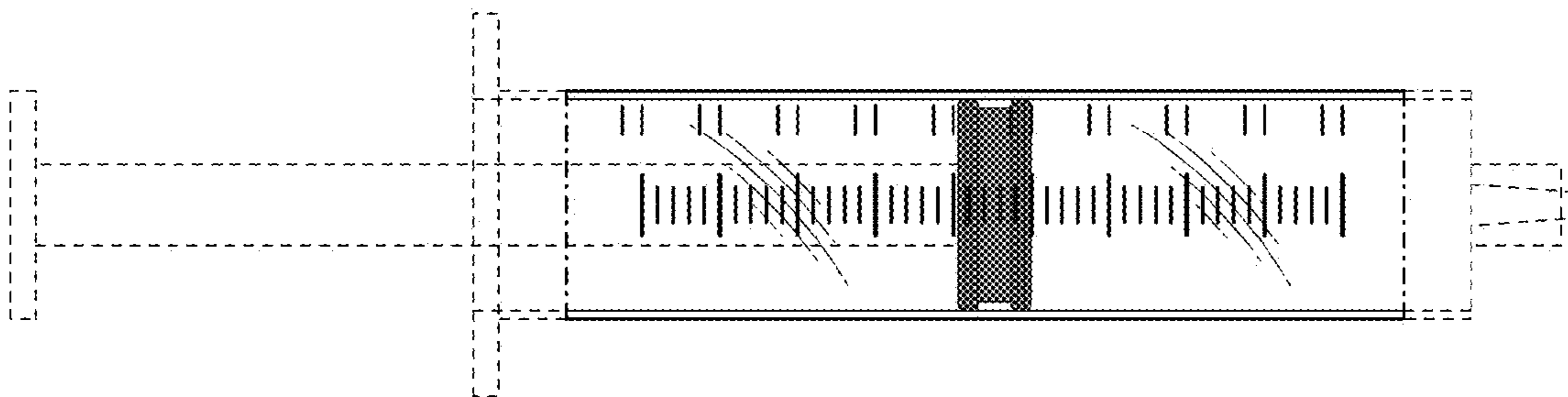


FIG. 2

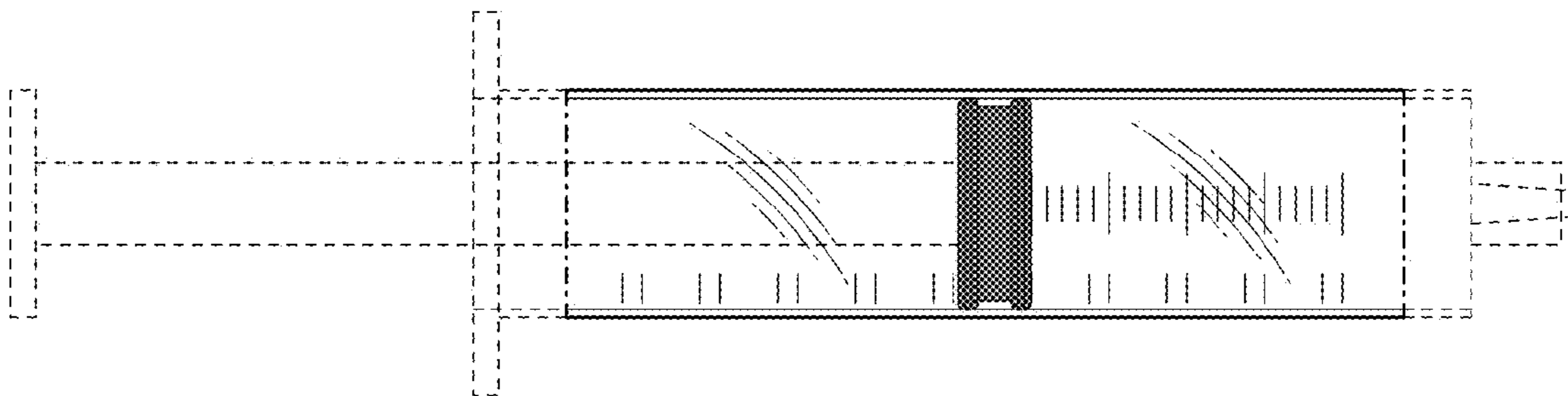


FIG. 3

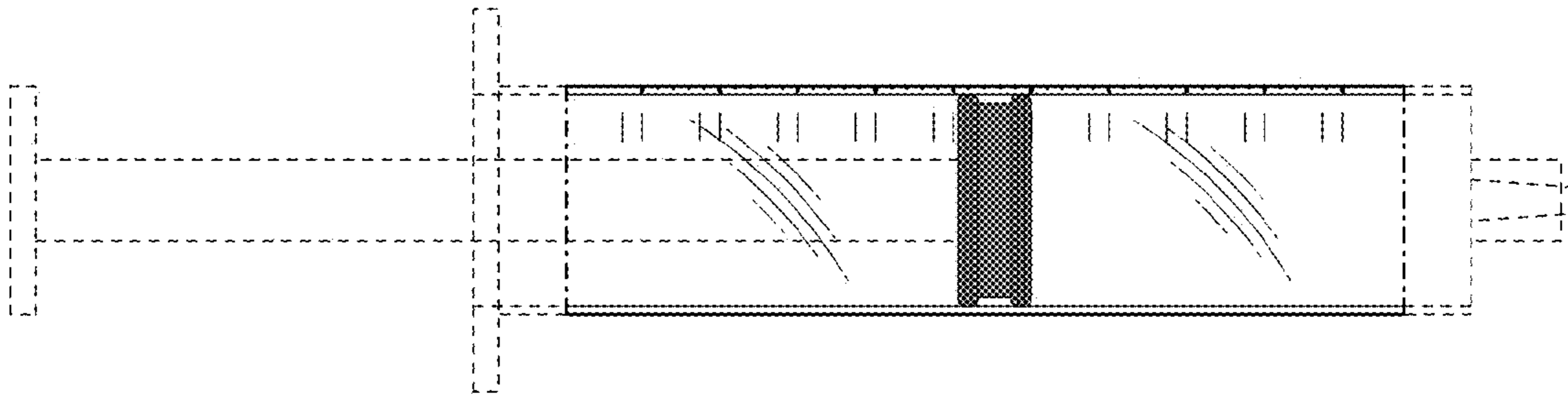


FIG. 4

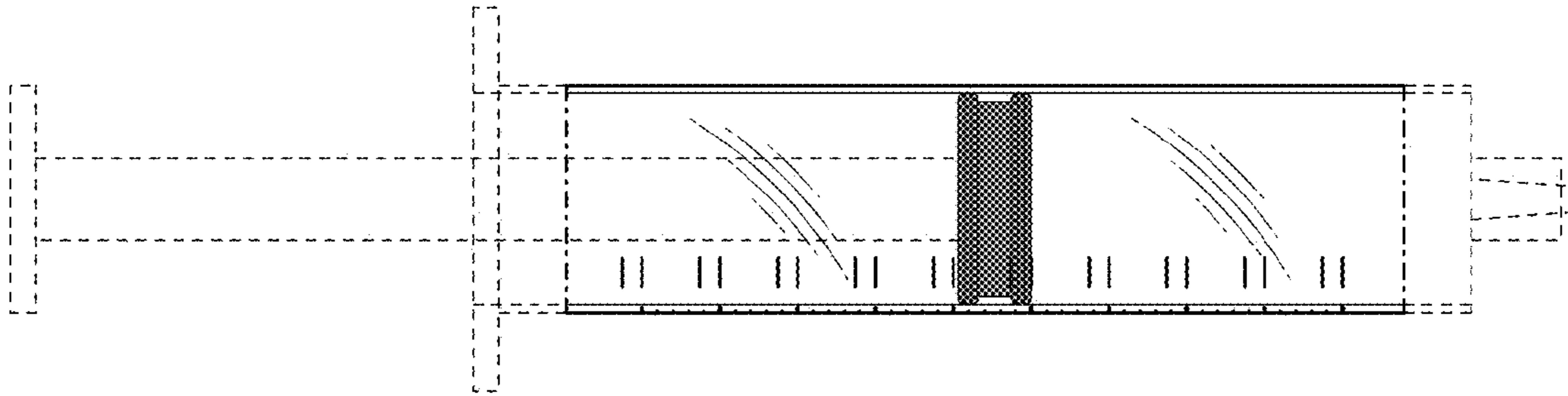


FIG. 5

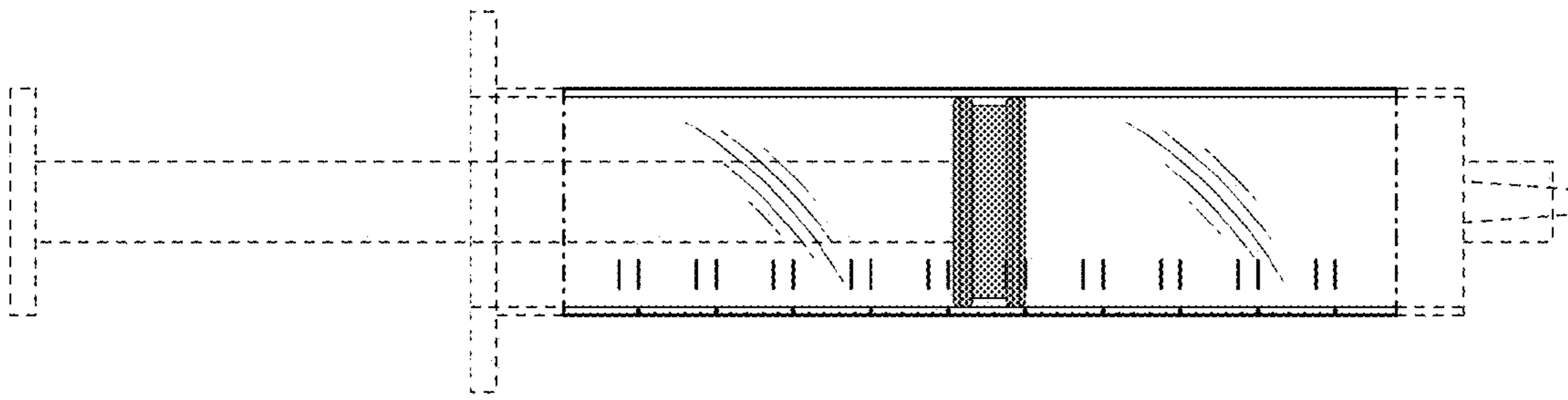


FIG. 10

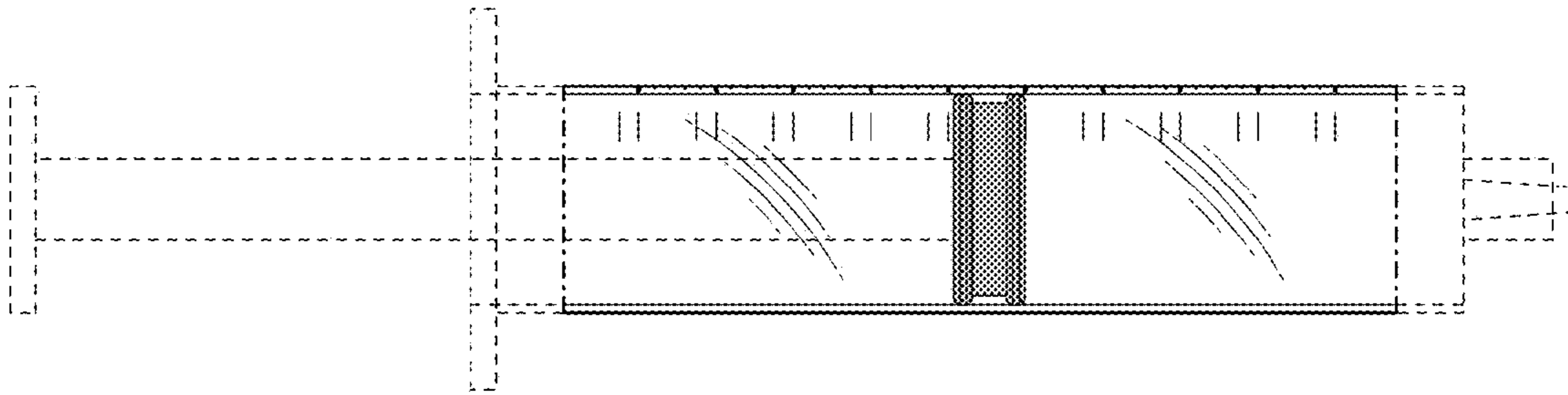


FIG. 9

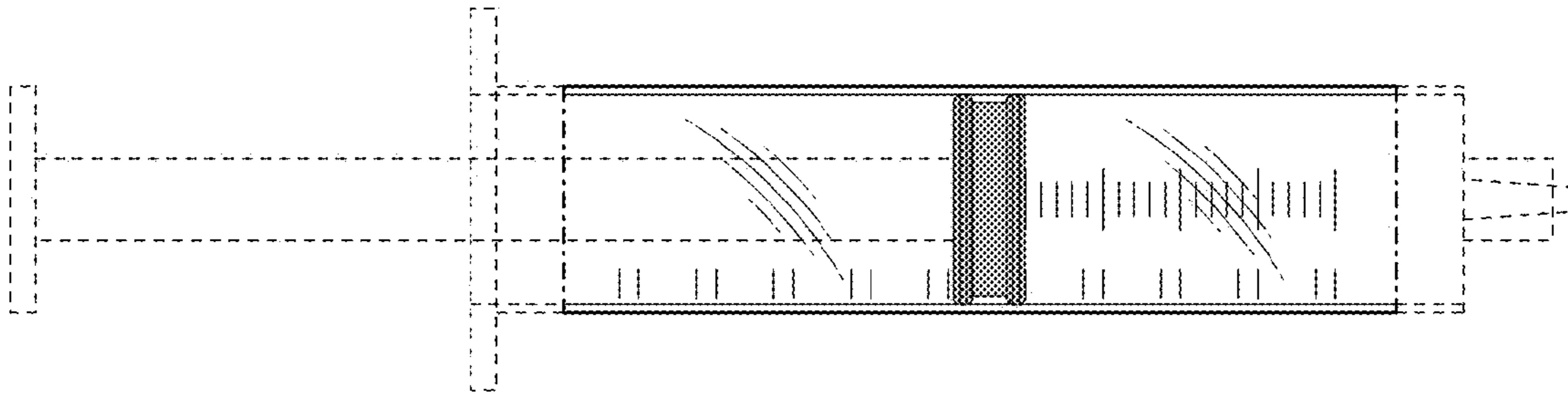


FIG. 8

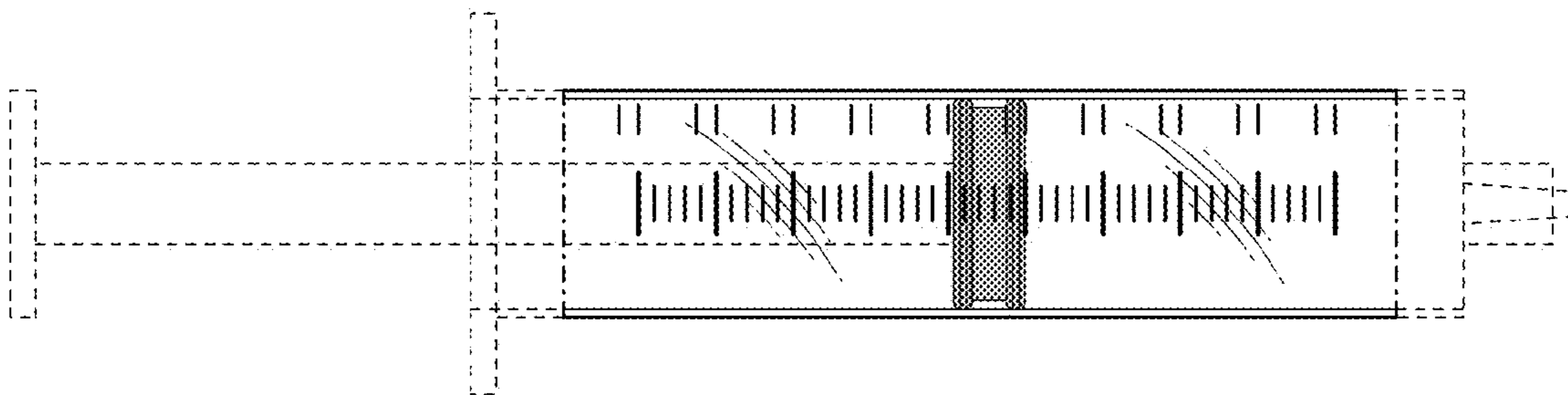


FIG. 7

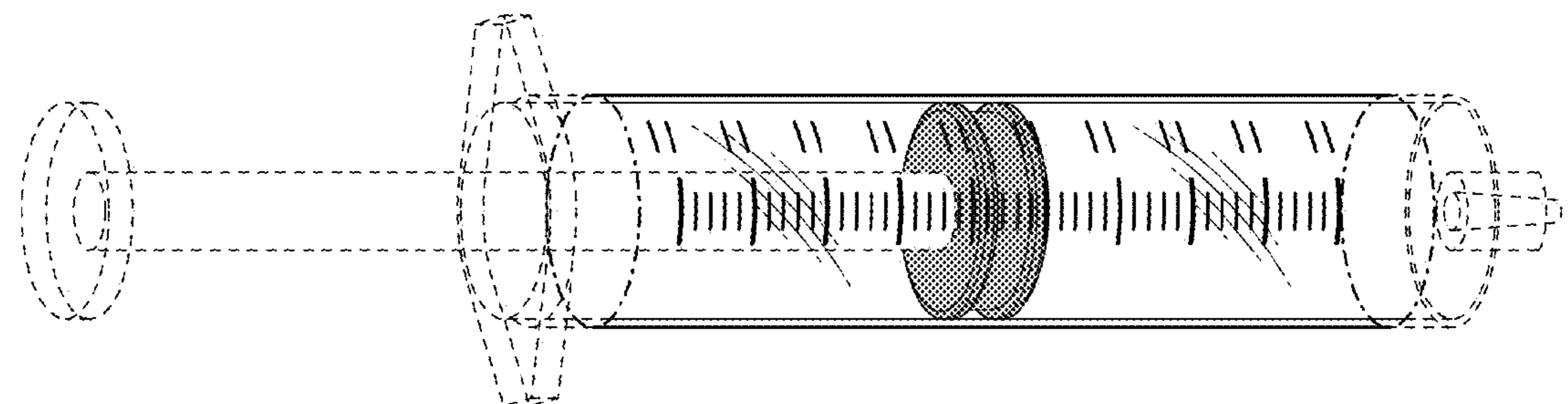


FIG. 6

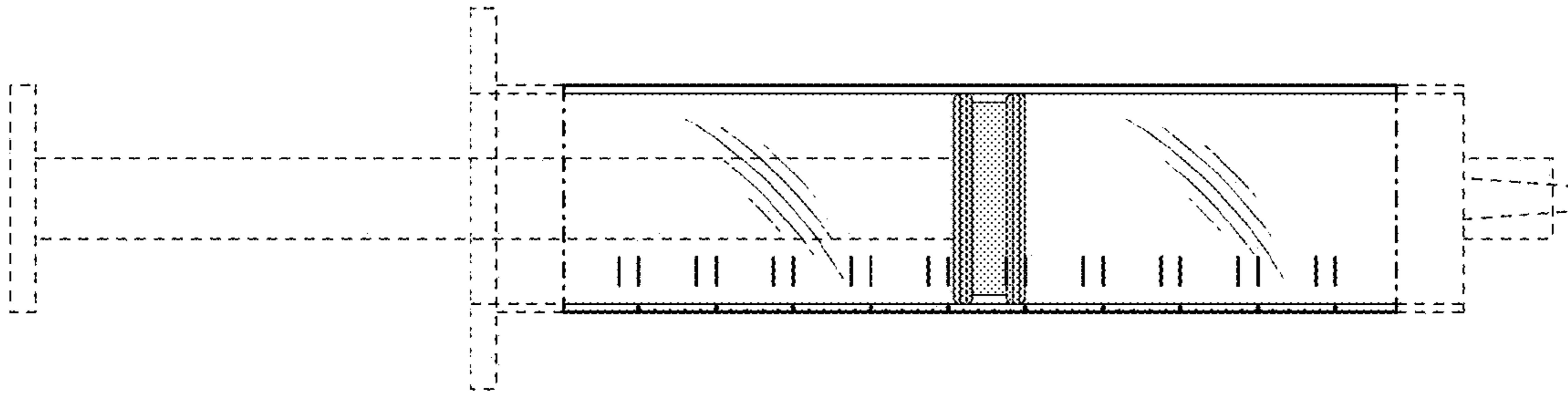


FIG. 15

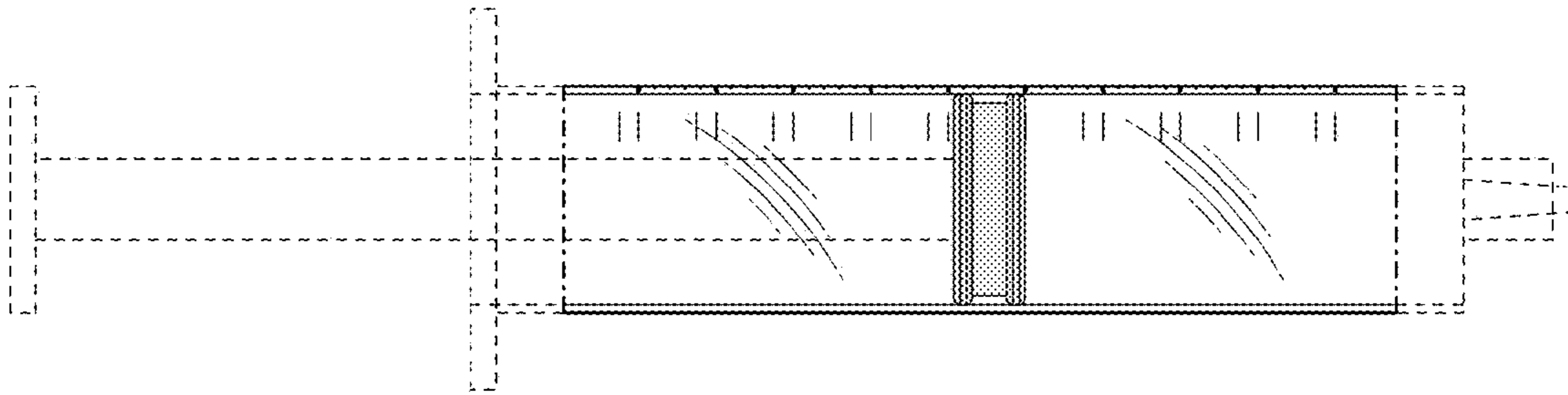


FIG. 14

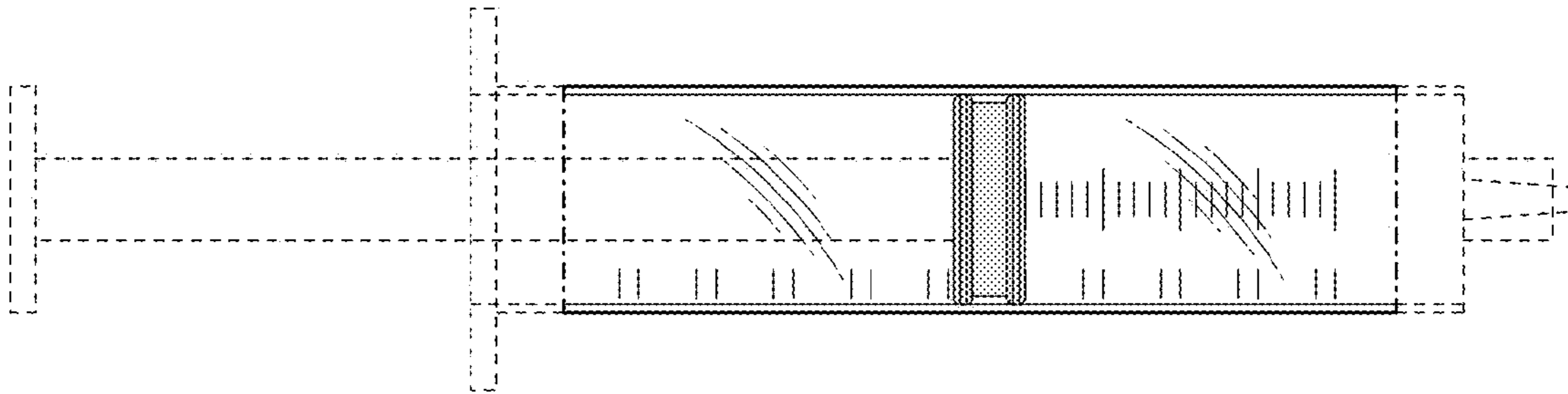


FIG. 13

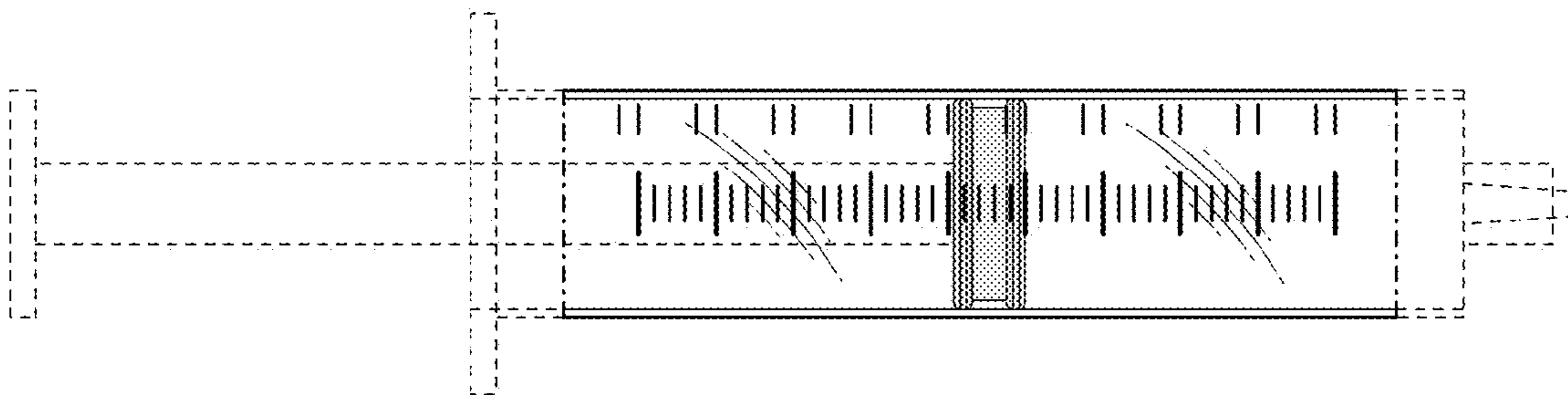


FIG. 12

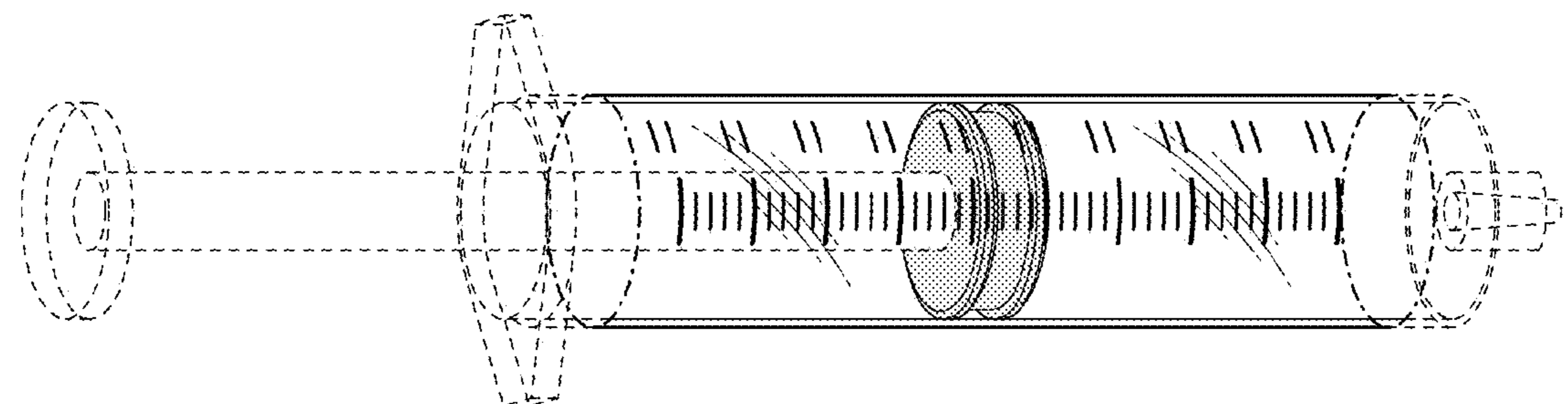


FIG. 11

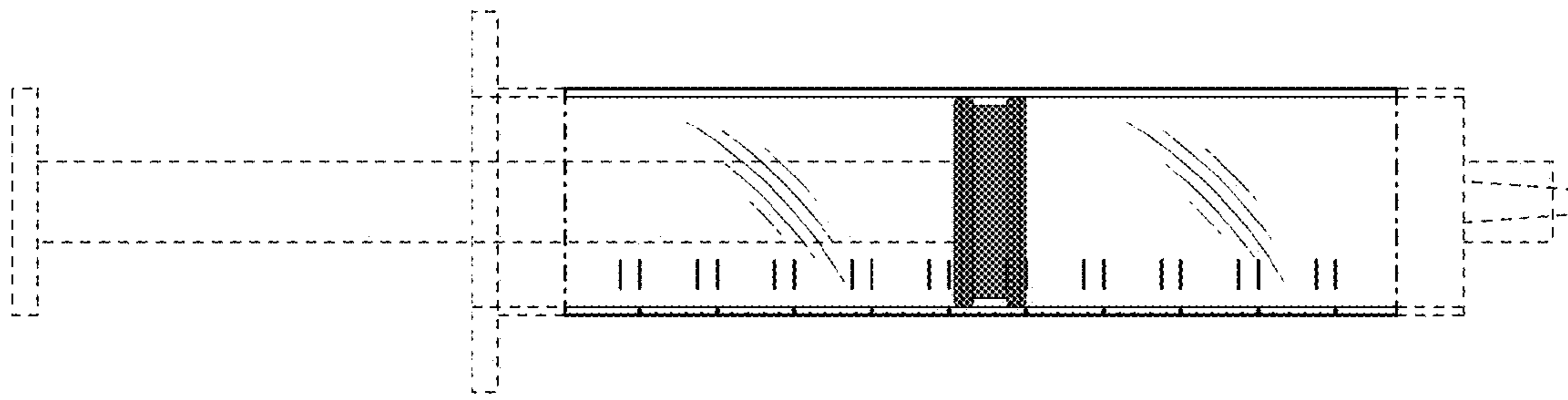


FIG. 20

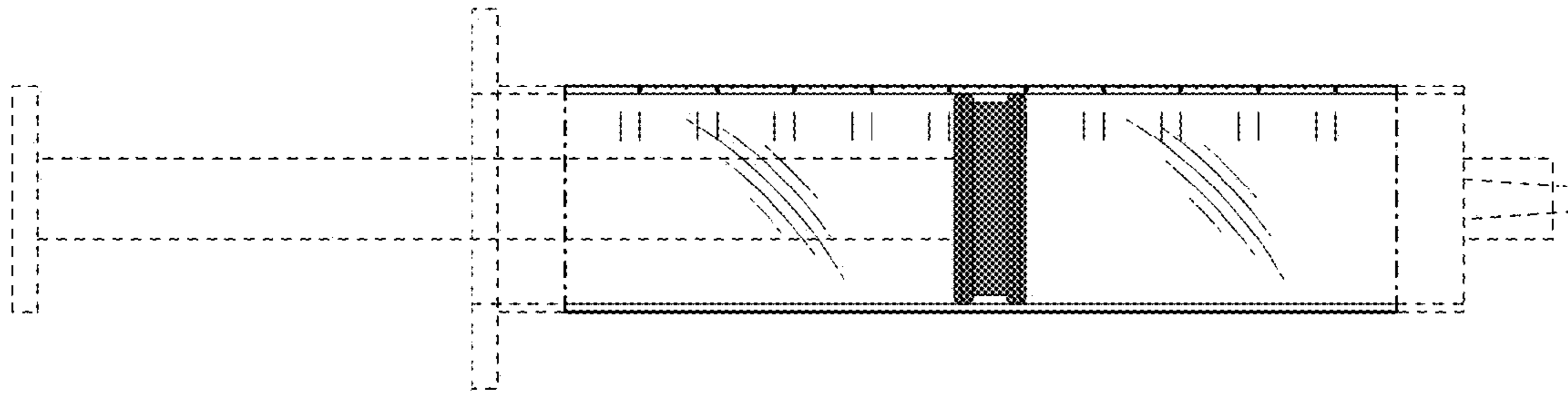


FIG. 19

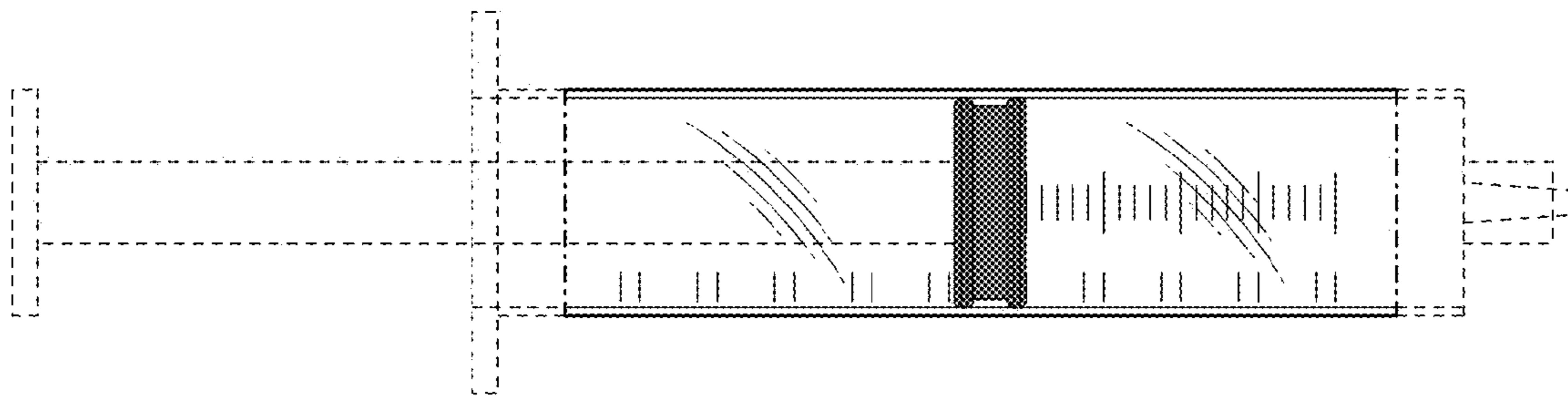


FIG. 18

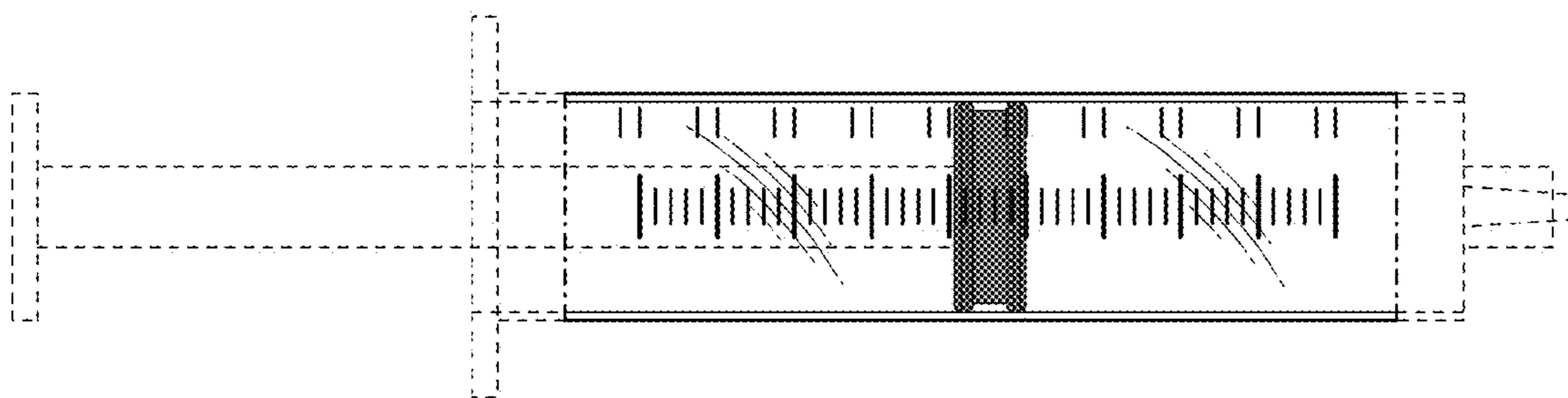


FIG. 17

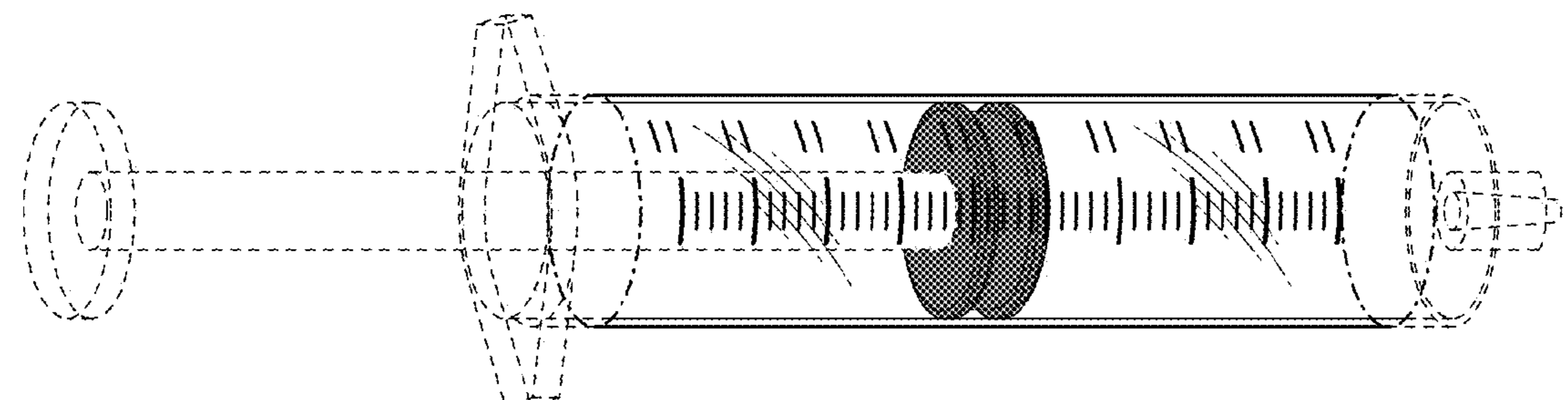


FIG. 16

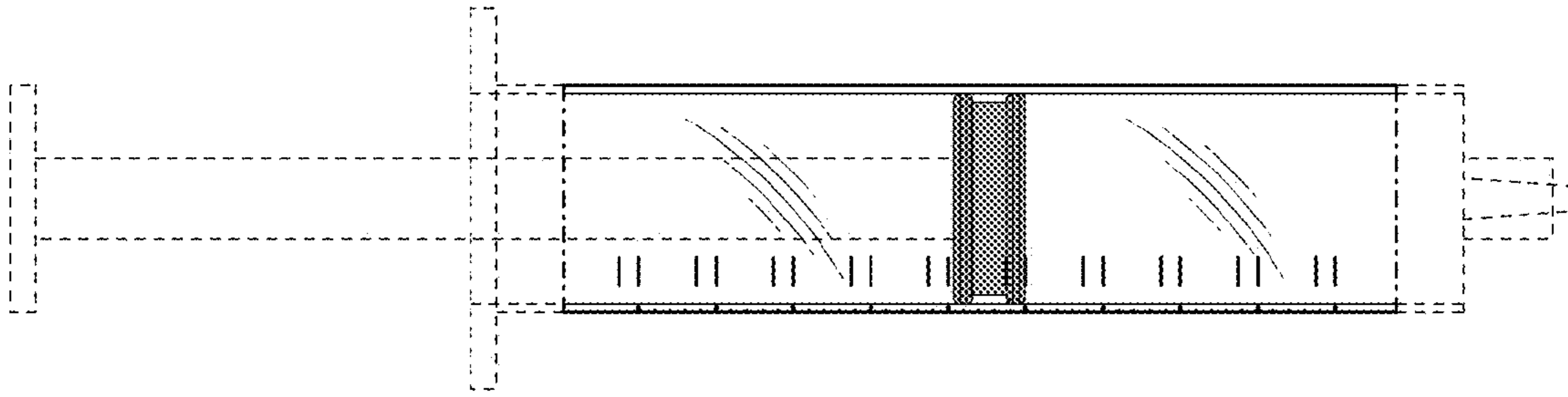


FIG. 25

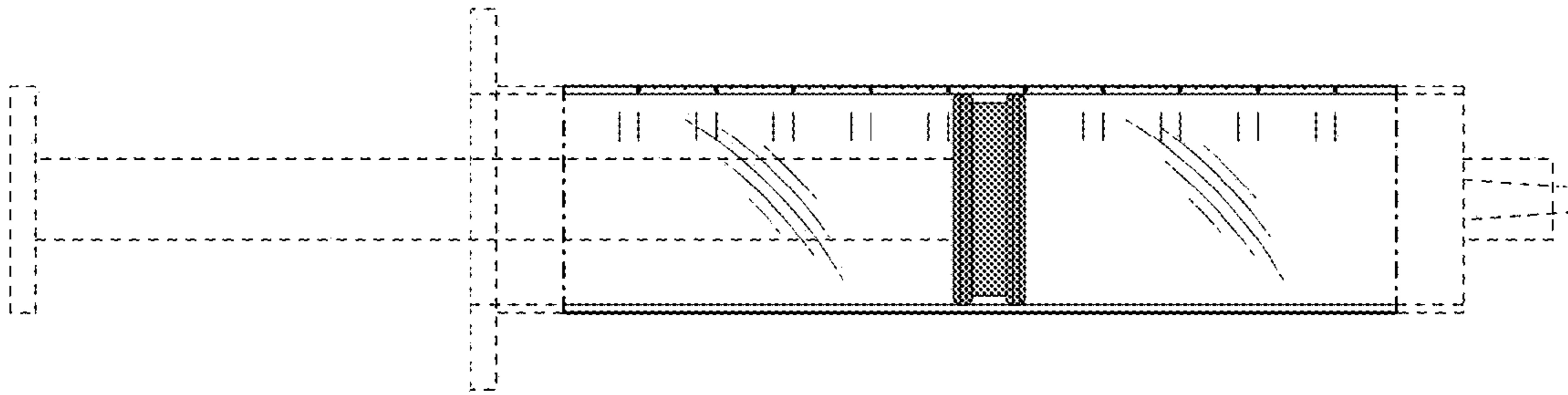


FIG. 24

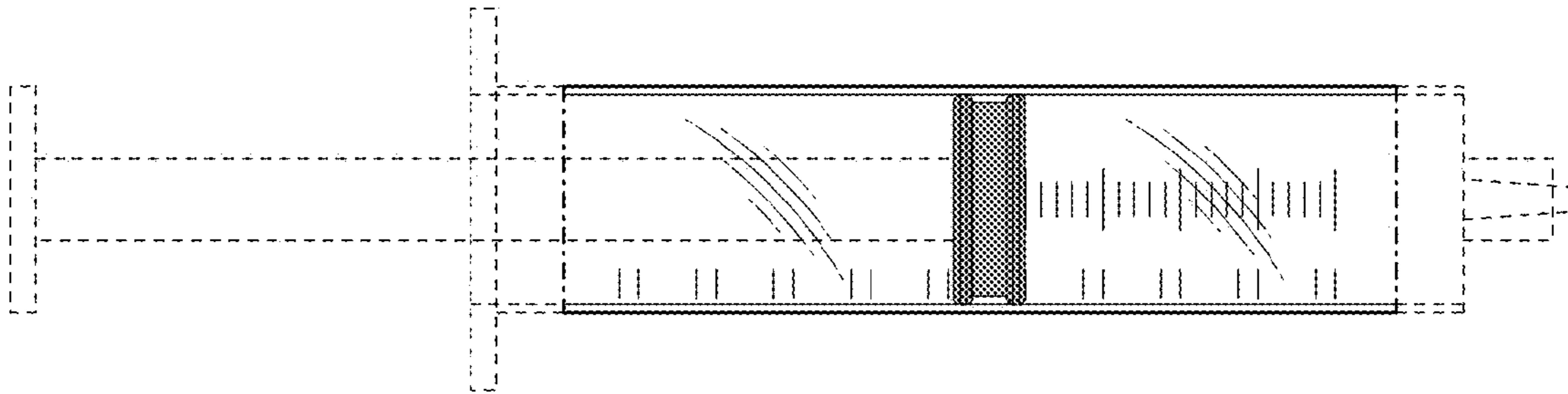


FIG. 23

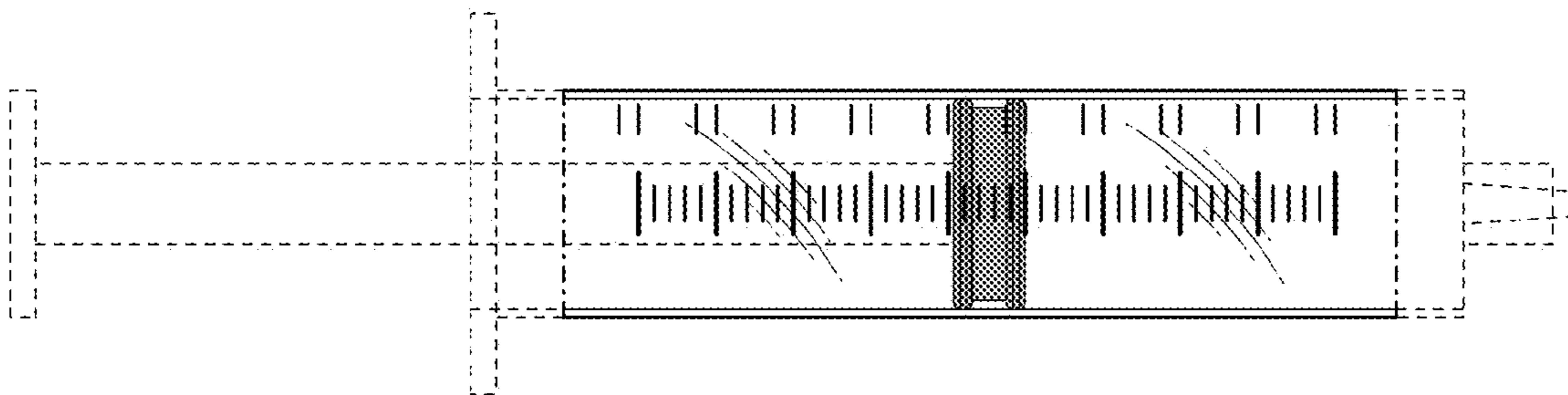


FIG. 22

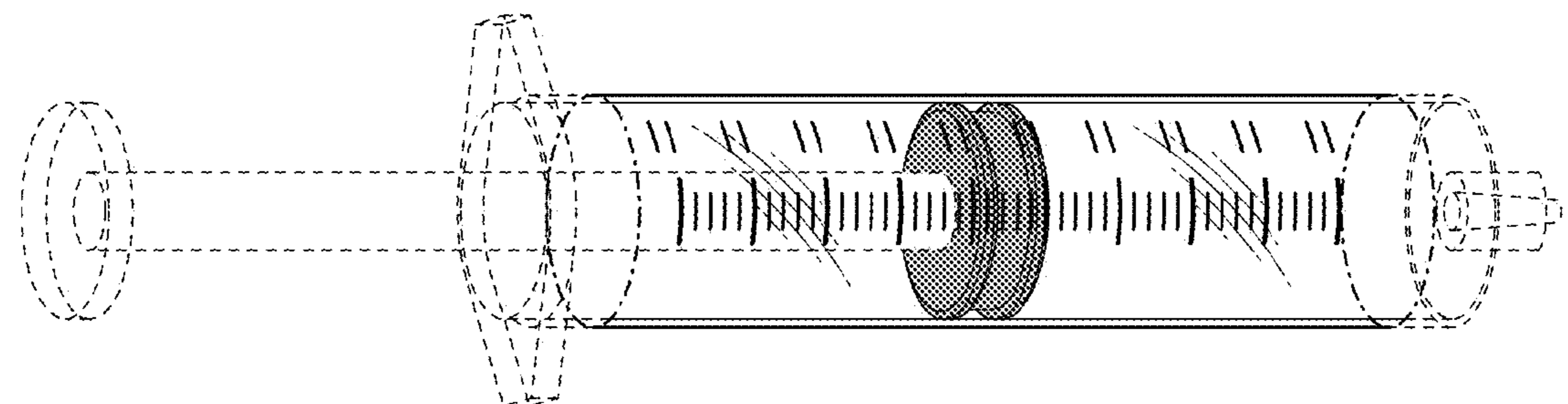


FIG. 21

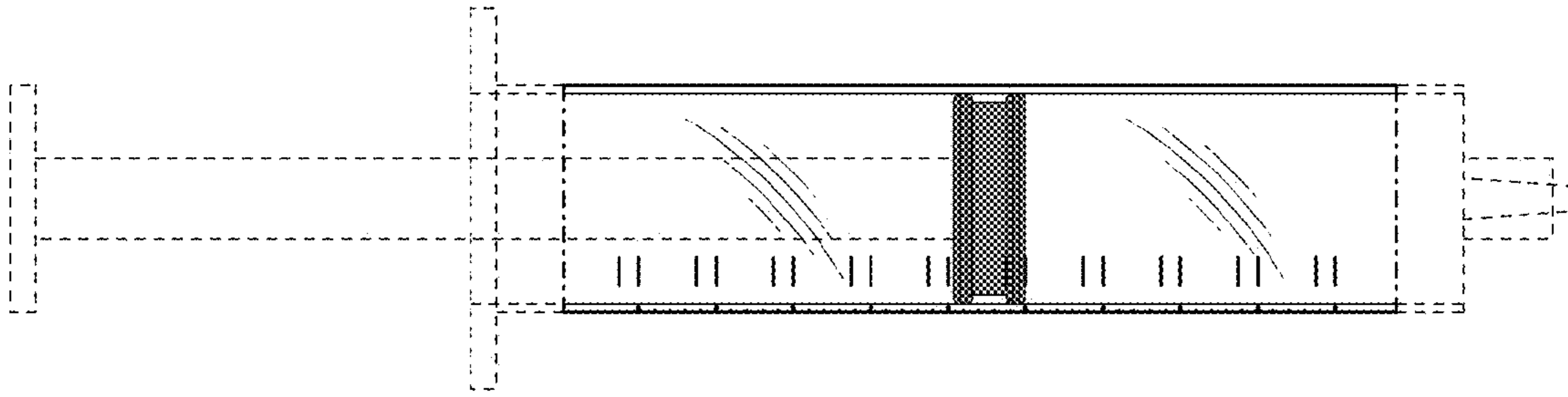


FIG. 30

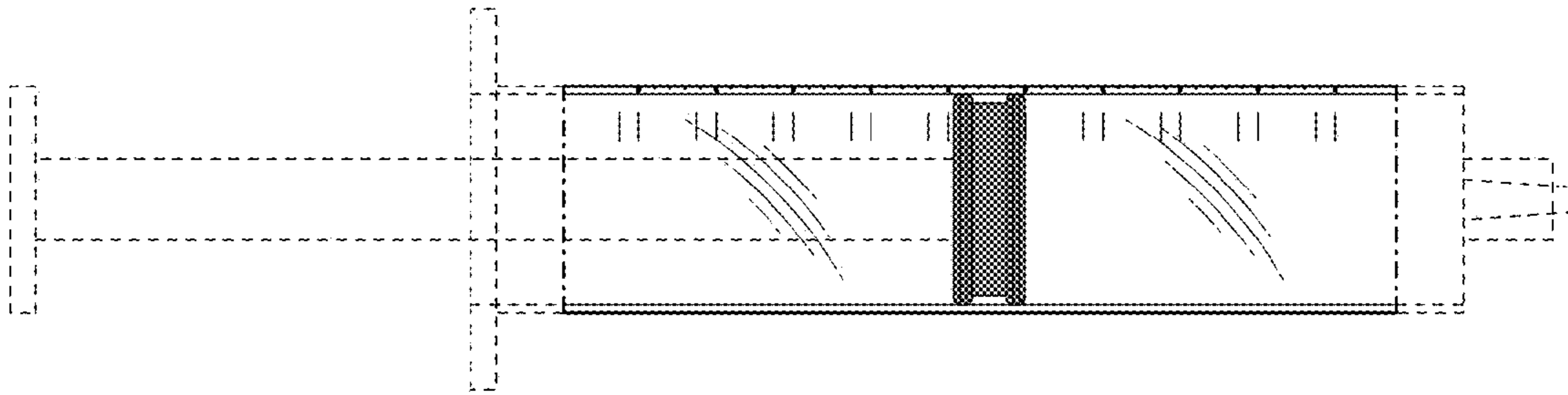


FIG. 29

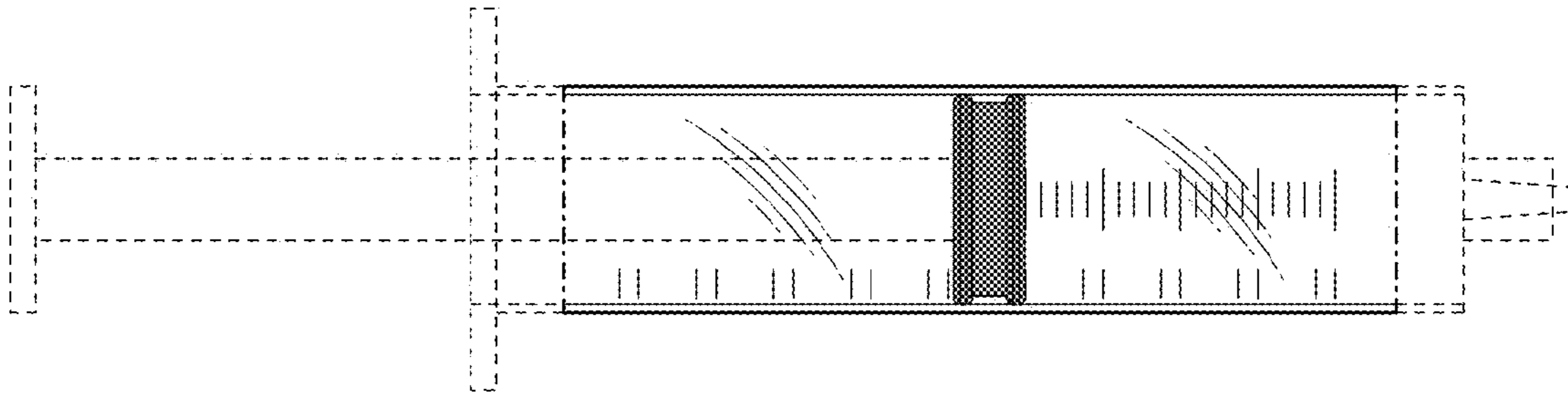


FIG. 28

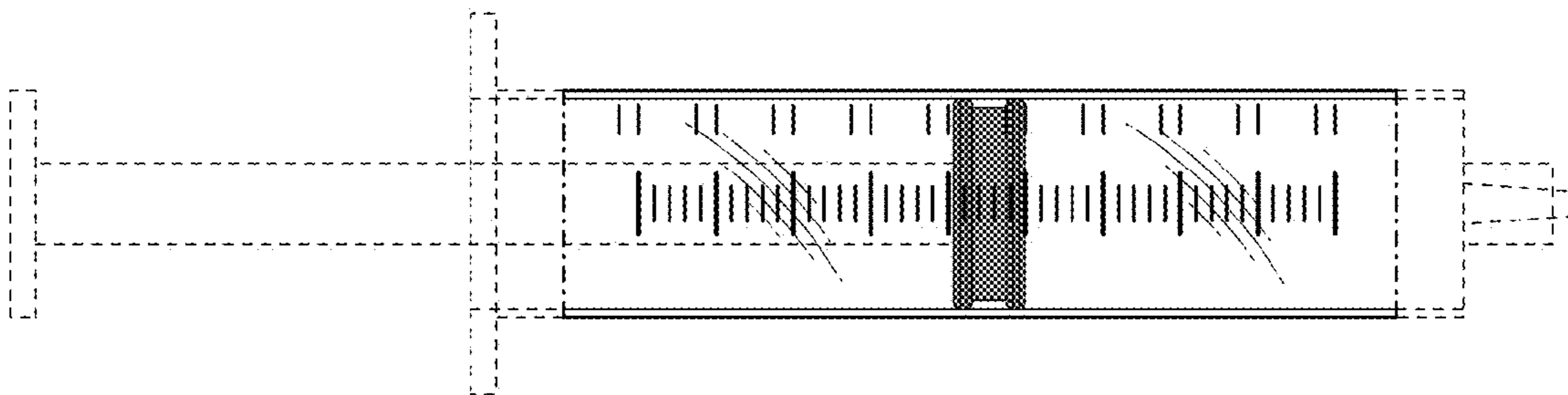


FIG. 27

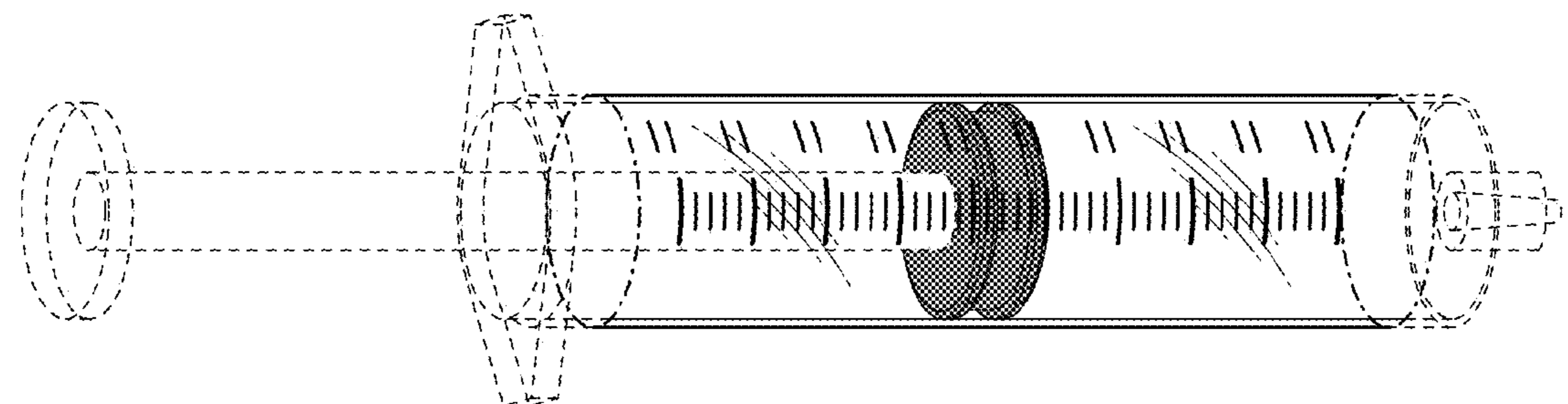


FIG. 26

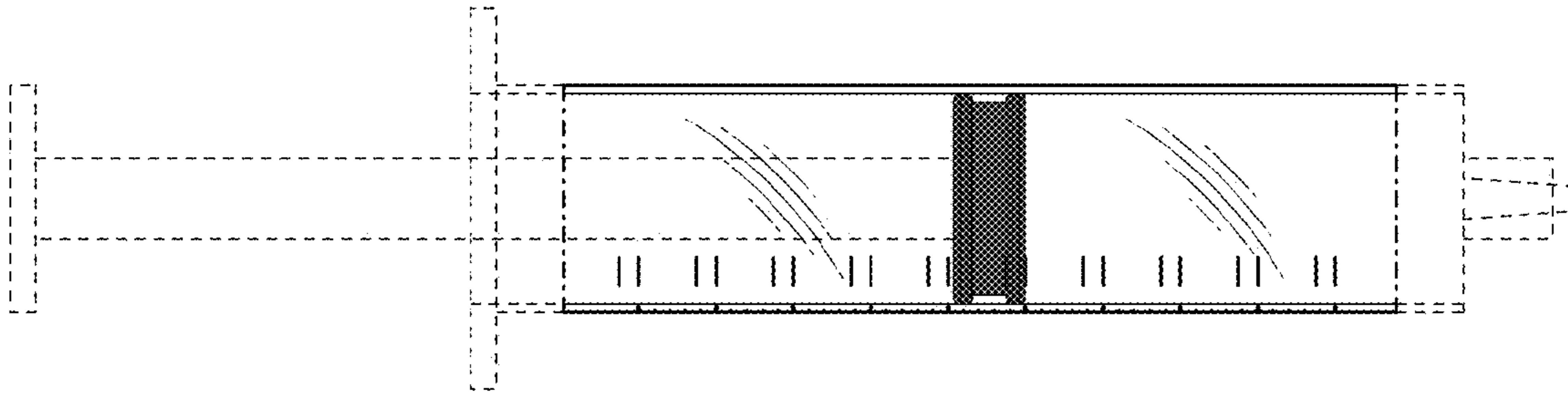


FIG. 35

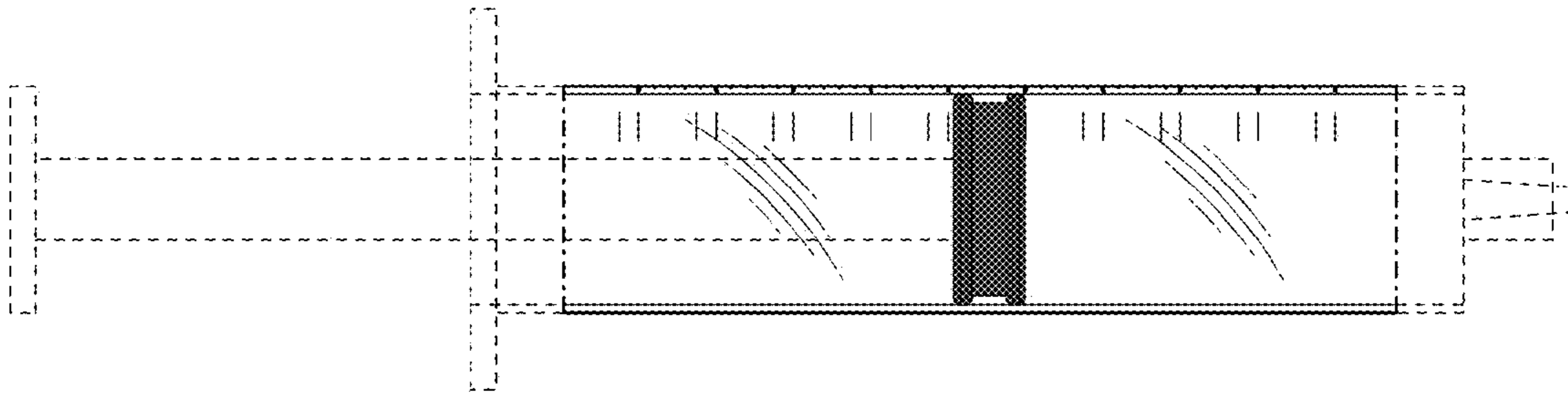


FIG. 34

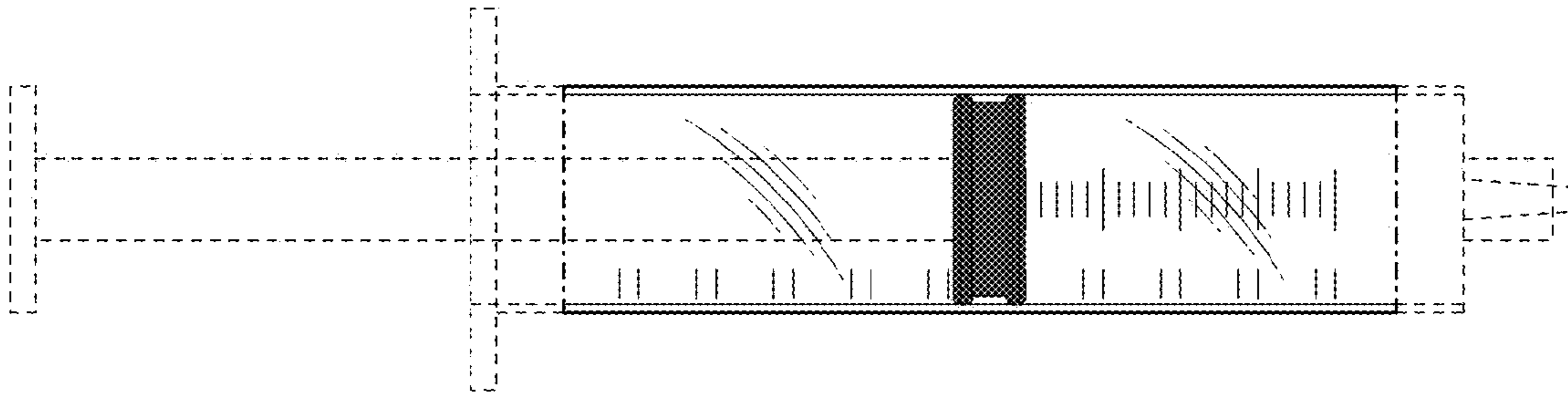


FIG. 33

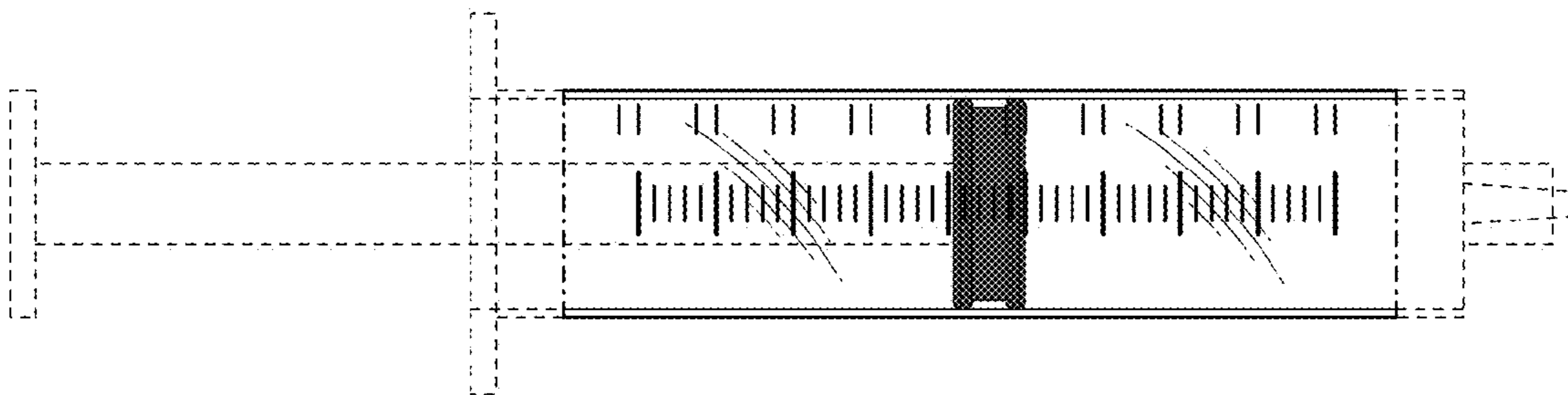


FIG. 32

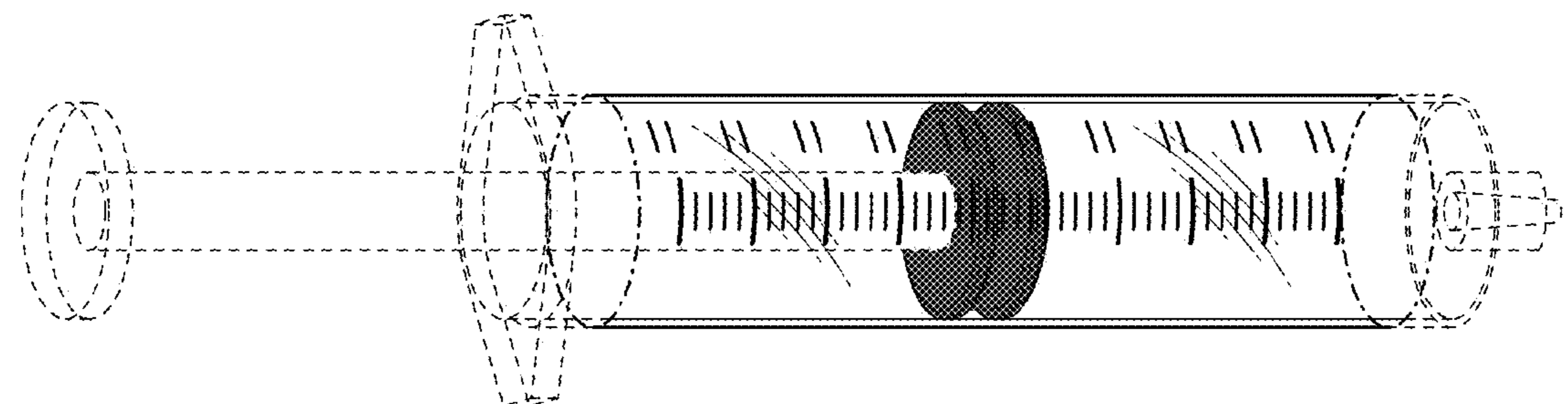


FIG. 31

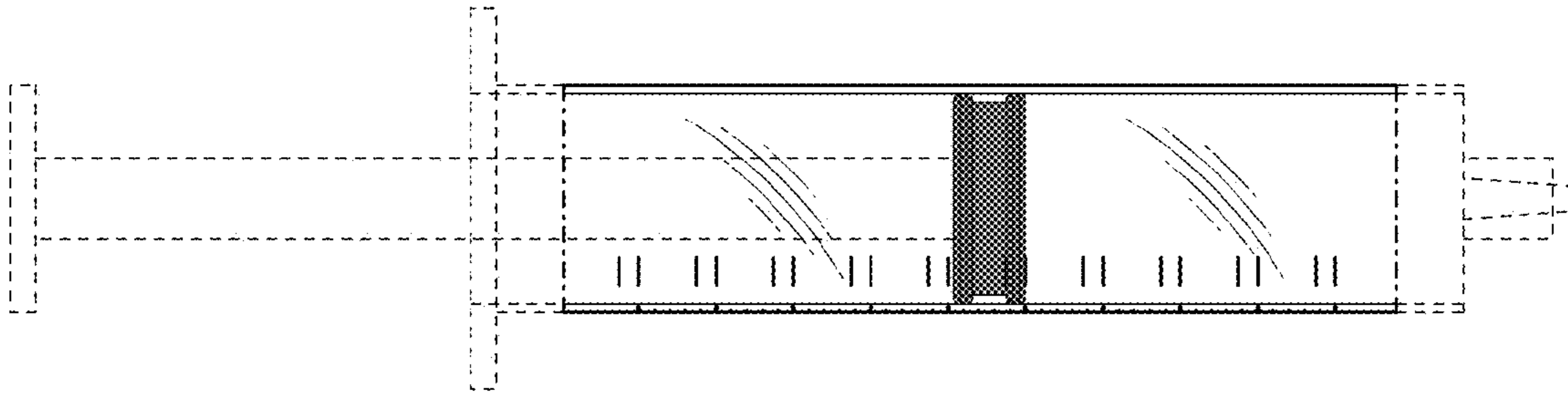


FIG. 36

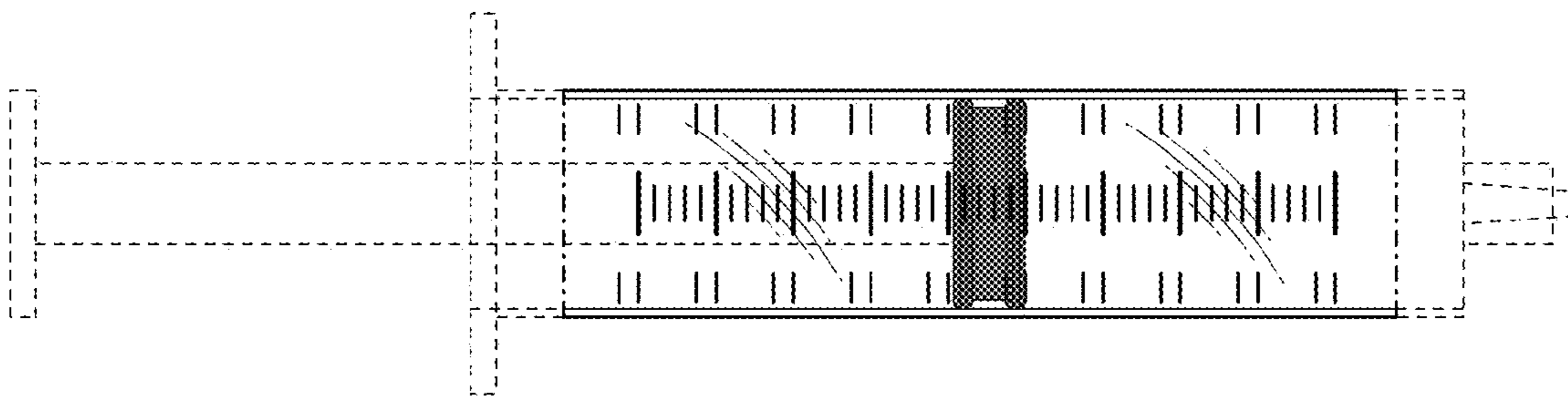


FIG. 37

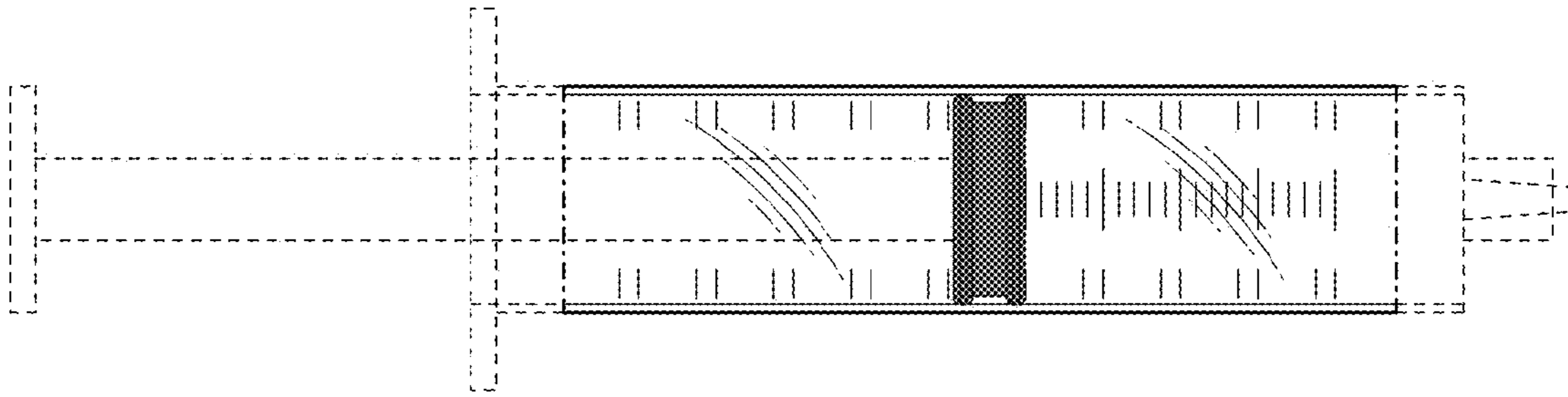


FIG. 38

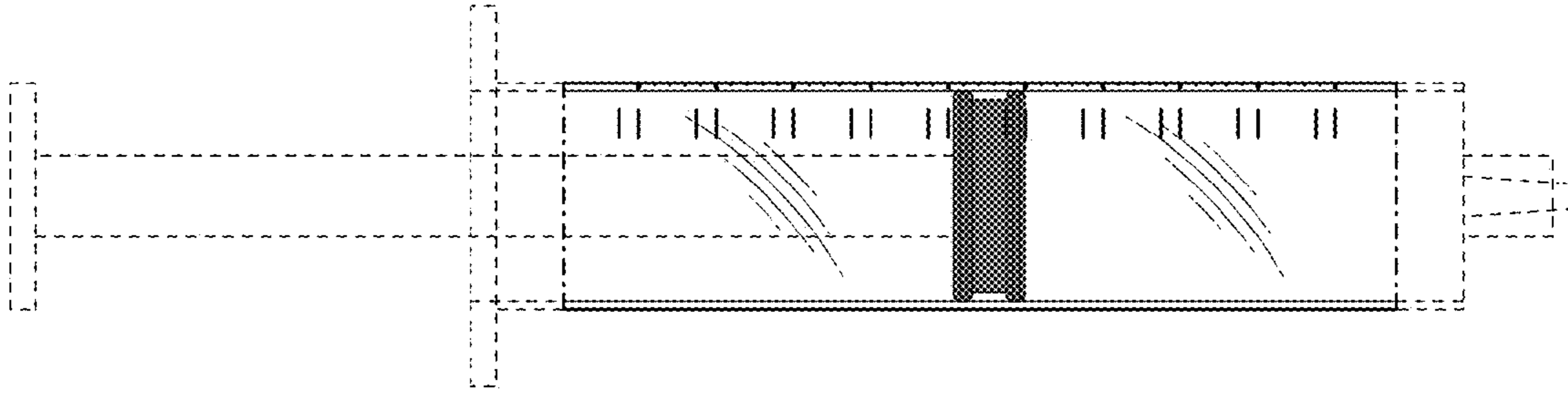


FIG. 39

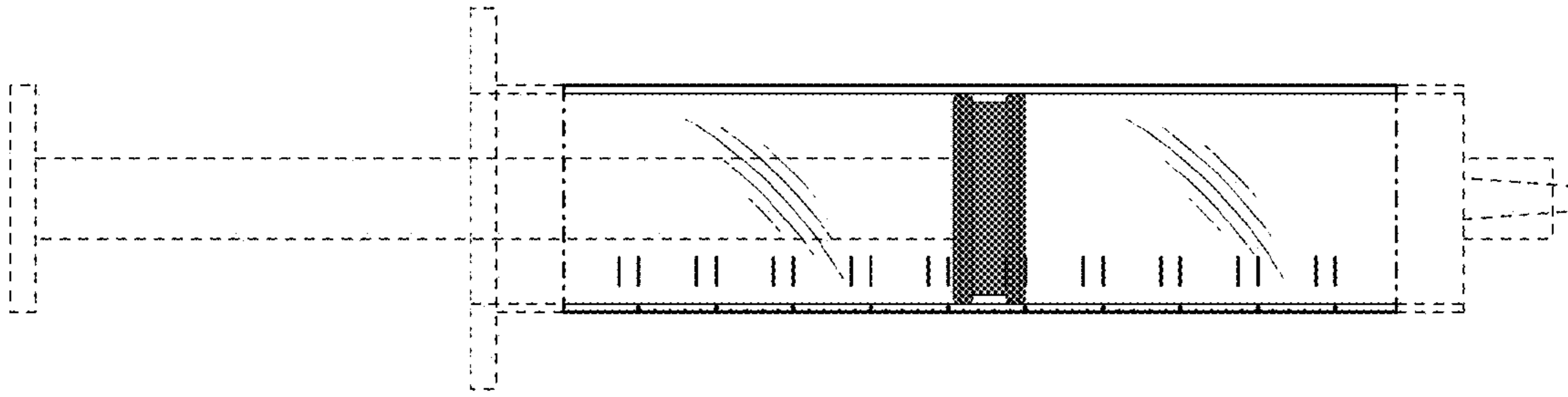


FIG. 40

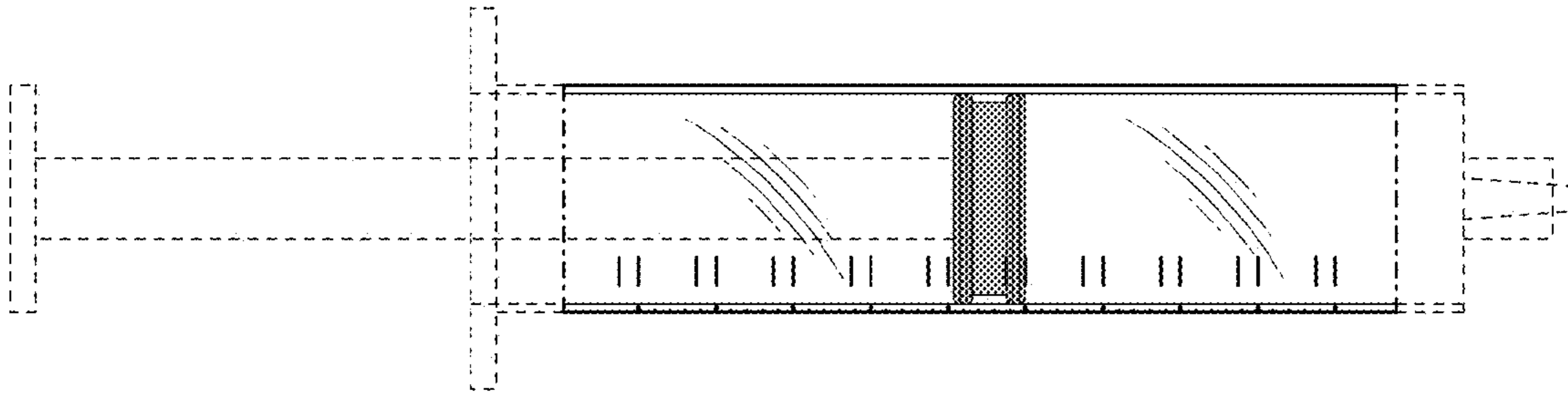


FIG. 45

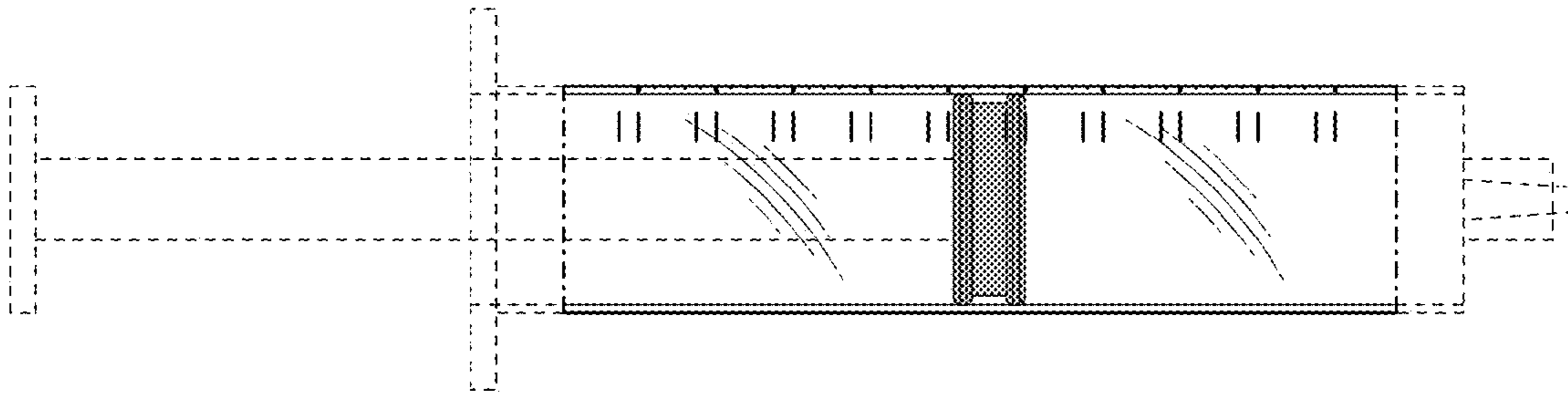


FIG. 44

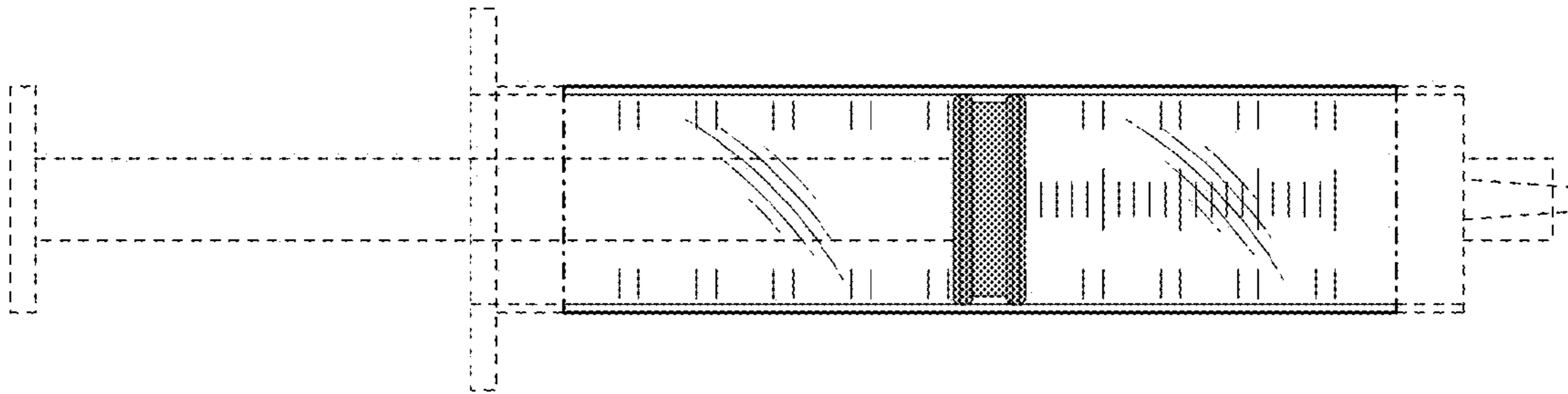


FIG. 43

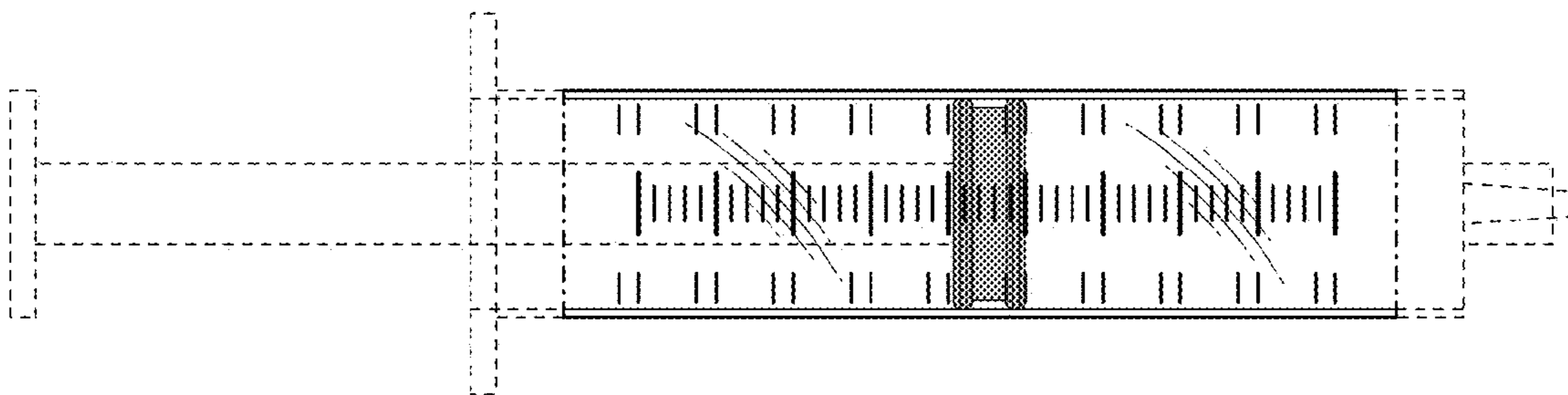


FIG. 42

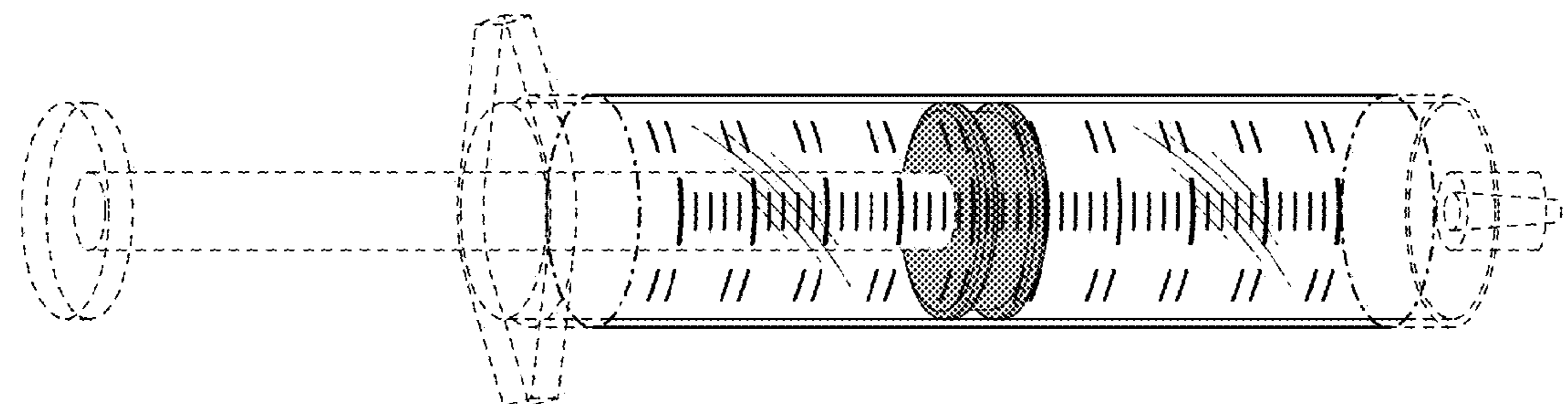


FIG. 41

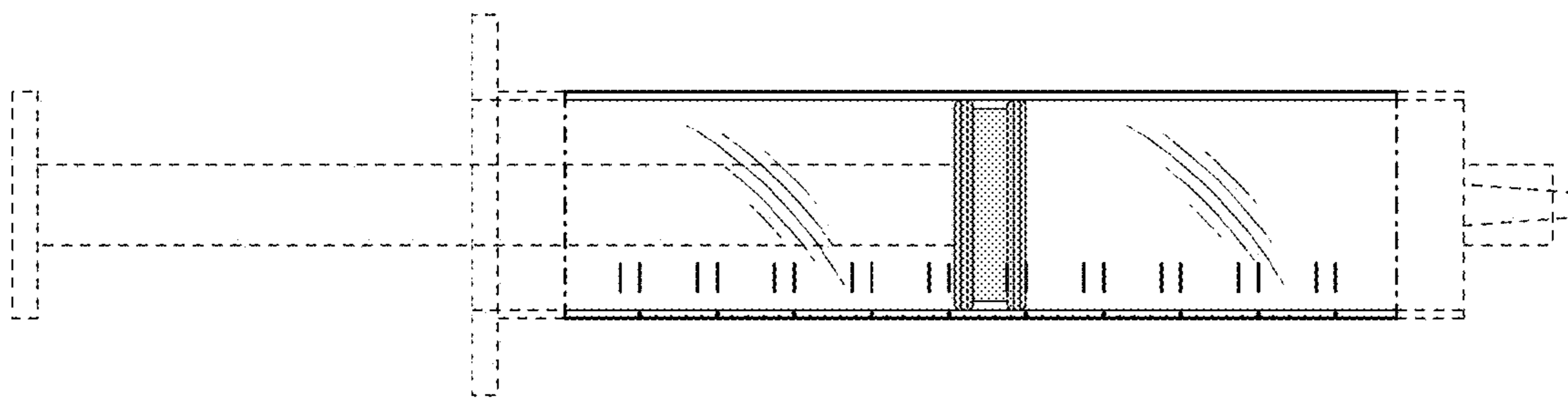


FIG. 50

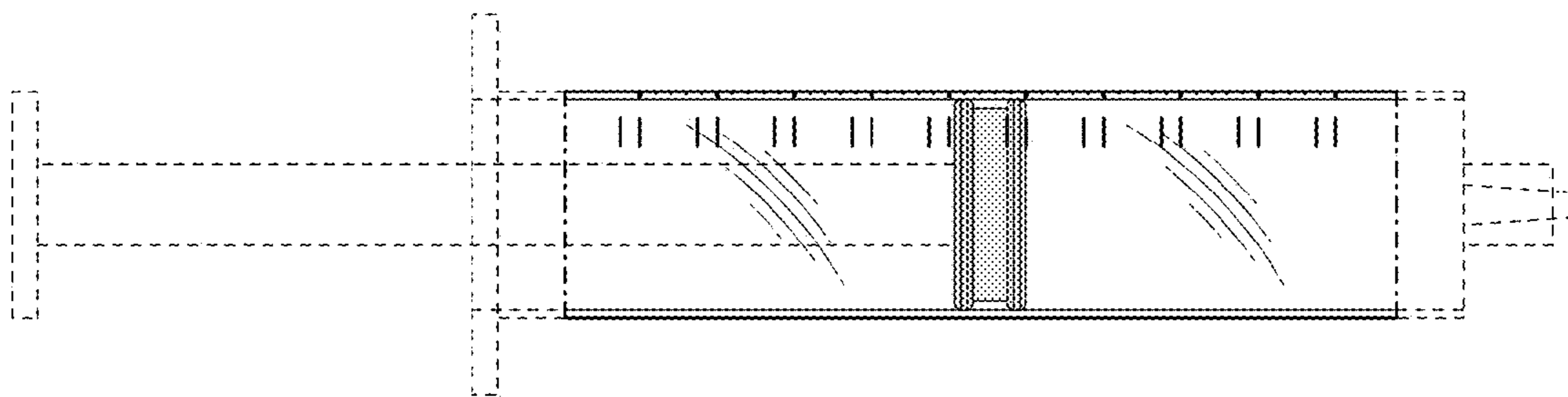


FIG. 49

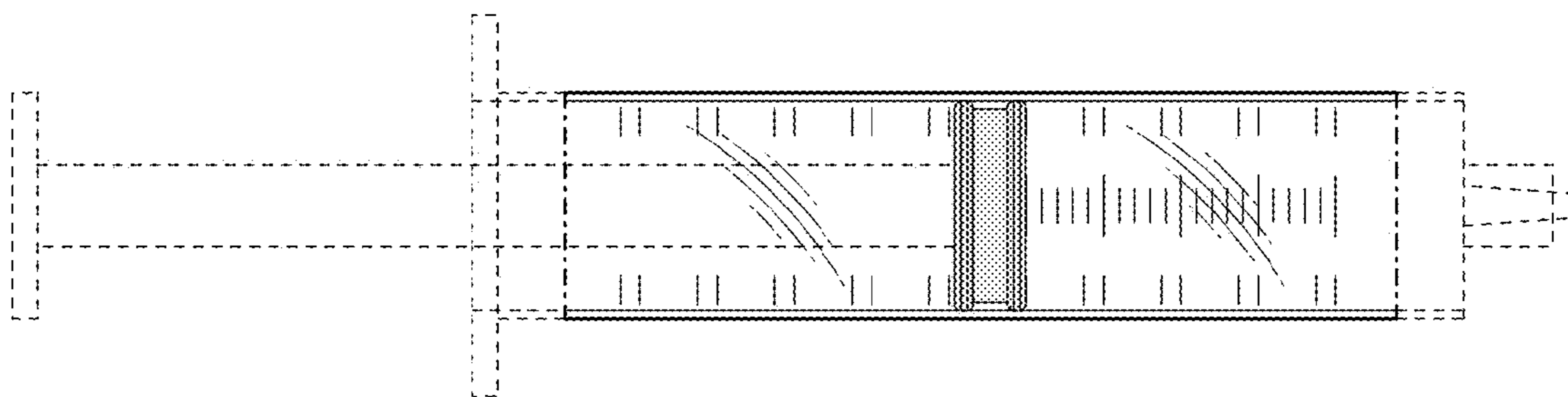


FIG. 48

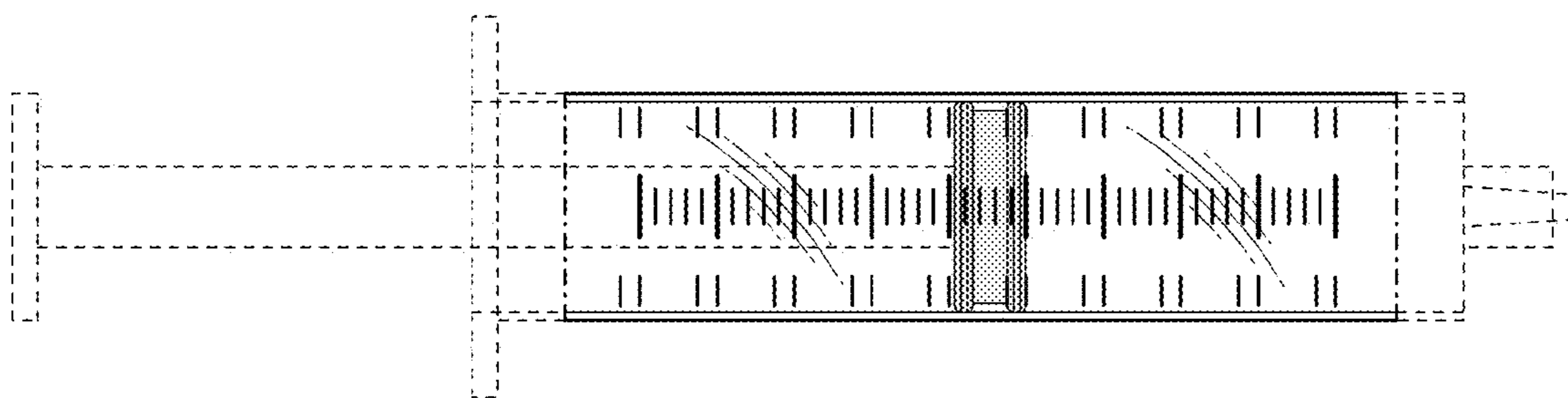


FIG. 47

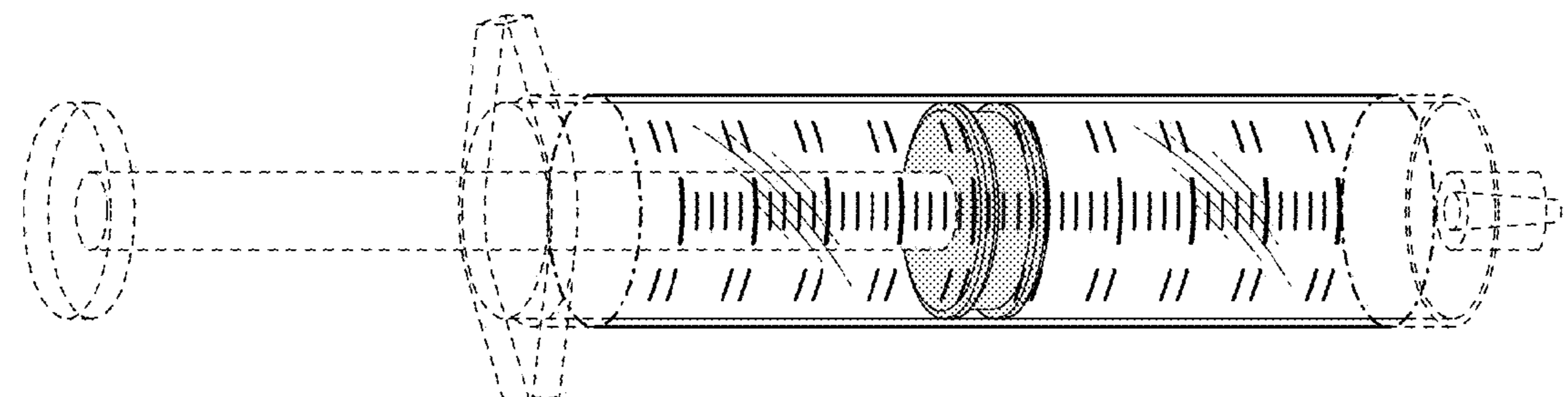


FIG. 46

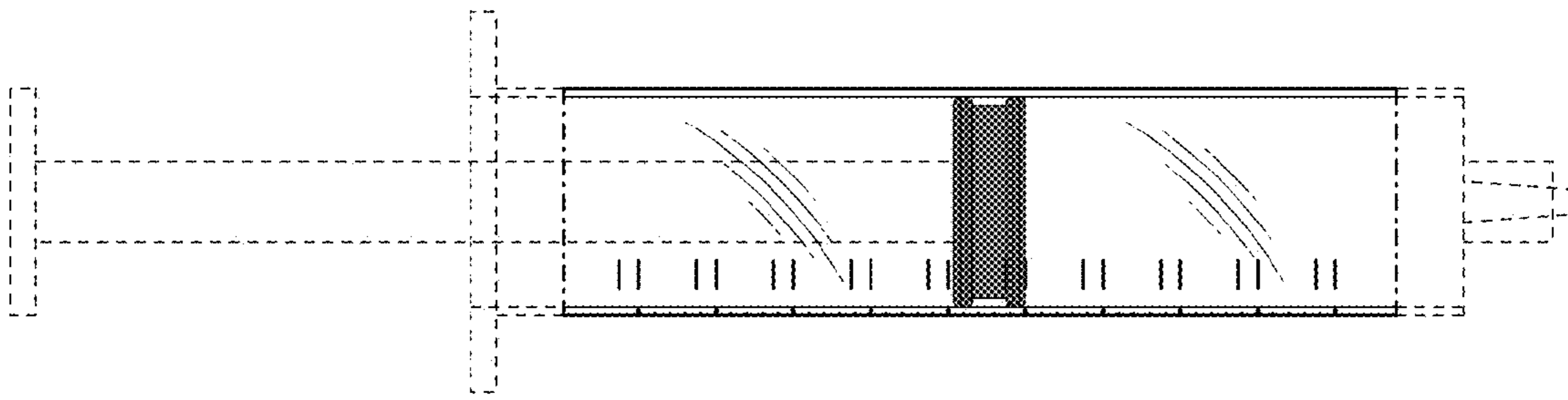


FIG. 55

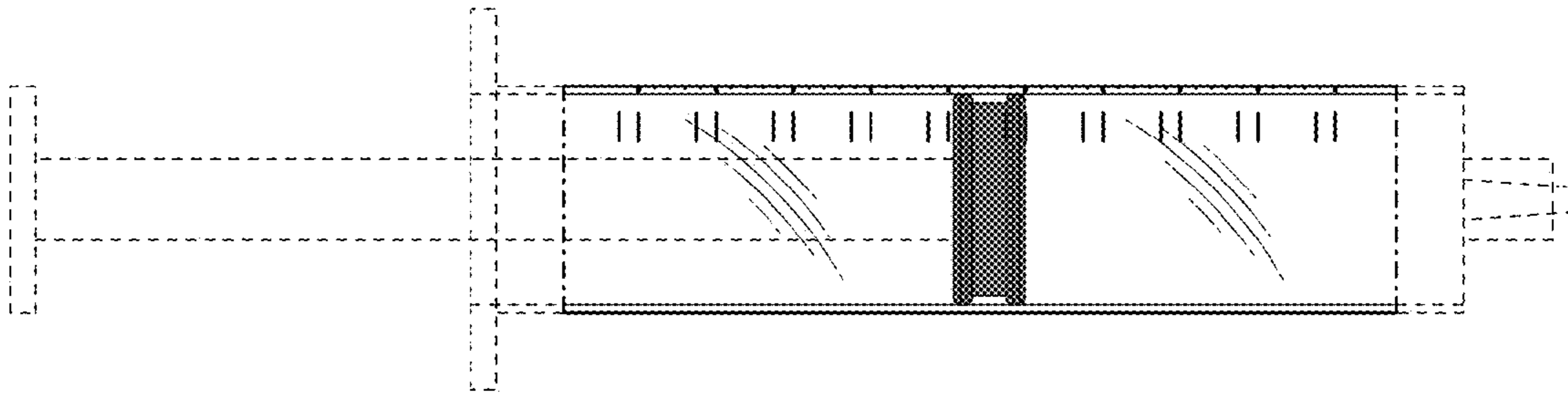


FIG. 54

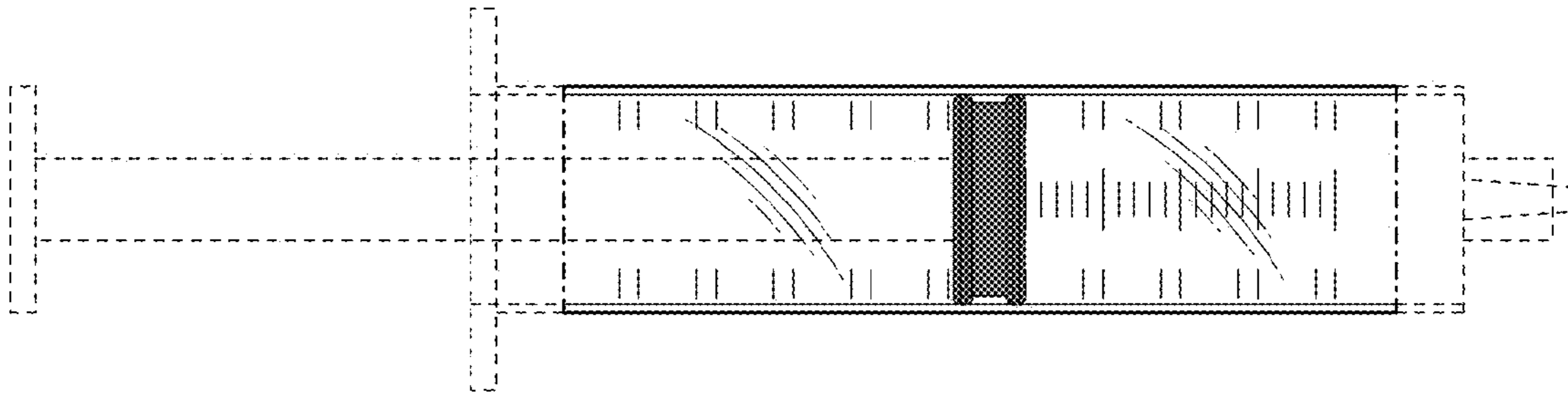


FIG. 53

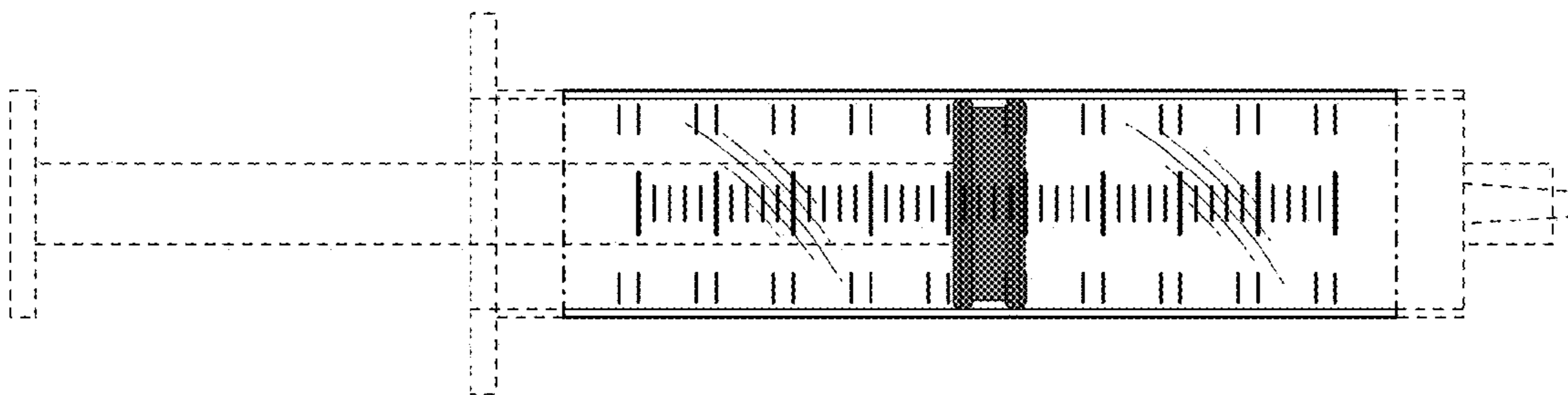


FIG. 52

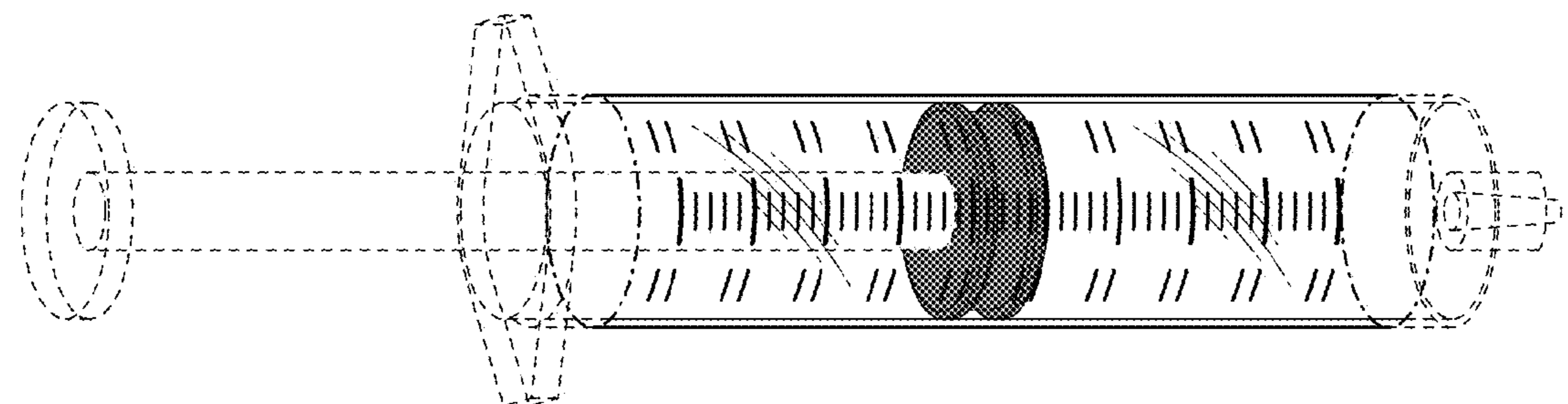


FIG. 51

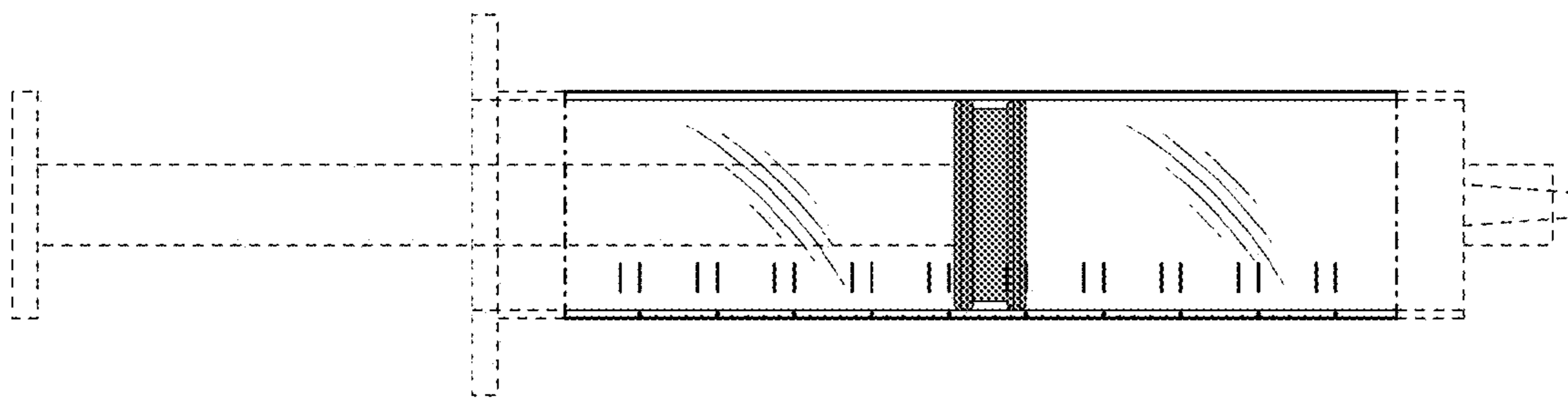


FIG. 56

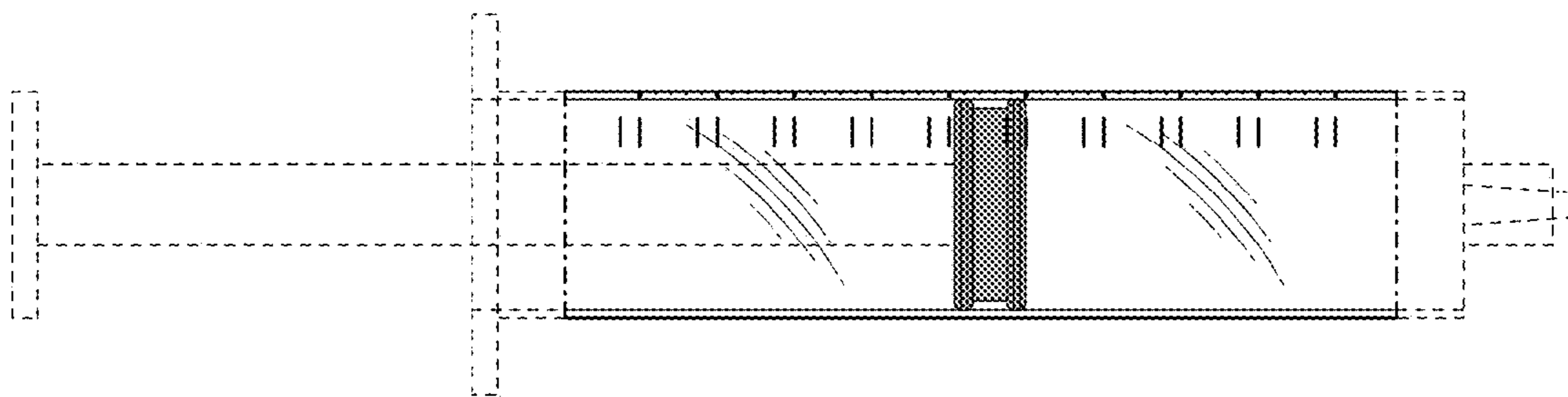


FIG. 57

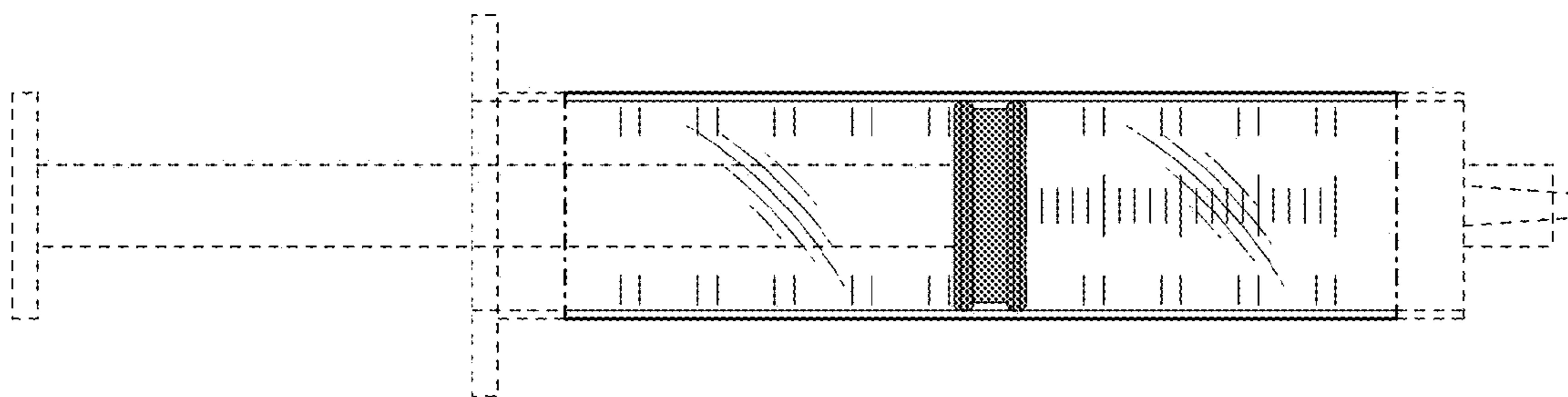


FIG. 58

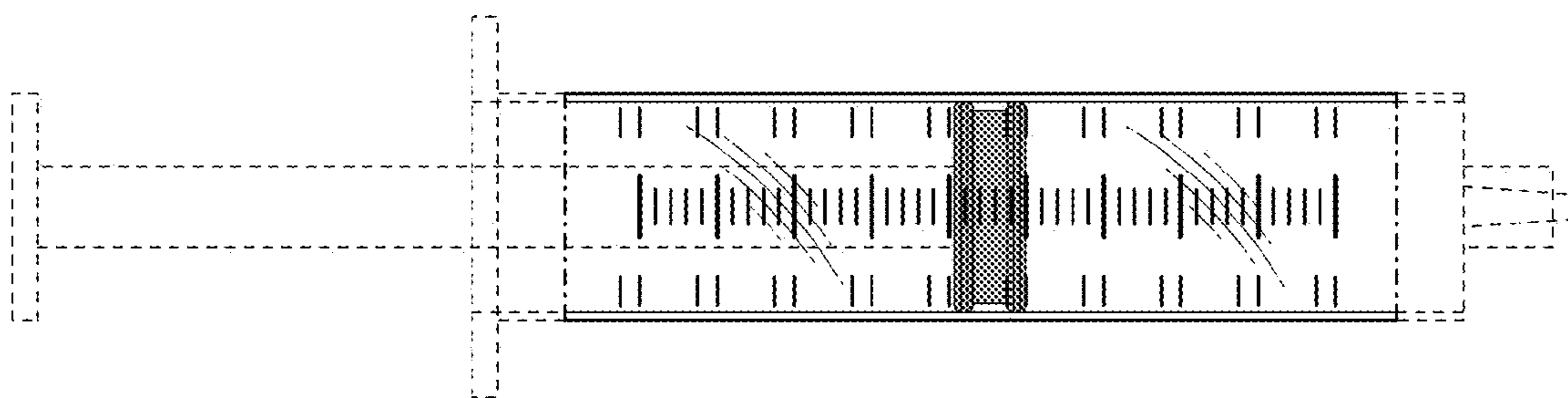


FIG. 59

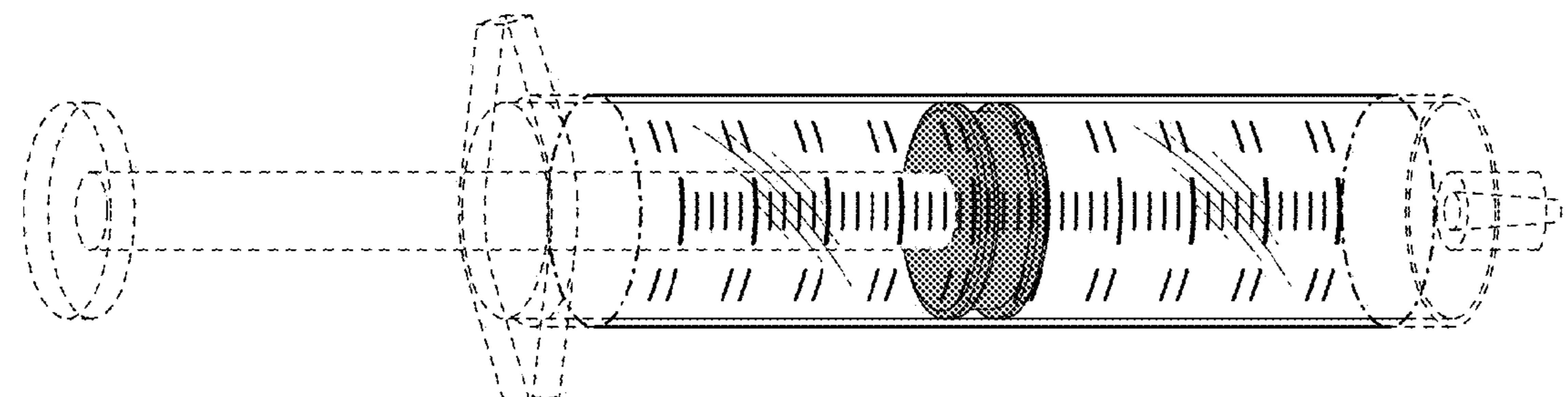


FIG. 60

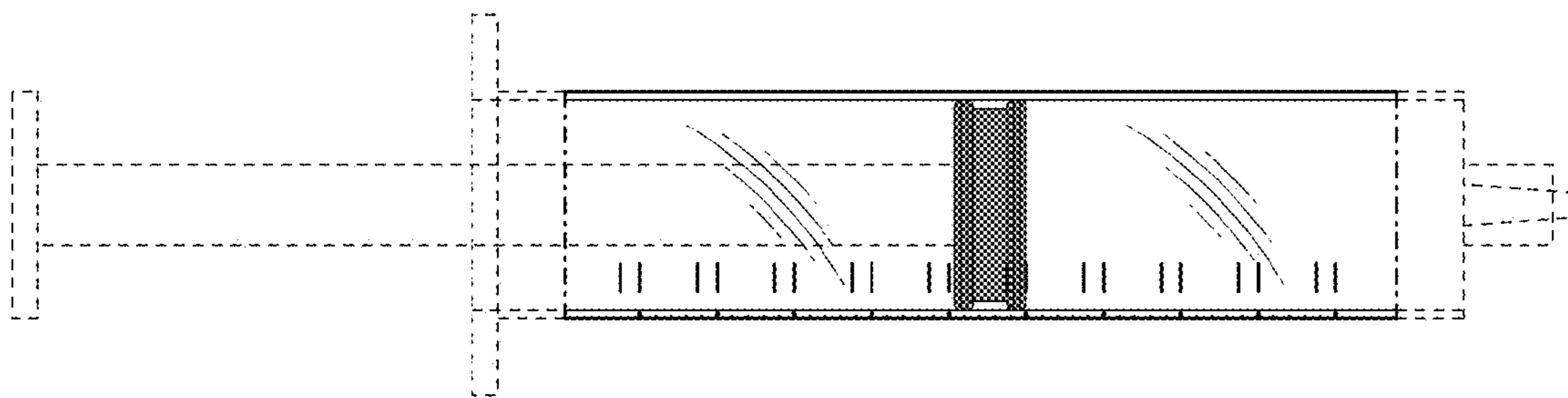


FIG. 65

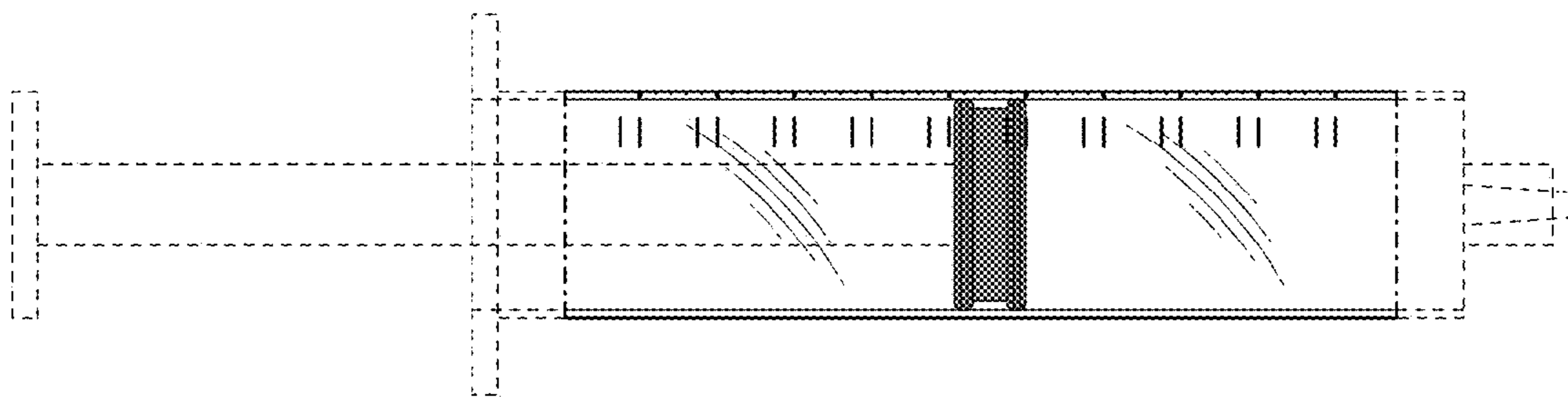


FIG. 64

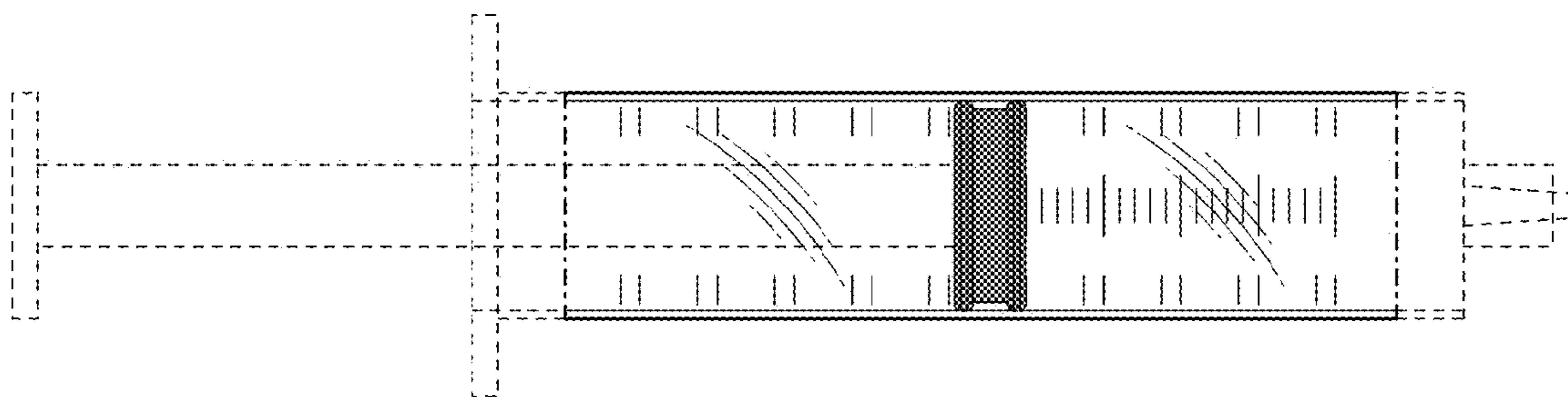


FIG. 63

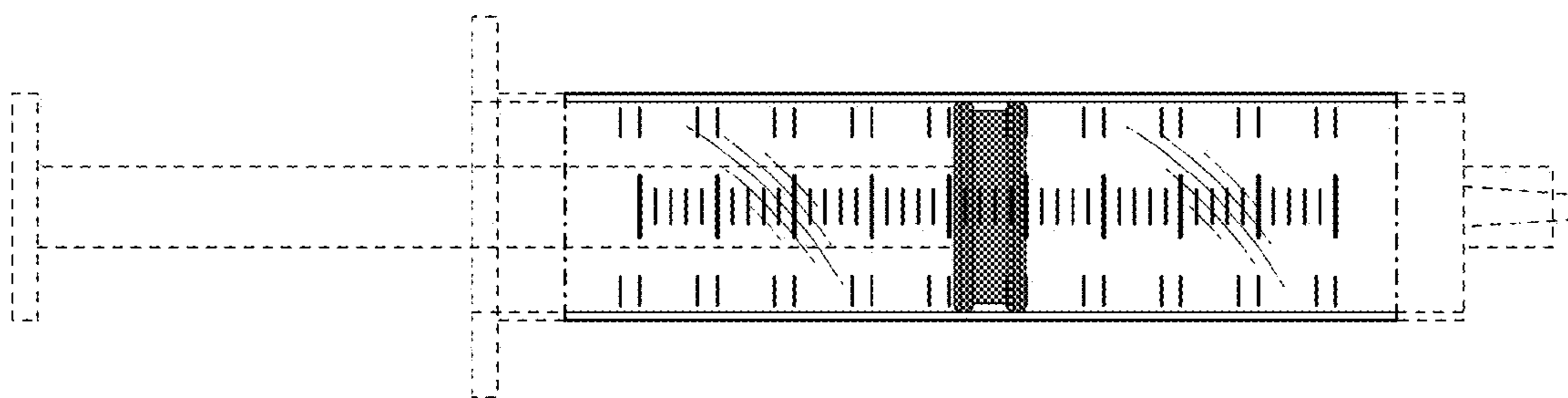


FIG. 62

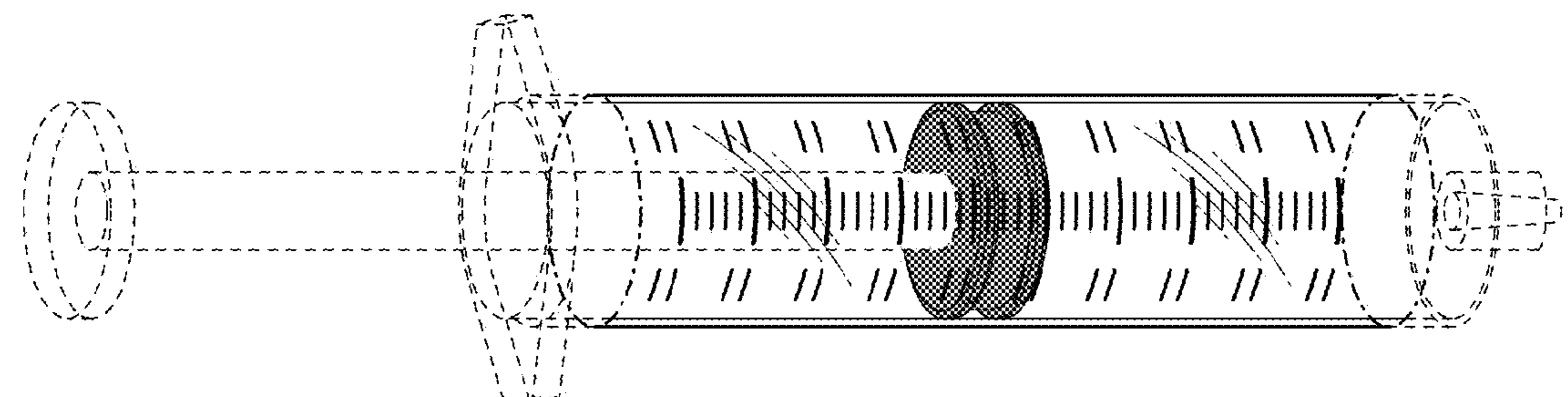


FIG. 61

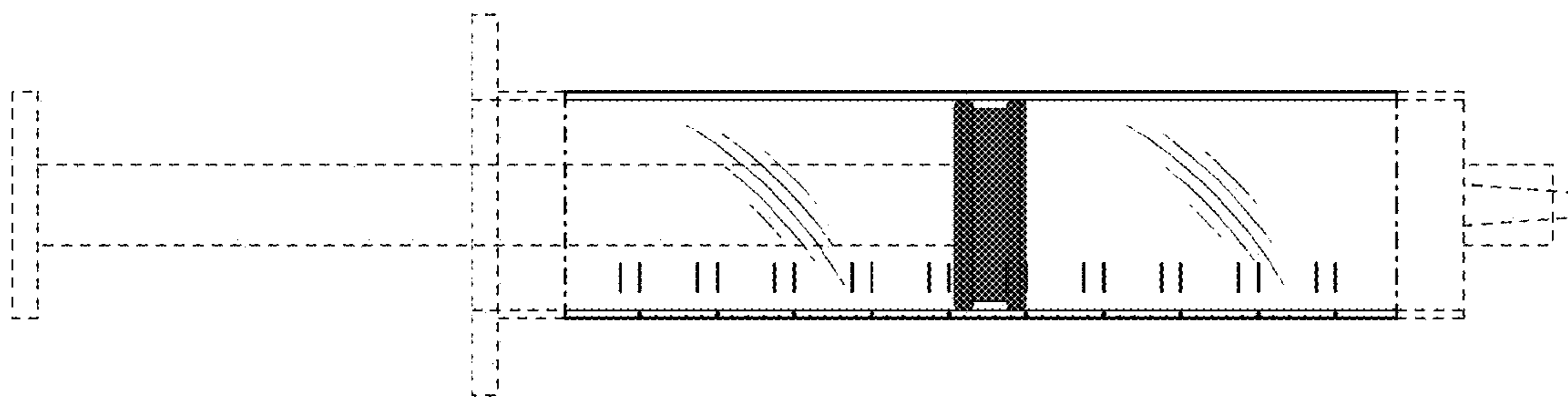


FIG. 70

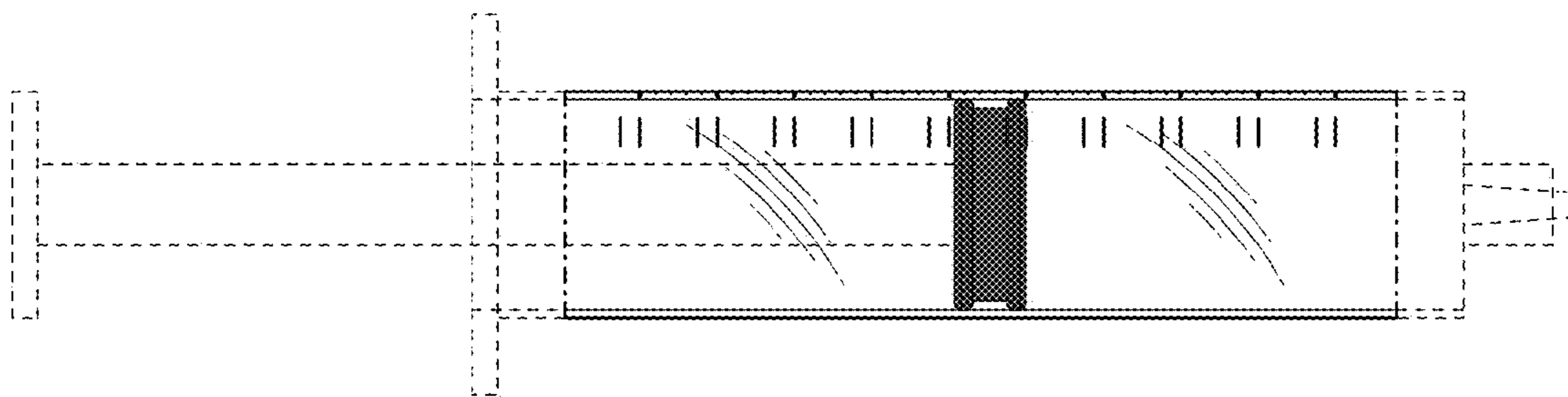


FIG. 69

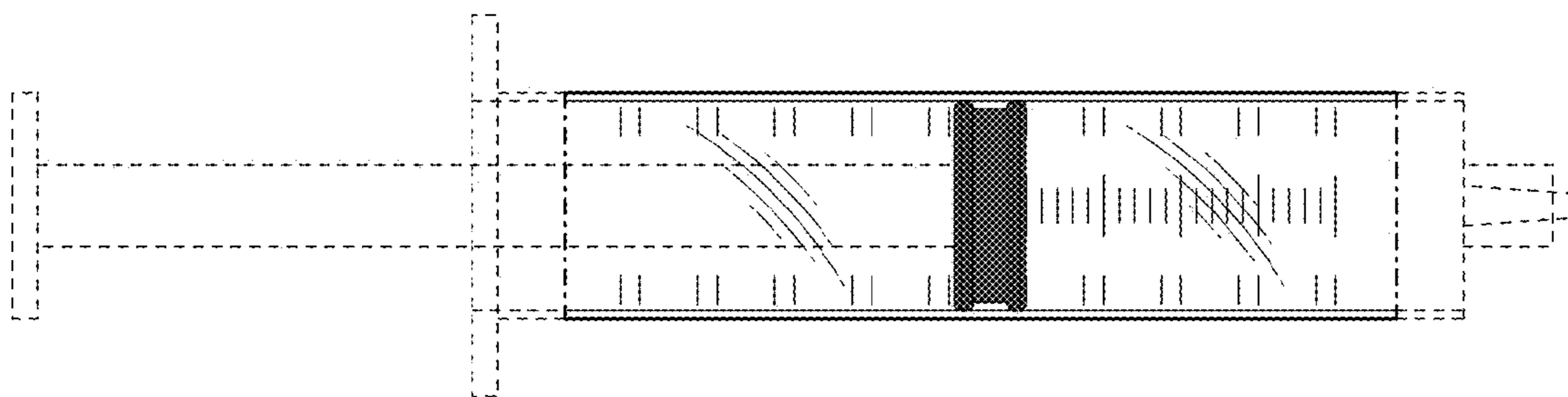


FIG. 68

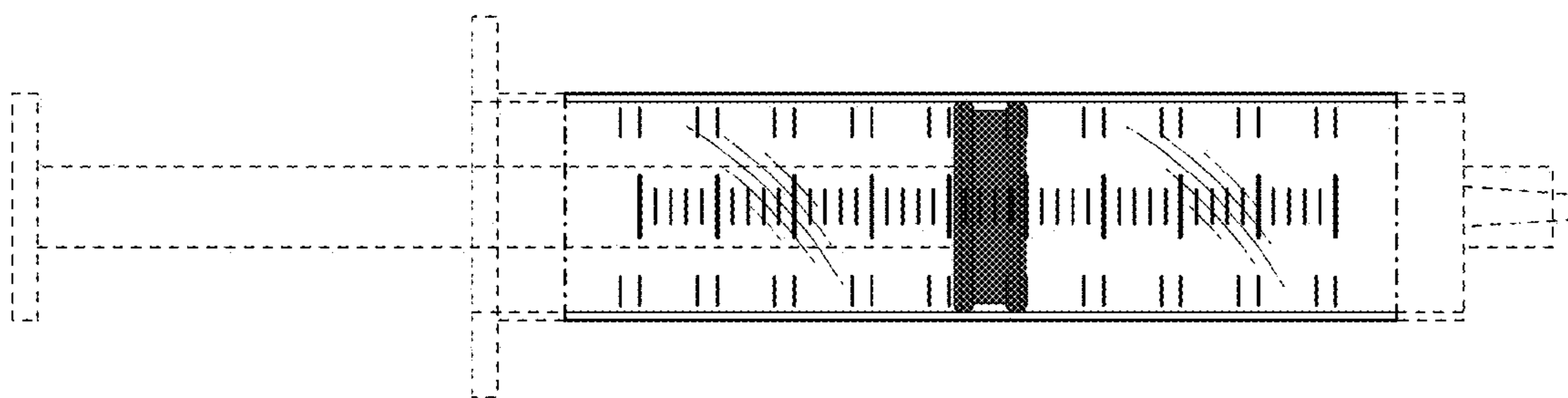


FIG. 67

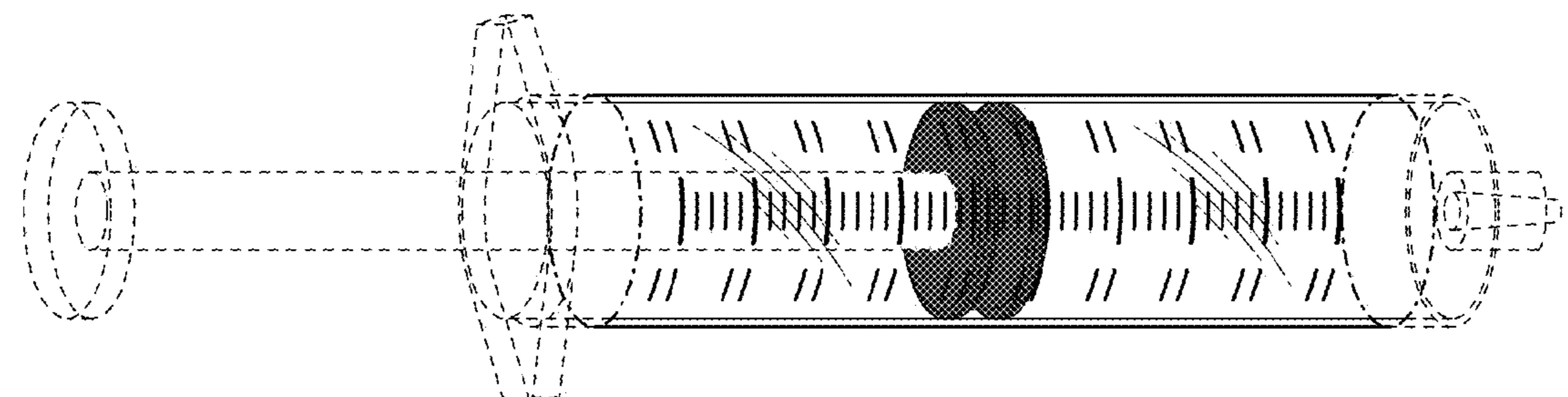


FIG. 66