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(12)

United States Design Patent

Carper et al.

(10)

Patent No.:

US D1,010,105 S

(45)

Date of Patent:

** Jan. 2, 2024

(54) SYRINGE PLUNGER SEAL AND BARREL

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

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Brian Dean Owens, Plano, TX (US);
Roland Clifford Park, Springville, UT (US)

(73) Assignee: Treble Innovations, LLC, Spanish Fork, UT (US)

(**) Term: 15 Years

(21) Appl. No.: 29/712,748

(22) Filed: Nov. 11, 2019

Related U.S. Application Data

(62) Division of application No. 29/634,995, filed on Jan. 26, 2018, now Pat. No. Des. 900,307.

(51) LOC (14) Cl. 24-02

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

(58) Field of Classification Search
USPC D24/112–114, 108, 133, 130, 127, 186

(Continued)

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Primary Examiner — David G Muller

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

(57) CLAIM

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

DESCRIPTION

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.

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

FIG. 2 is a front view thereof;

FIG. 3 is a back view thereof;

FIG. 4 is a left side view thereof;

FIG. 5 is a right side view thereof;

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

FIG. 7 is a front view thereof;

FIG. 8 is a back view thereof;

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 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 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 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;

FIG. 26 is a perspective view of a plunger seal showing another new design;

FIG. 27 is a front view thereof;

(Continued)

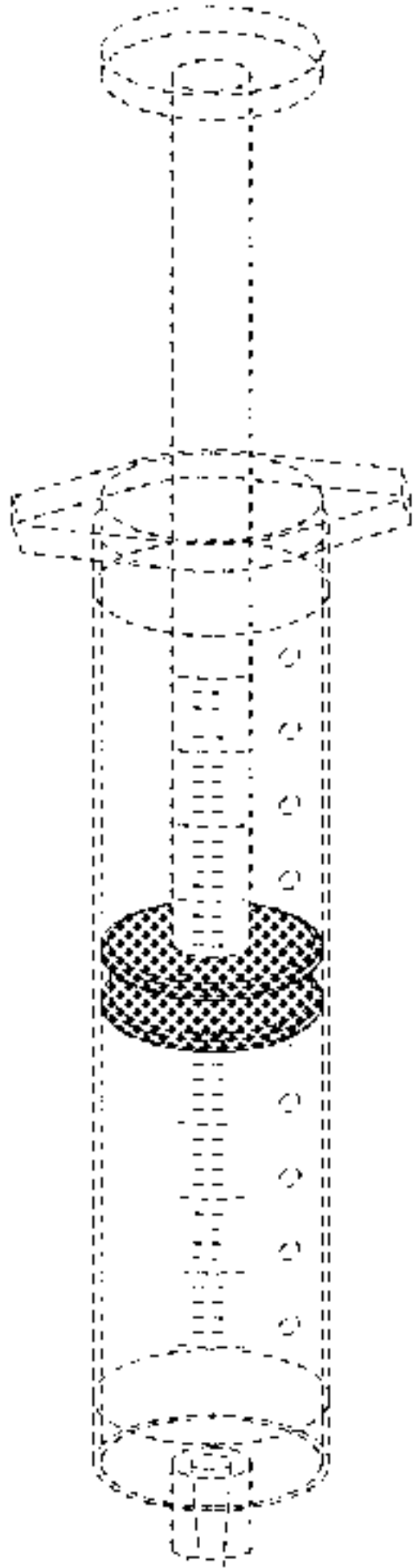


FIG. 82 is a front view thereof;
FIG. 83 is a back view thereof;
FIG. 84 is a left side view thereof;
FIG. 85 is a right side view thereof;
FIG. 86 is a perspective view of a plunger seal showing another new design;
FIG. 87 is a front view thereof;
FIG. 88 is a back view thereof;
FIG. 89 is a left side view thereof;
FIG. 90 is a right side view thereof;
FIG. 91 is a perspective view of a plunger seal showing another new design;
FIG. 92 is a front view thereof;
FIG. 93 is a back view thereof;
FIG. 94 is a left side view thereof;
FIG. 95 is a right side view thereof;
FIG. 96 is a perspective view of a plunger seal showing another new design;
FIG. 97 is a front view thereof;
FIG. 98 is a back view thereof;
FIG. 99 is a left side view thereof;
FIG. 100 is a right side view thereof;
FIG. 101 is a perspective view of a plunger seal showing another new design;
FIG. 102 is a front view thereof;
FIG. 103 is a back view thereof;
FIG. 104 is a left side view thereof;
FIG. 105 is a right side view thereof;
FIG. 106 is a perspective view of a plunger seal showing another new design;
FIG. 107 is a front view thereof;
FIG. 108 is a back view thereof;
FIG. 109 is a left side view thereof;
FIG. 110 is a right side view thereof;
FIG. 111 is a perspective view of a plunger seal showing another new design;
FIG. 112 is a front view thereof;
FIG. 113 is a back view thereof;
FIG. 114 is a left side view thereof;
FIG. 115 is a right side view thereof;
FIG. 116 is a perspective view of a plunger seal showing another new design;
FIG. 117 is a front view thereof;
FIG. 118 is a back view thereof;
FIG. 119 is a left side view thereof;
FIG. 120 is a right side view thereof;
FIG. 121 is a perspective view of a plunger seal showing another new design;
FIG. 122 is a front view thereof;
FIG. 123 is a back view thereof;
FIG. 124 is a left side view thereof;
FIG. 125 is a right side view thereof;
FIG. 126 is a perspective view of a plunger seal showing another new design;
FIG. 127 is a front view thereof;
FIG. 128 is a back view thereof;
FIG. 129 is a left side view thereof;
FIG. 130 is a right side view thereof;
FIG. 131 is a perspective view of a plunger seal showing another new design;
FIG. 132 is a front view thereof;
FIG. 133 is a back view thereof;
FIG. 134 is a left side view thereof;
FIG. 135 is a right side view thereof;

FIG. 136 is a perspective view of a plunger seal showing another new design;
FIG. 137 is a front view thereof;
FIG. 138 is a back view thereof;
FIG. 139 is a left side view thereof; and,
FIG. 140 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, 28 Drawing Sheets
(28 of 28 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.

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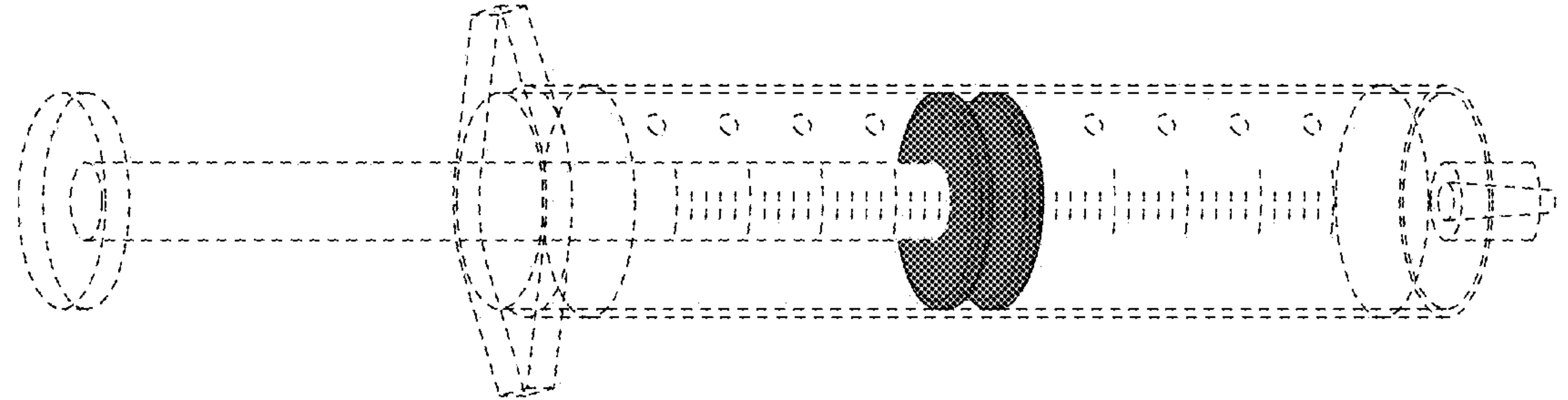


FIG. 1

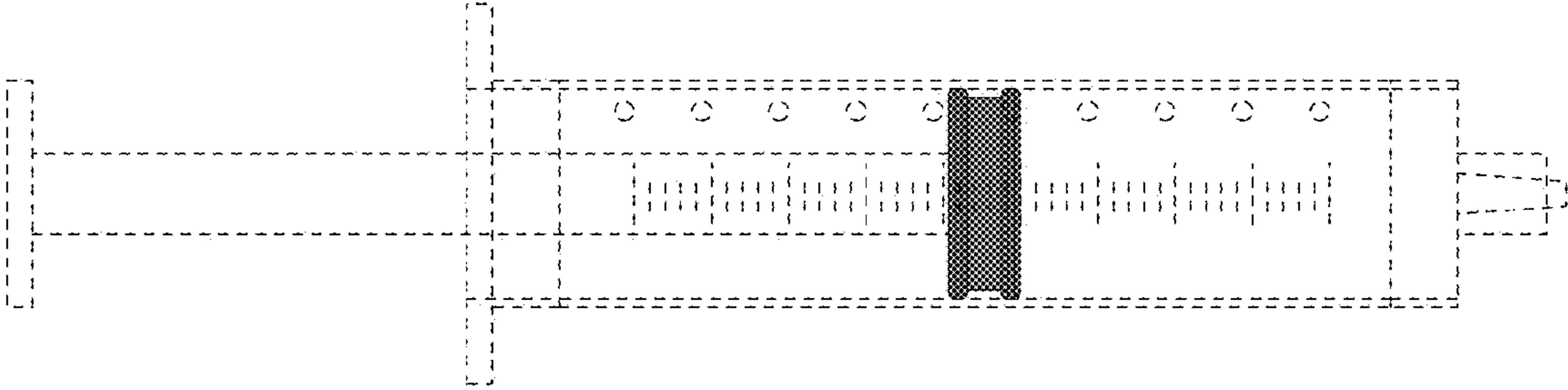


FIG. 2

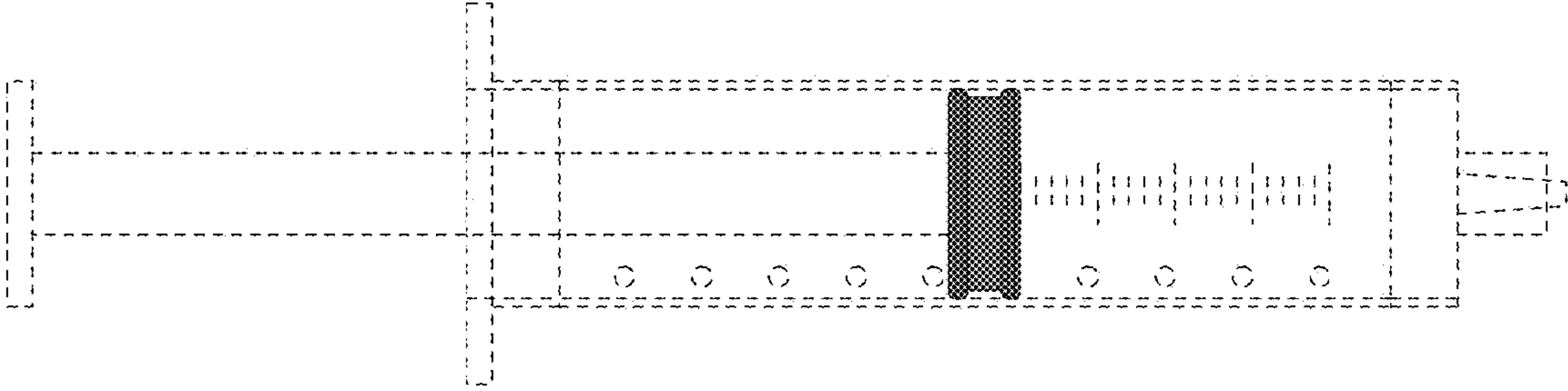


FIG. 3

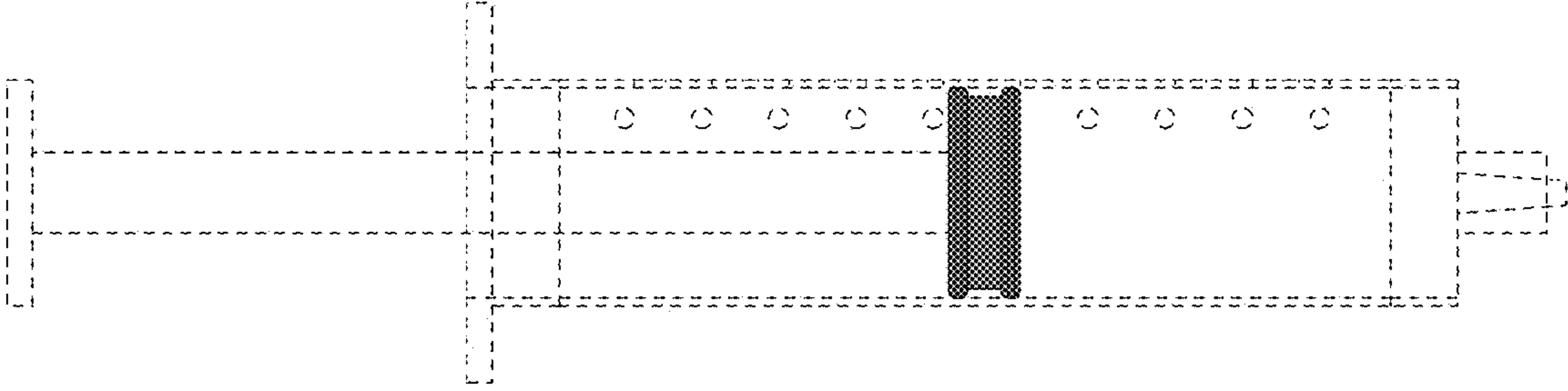


FIG. 4

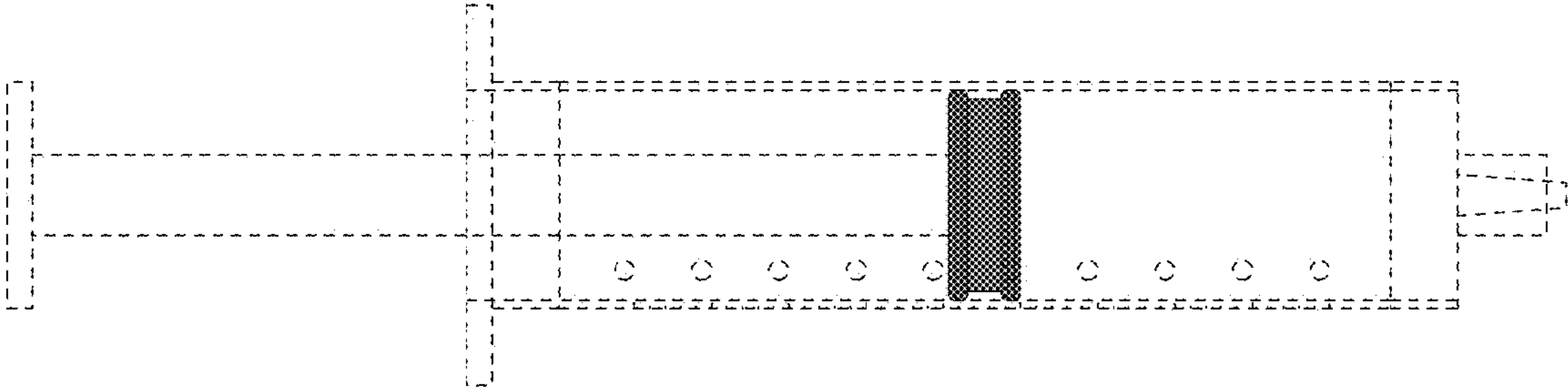


FIG. 5

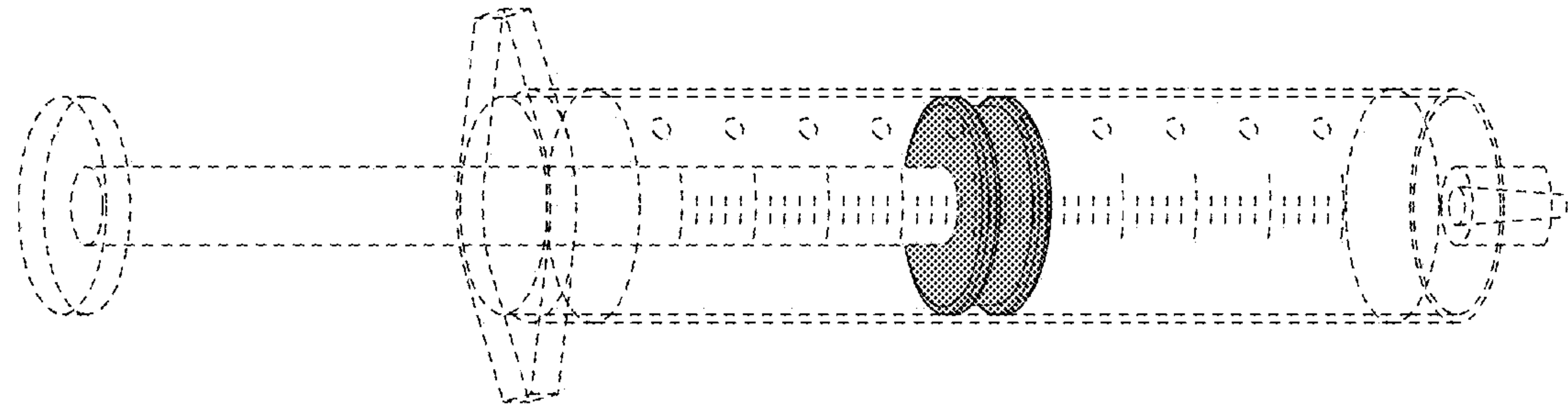


FIG. 6

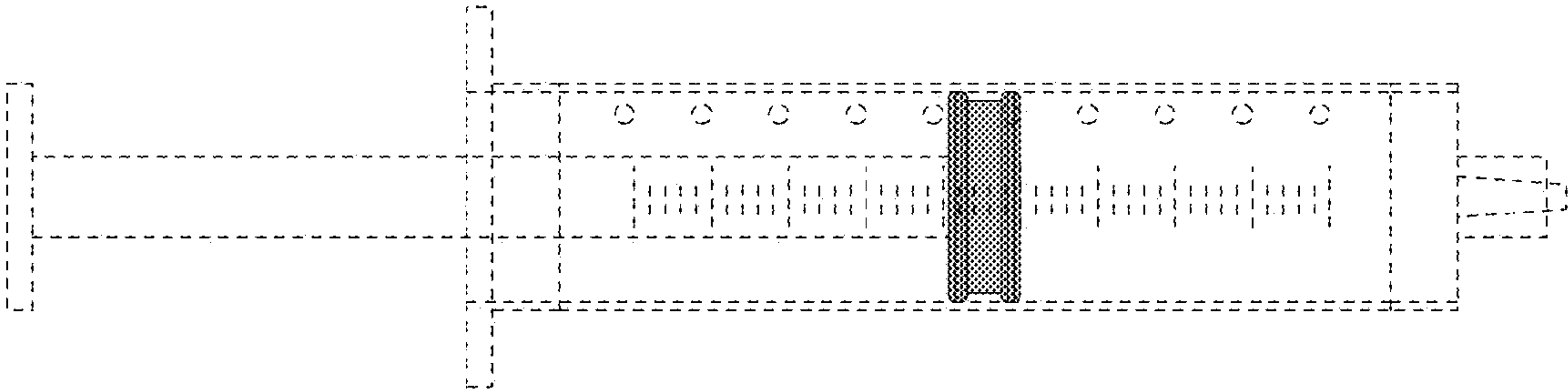


FIG. 7

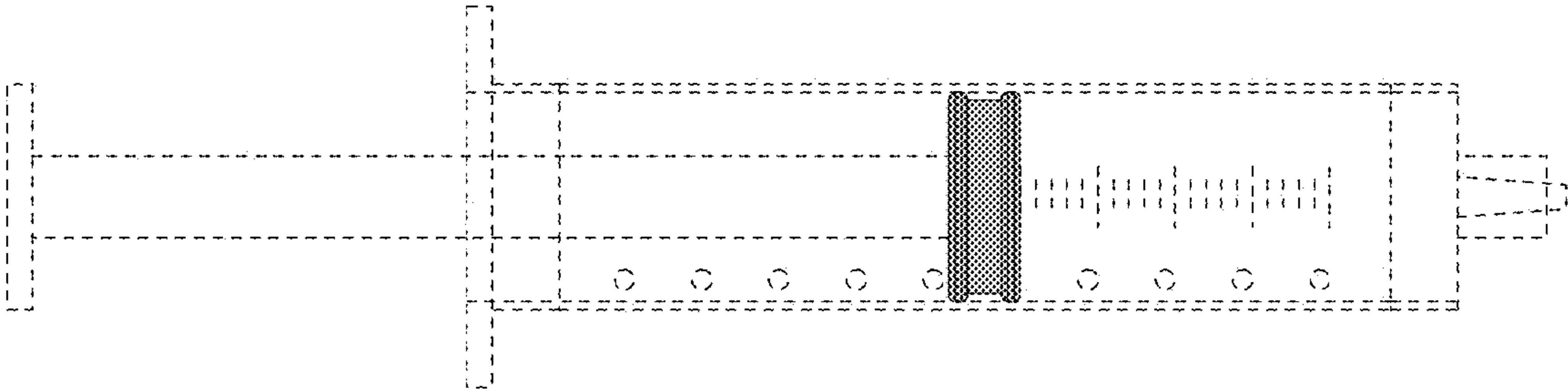


FIG. 8

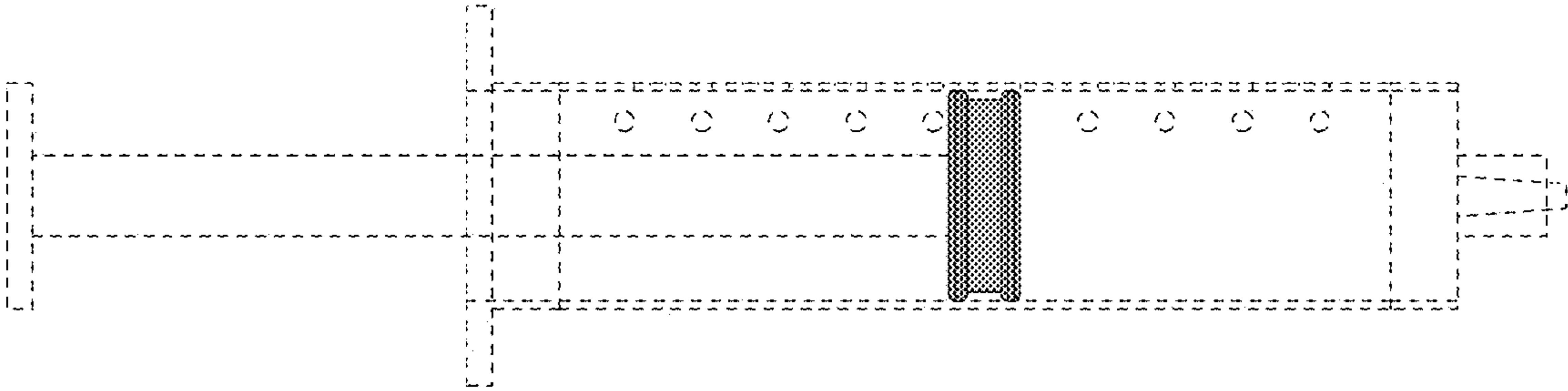


FIG. 9

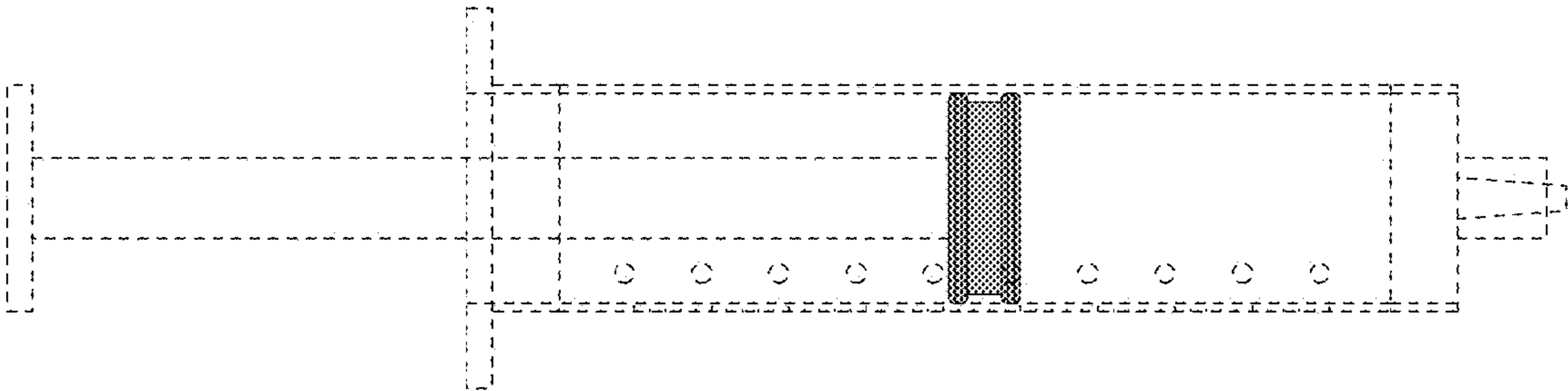


FIG. 10

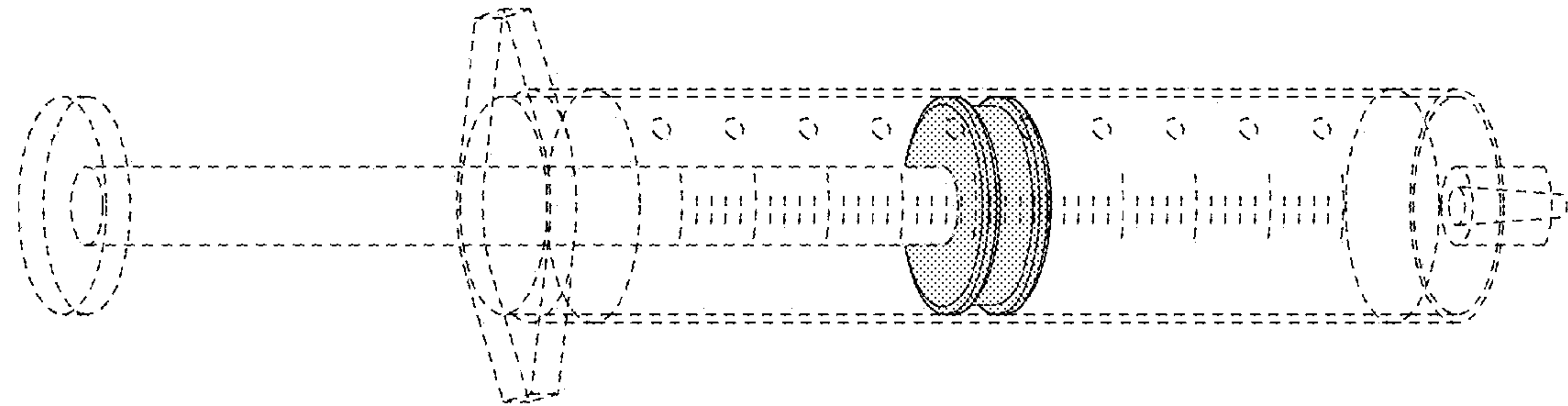


FIG. 11

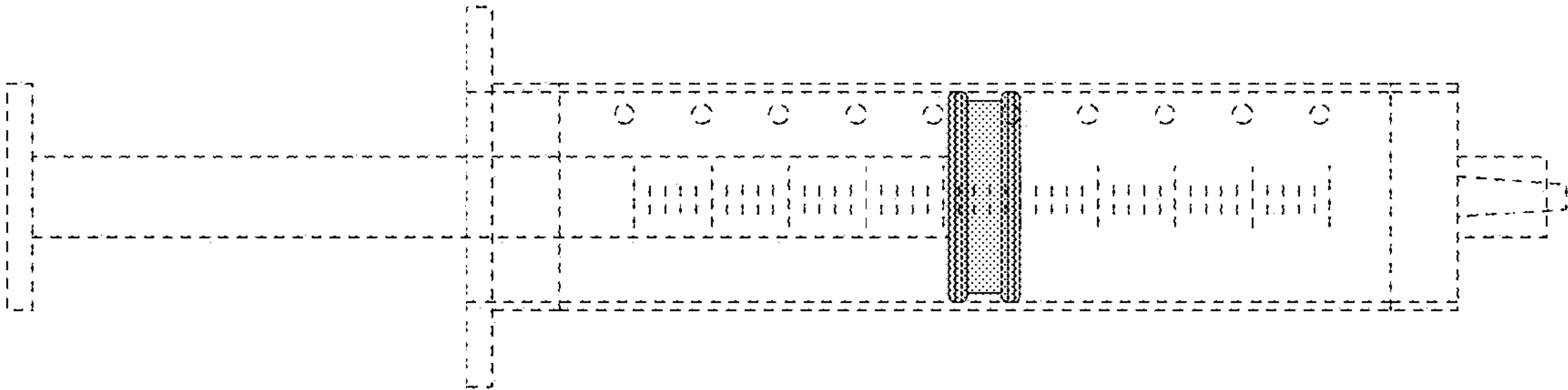


FIG. 12

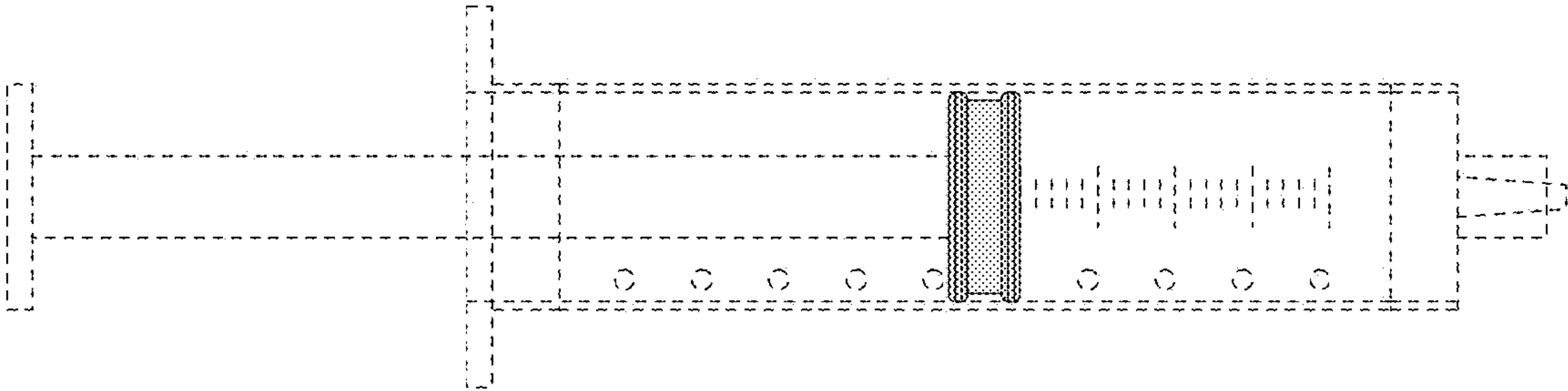


FIG. 13

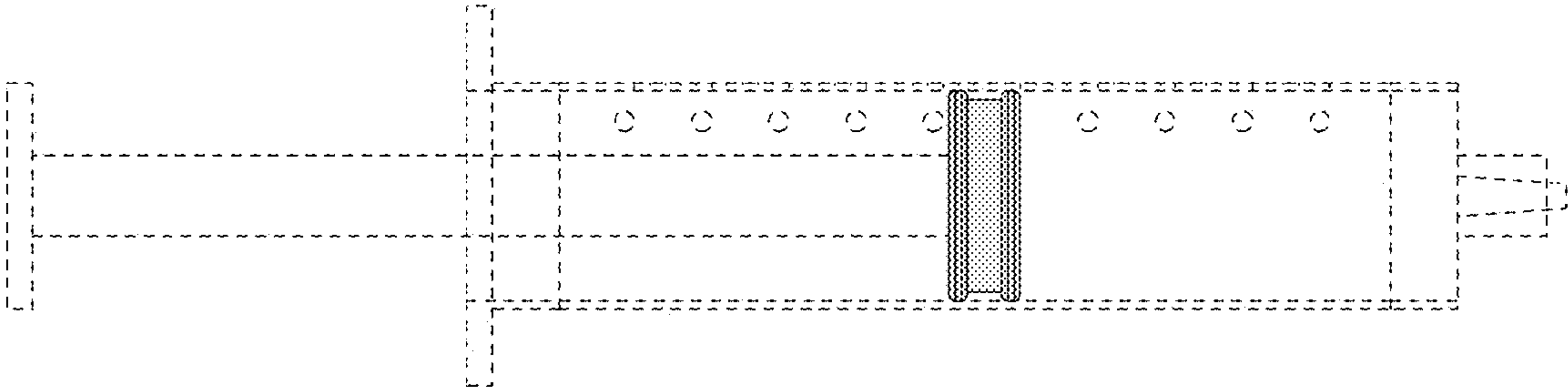


FIG. 14

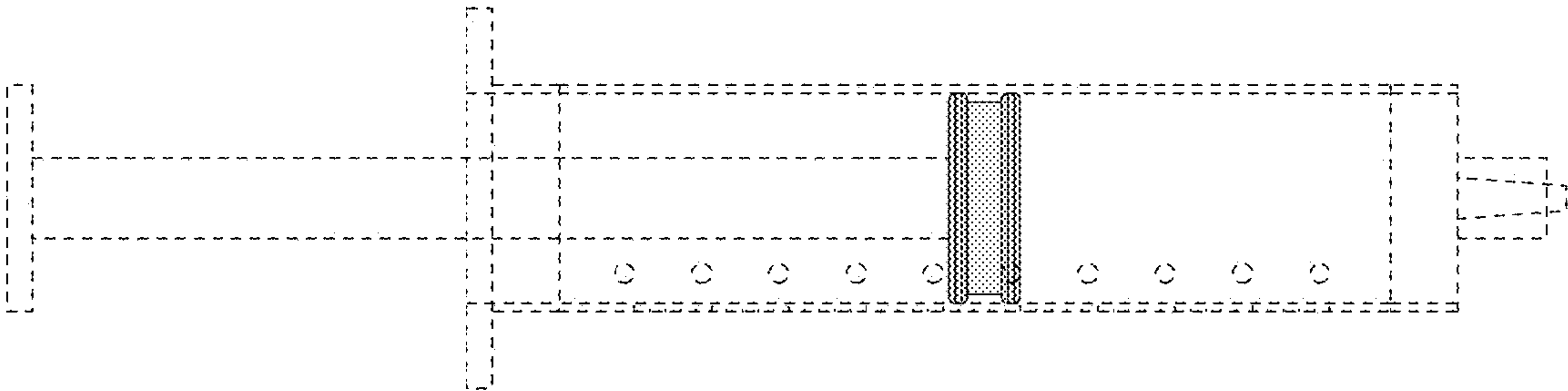


FIG. 15

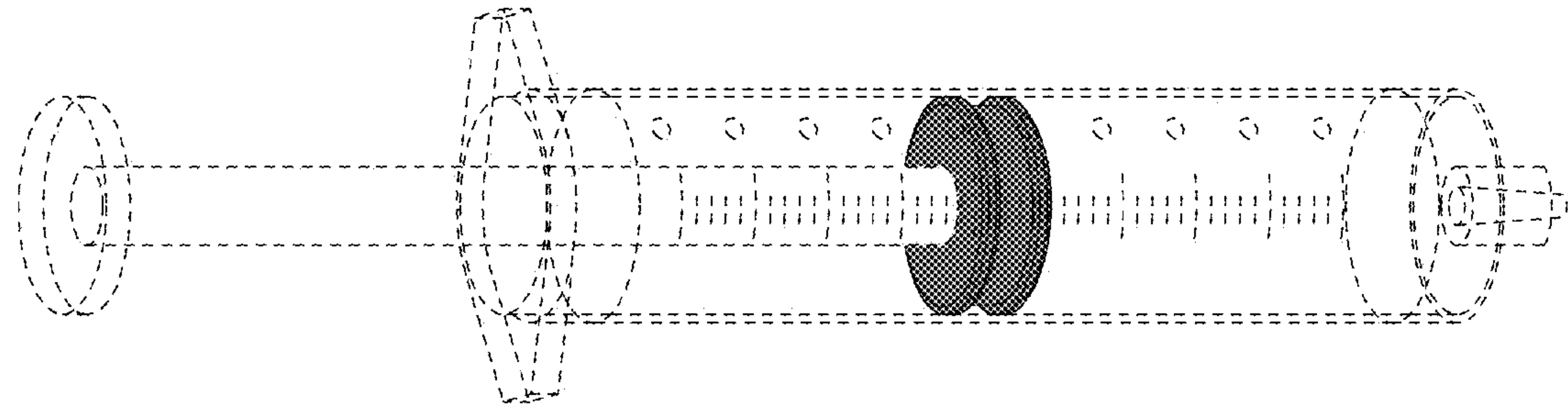


FIG. 16

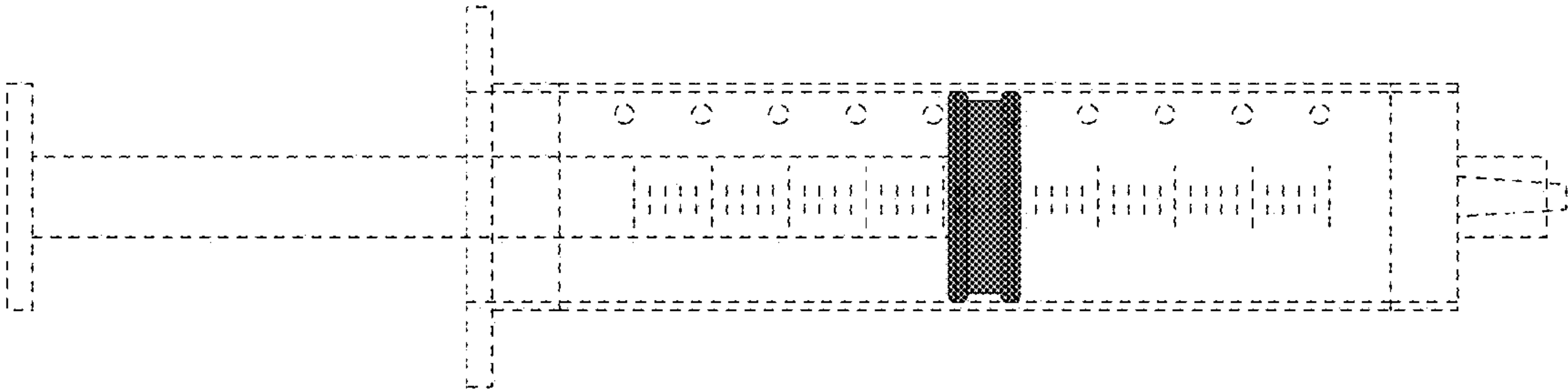


FIG. 17

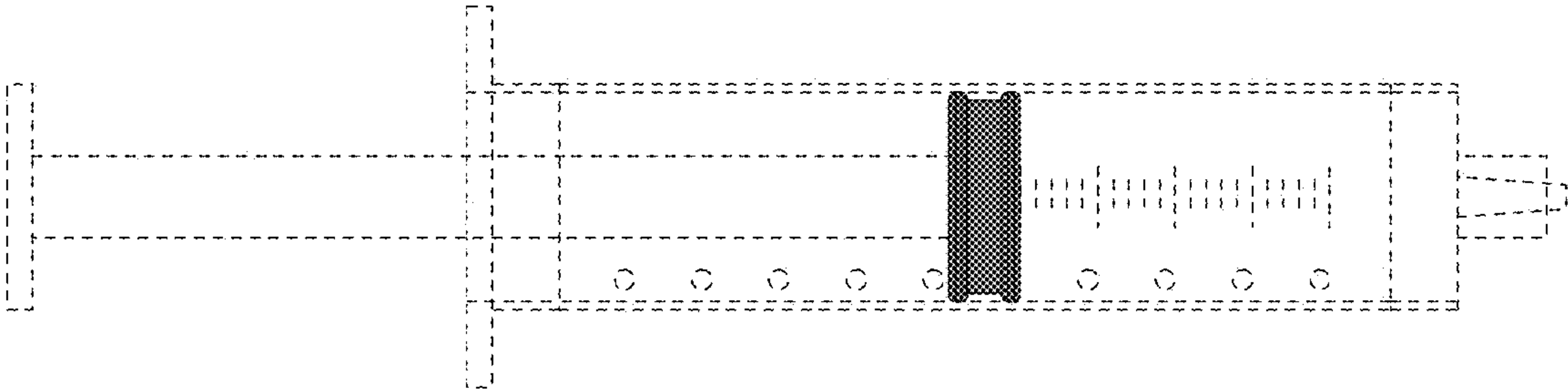


FIG. 18

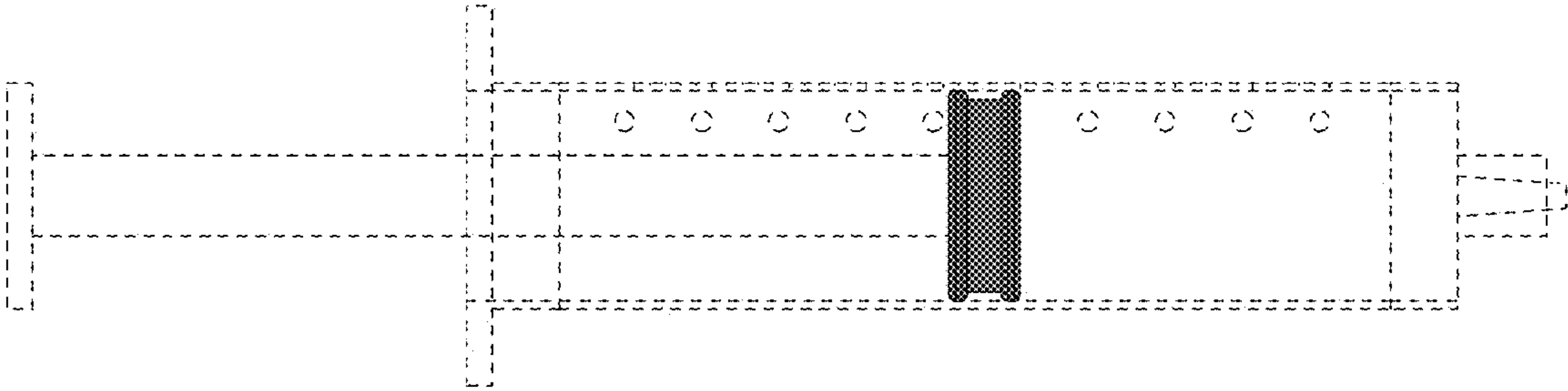


FIG. 19

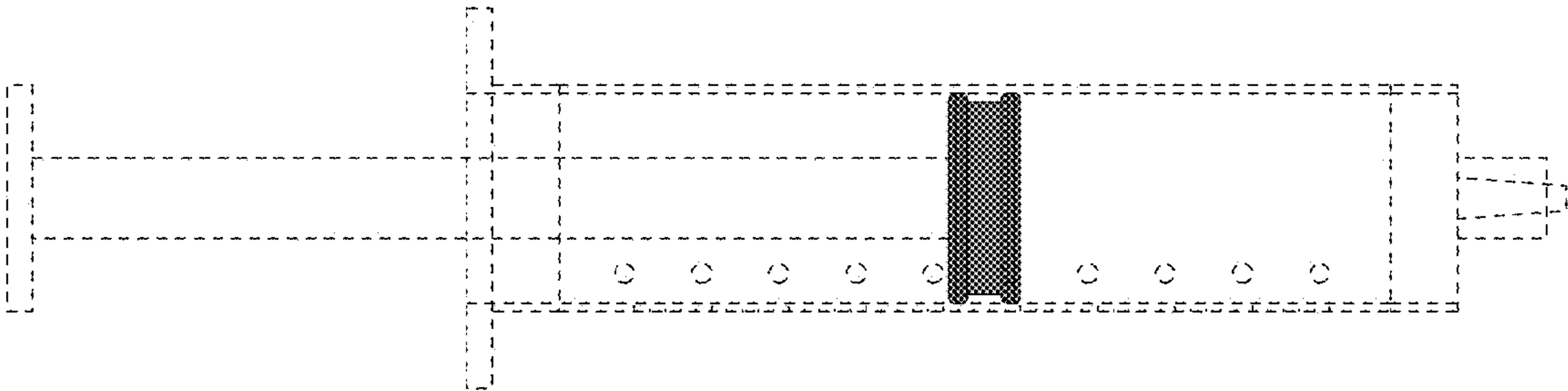


FIG. 20

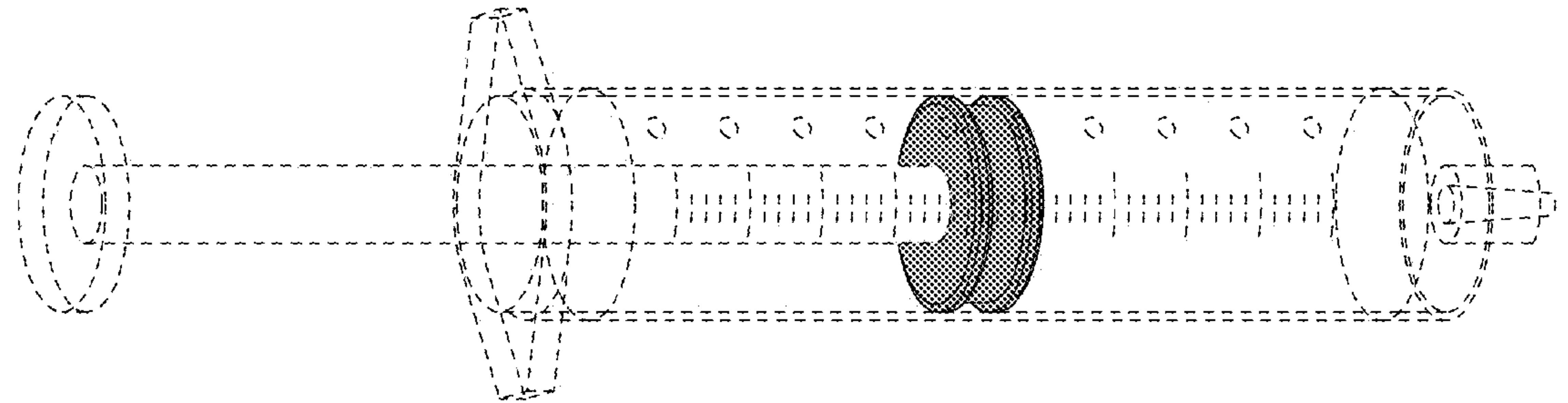


FIG. 21

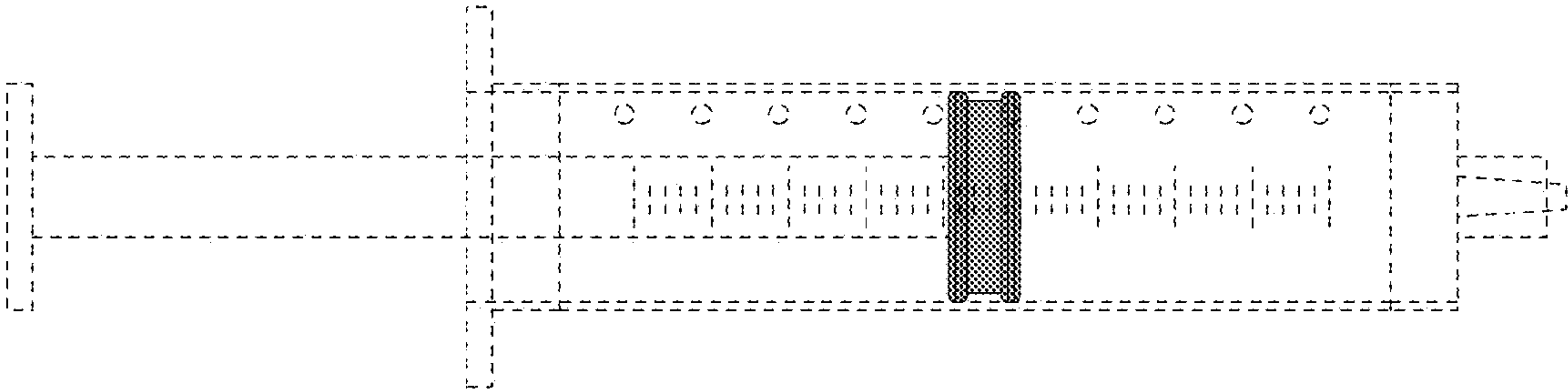


FIG. 22

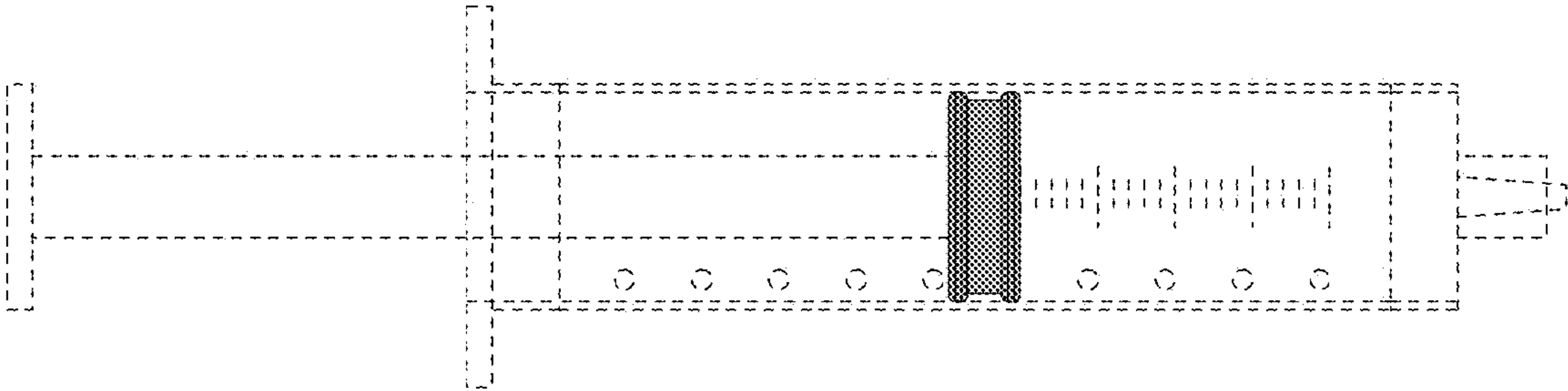


FIG. 23

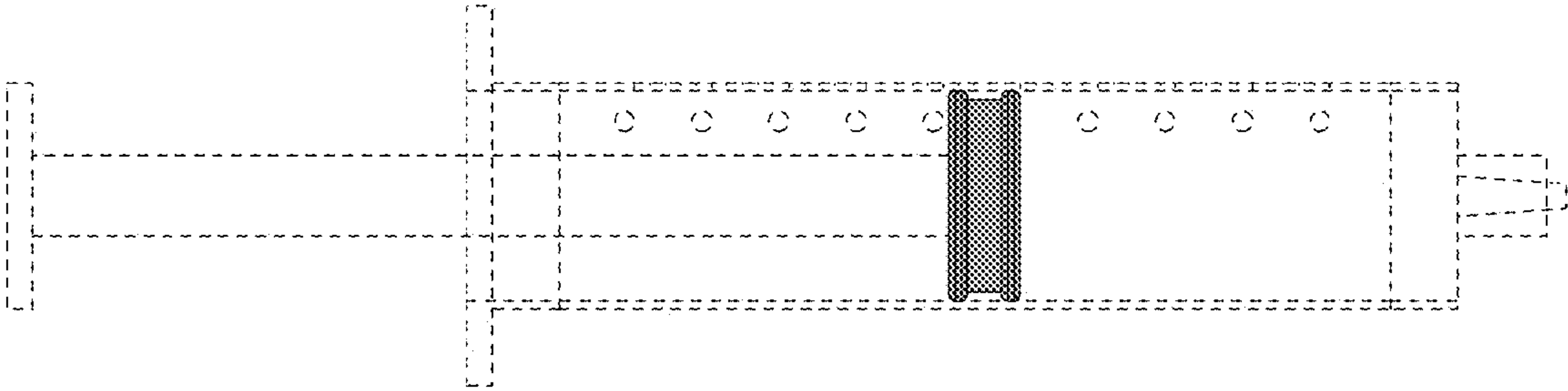


FIG. 24

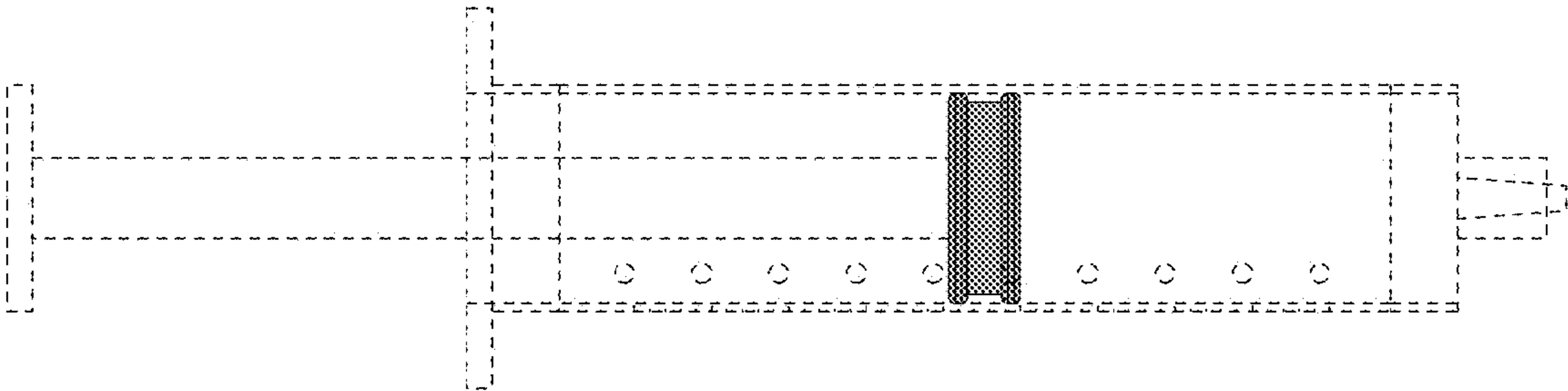


FIG. 25

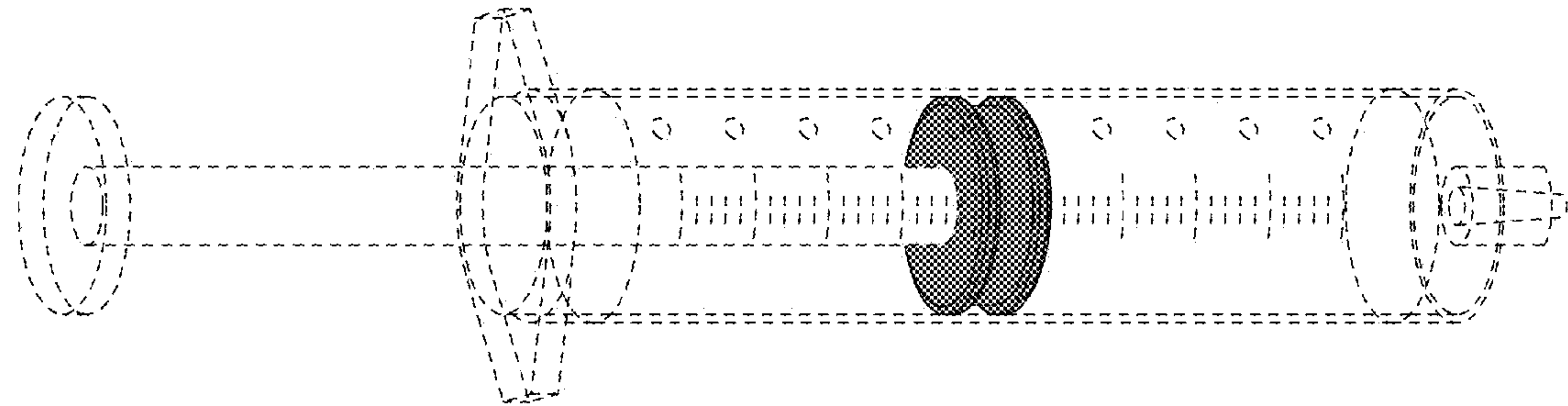


FIG. 26

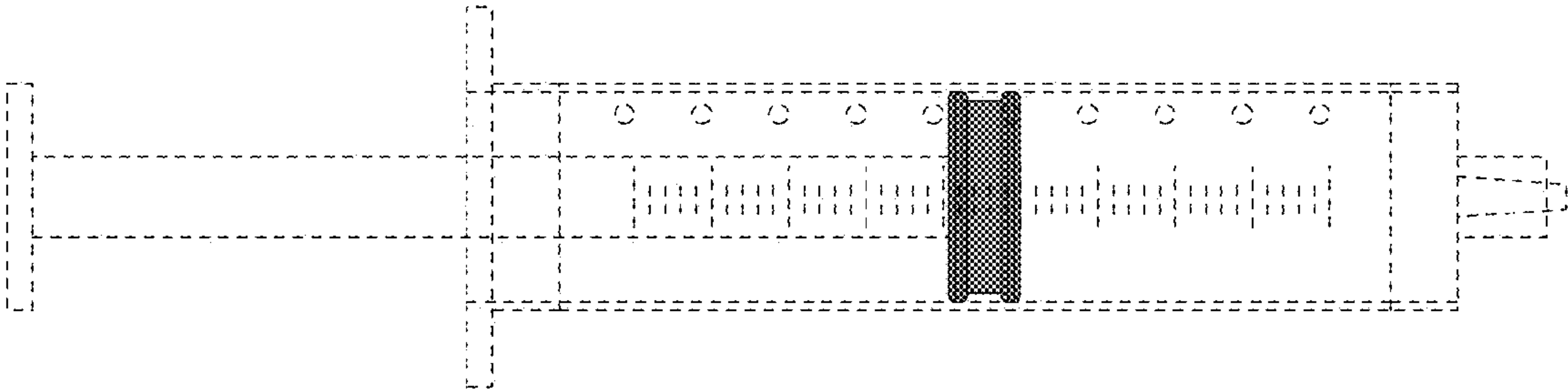


FIG. 27

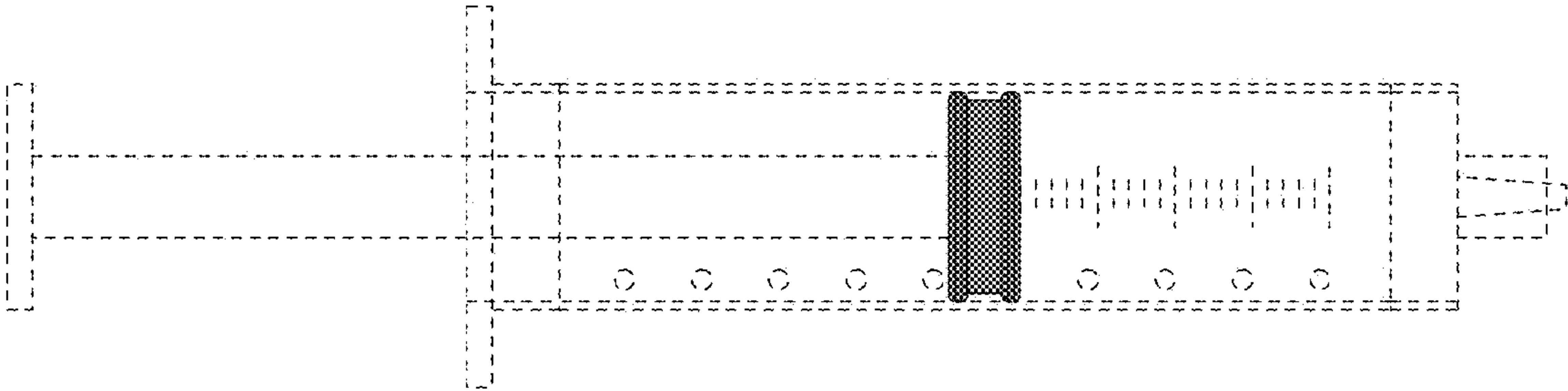


FIG. 28

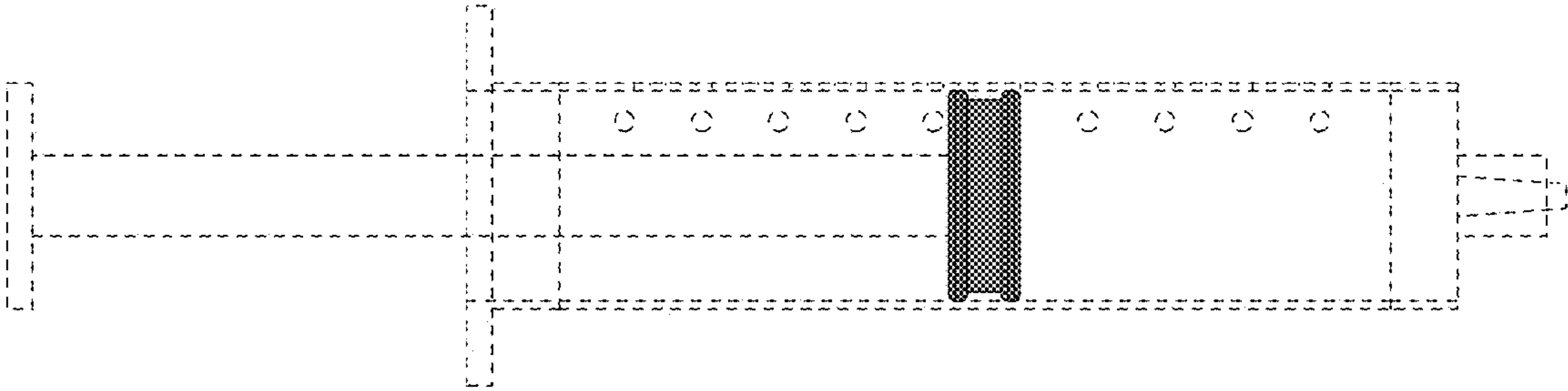


FIG. 29

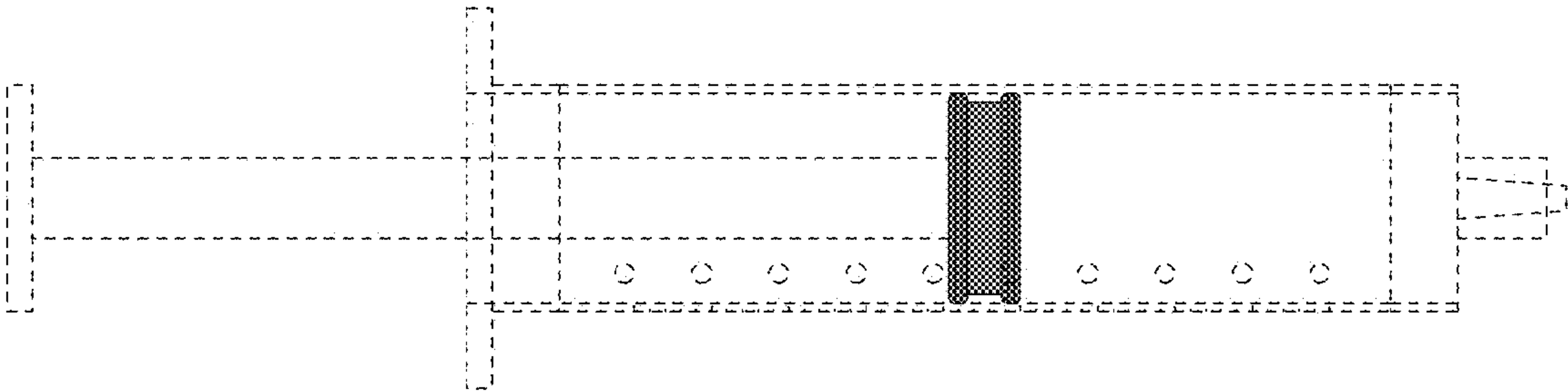


FIG. 30

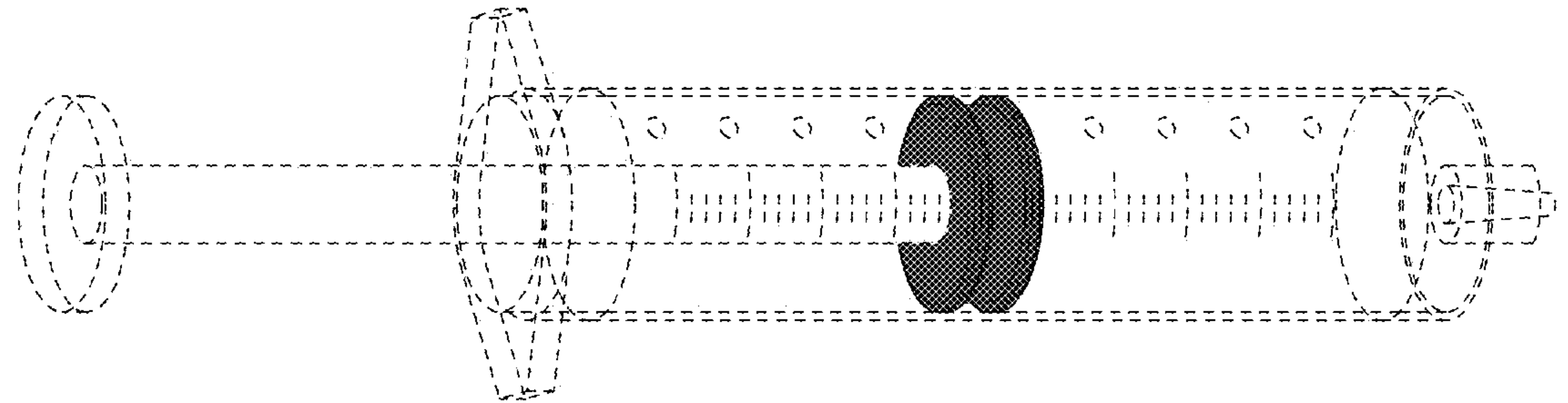


FIG. 31

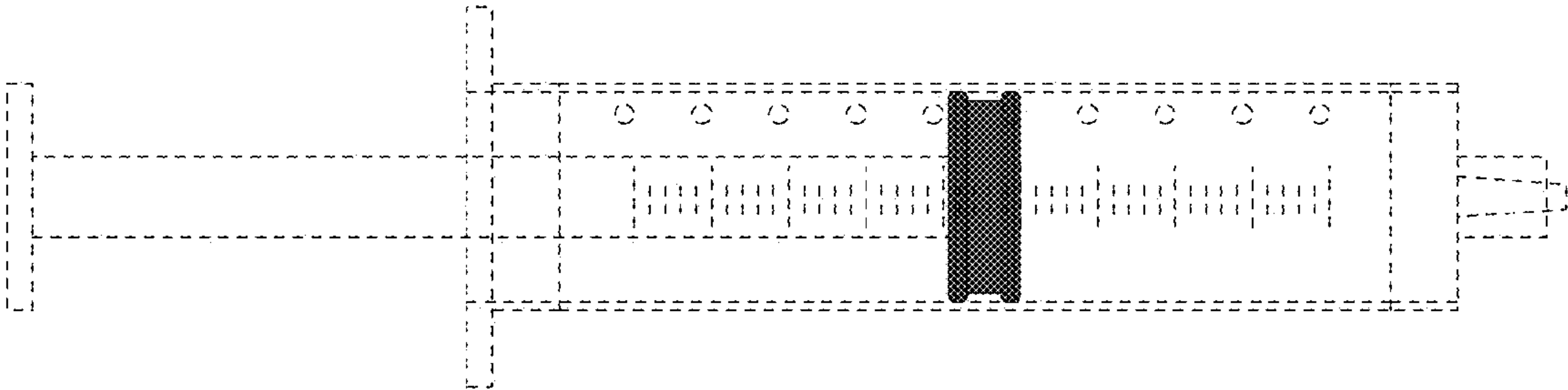


FIG. 32

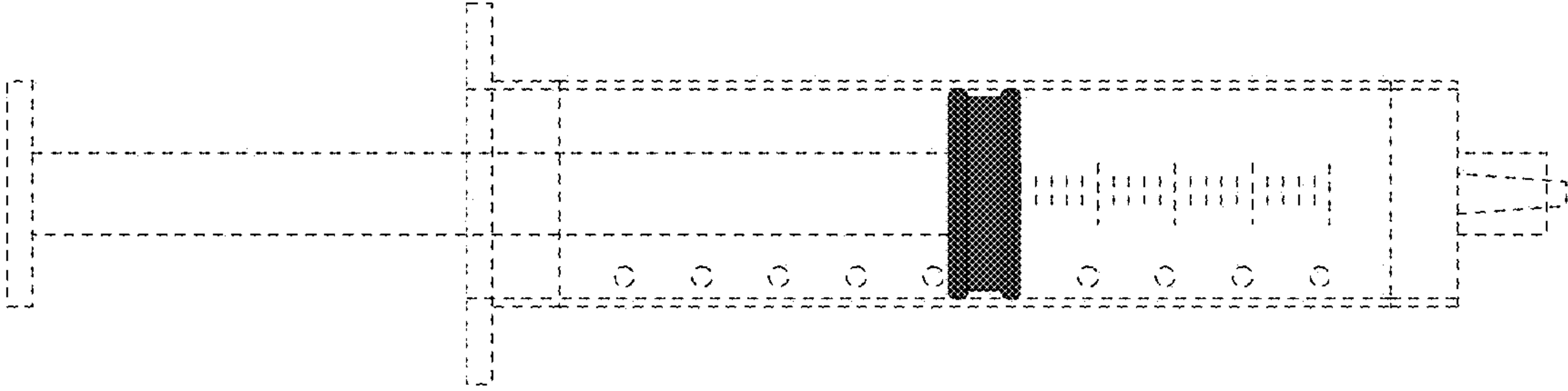


FIG. 33

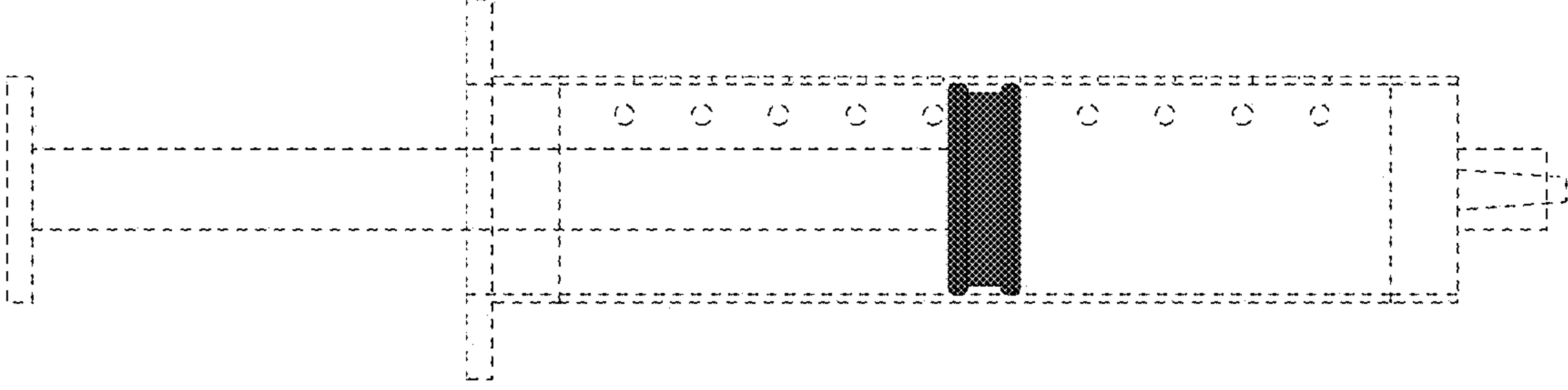


FIG. 34

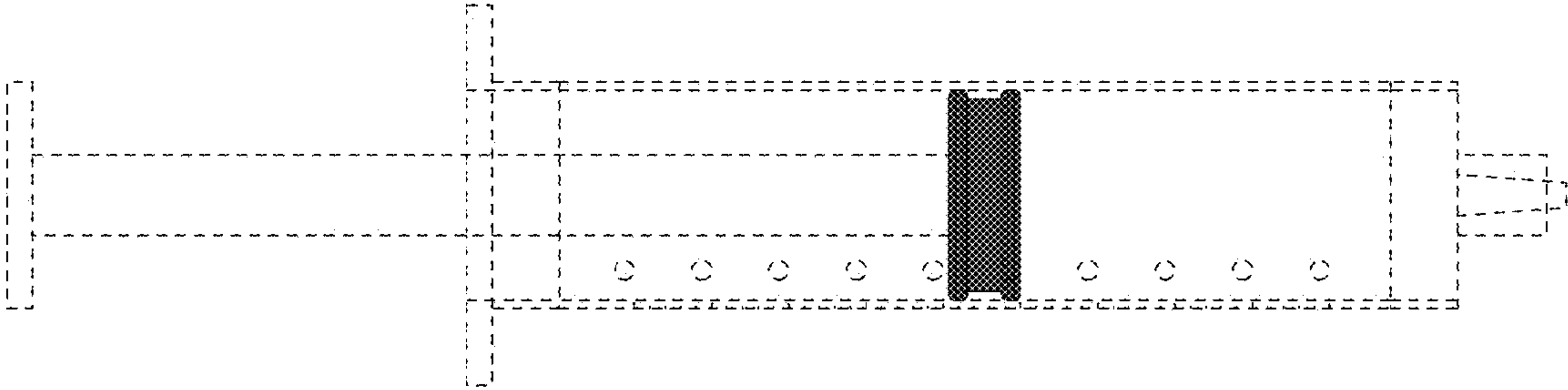


FIG. 35

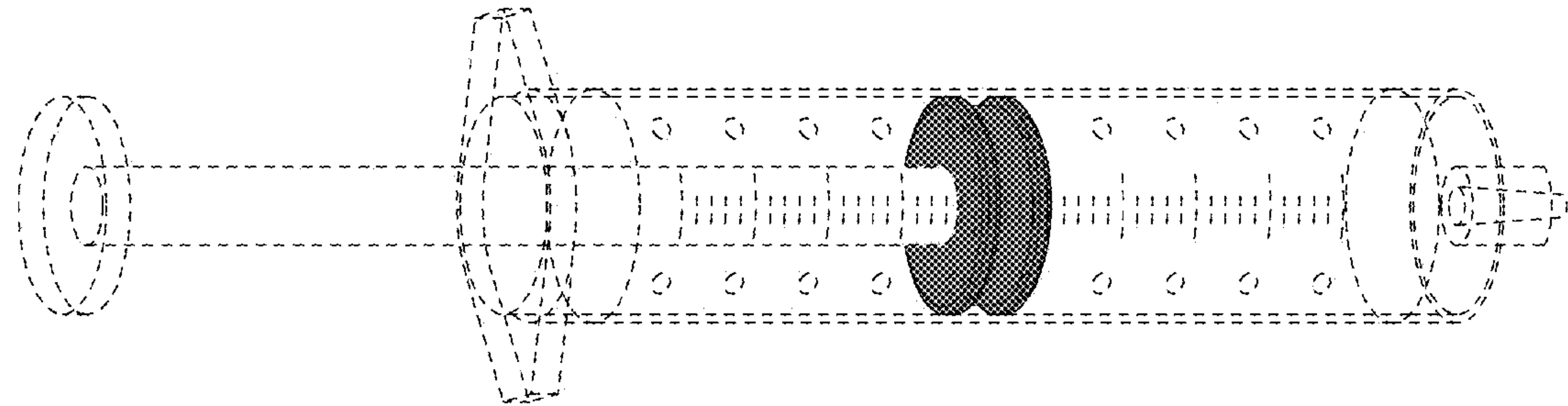


FIG. 36

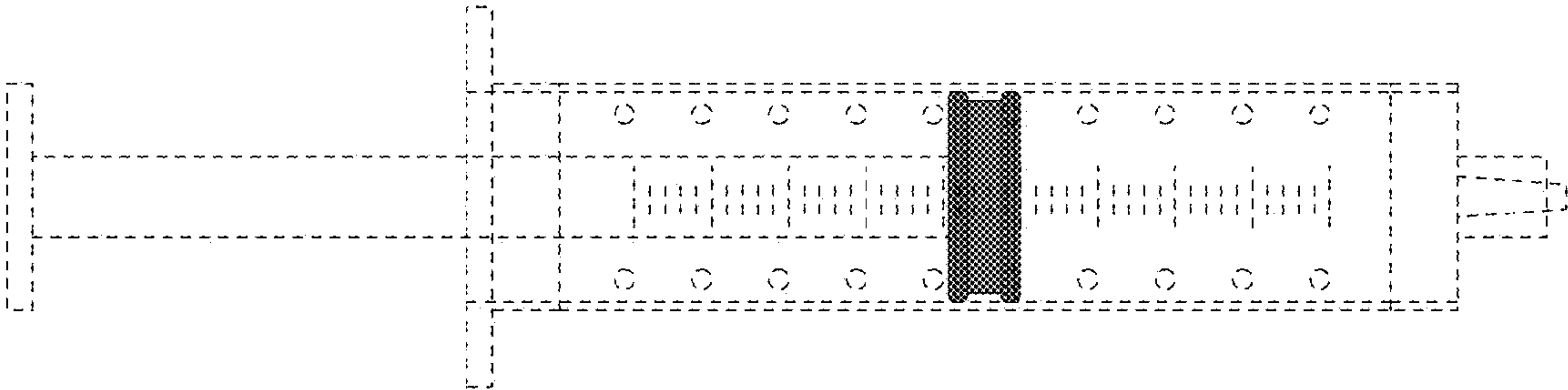


FIG. 37

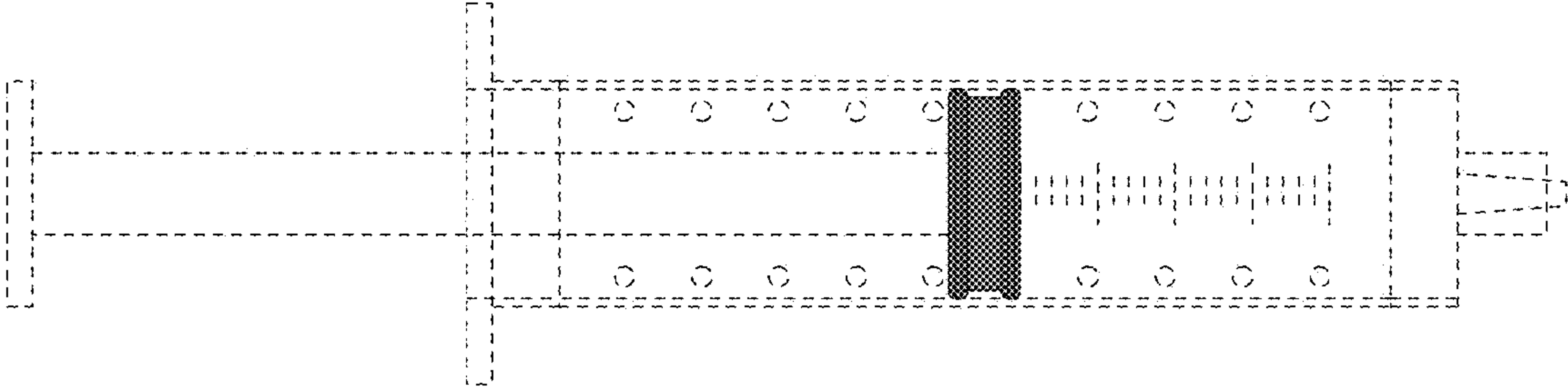


FIG. 38

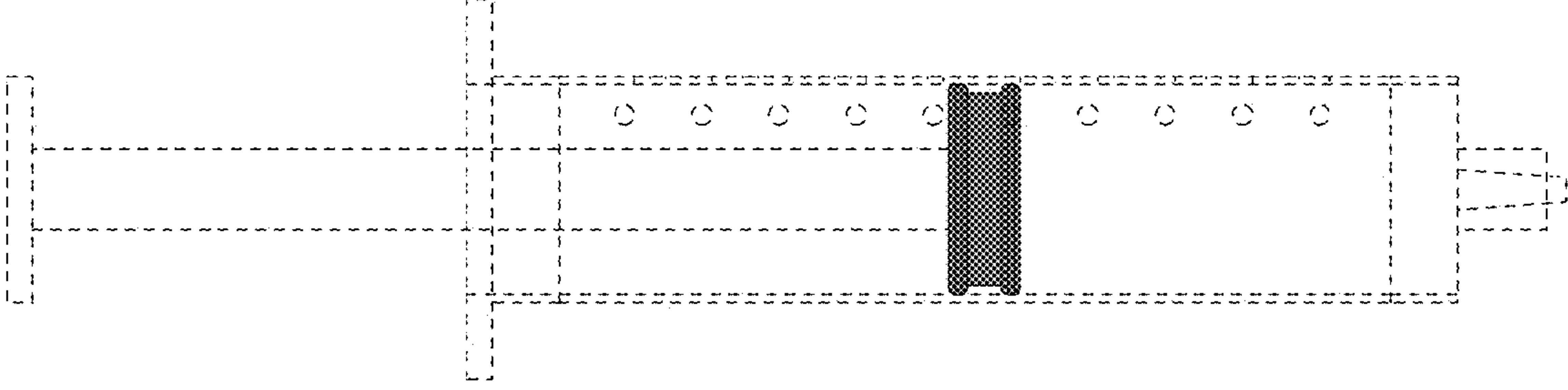


FIG. 39

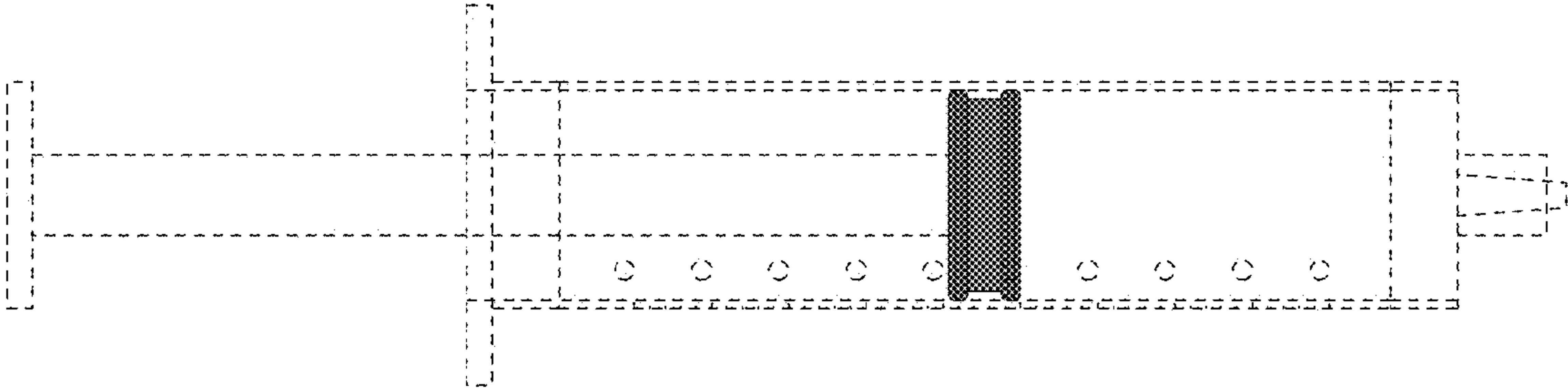


FIG. 40

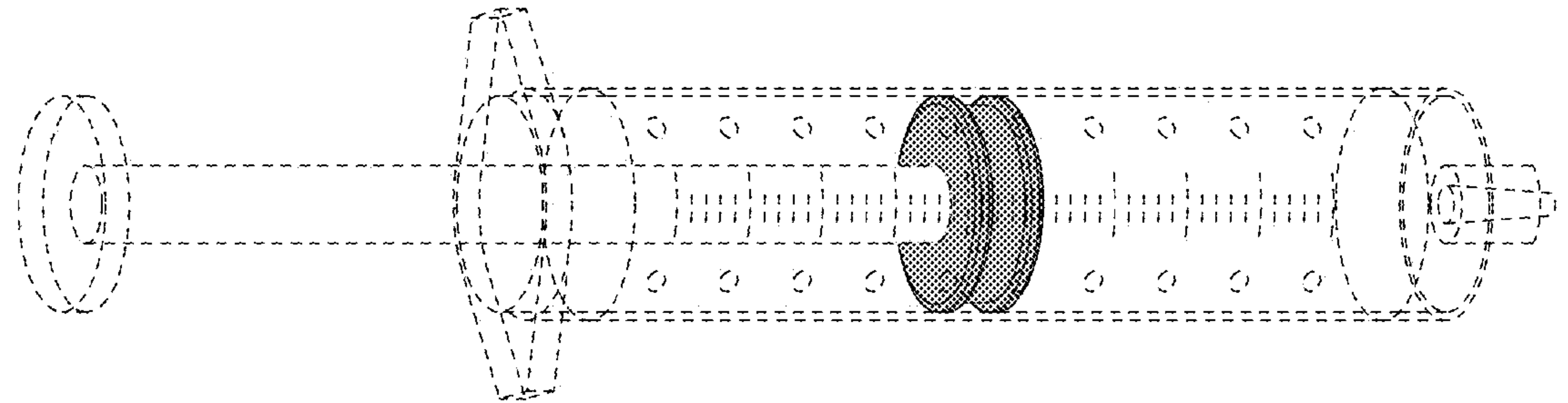


FIG. 41

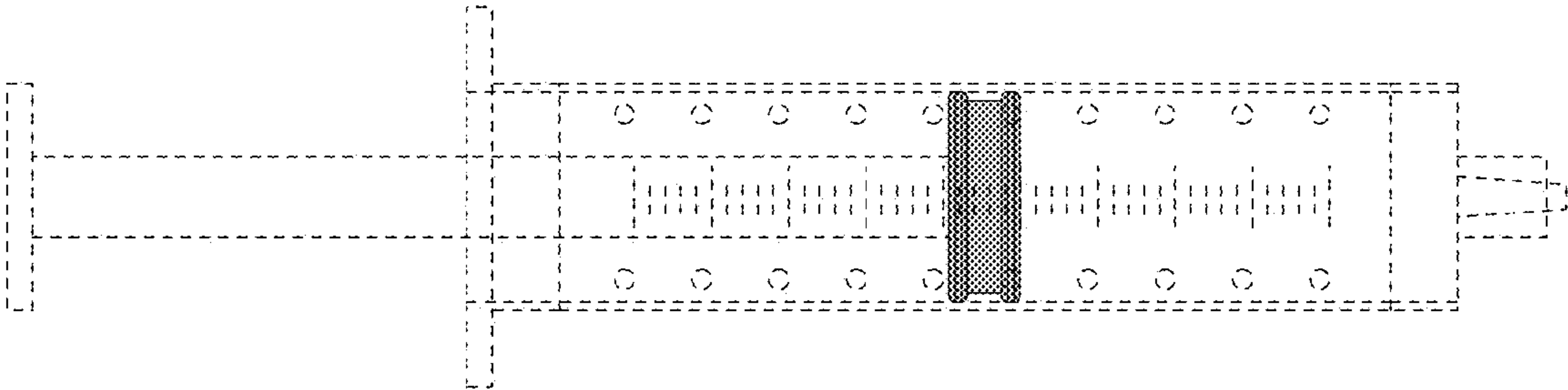


FIG. 42

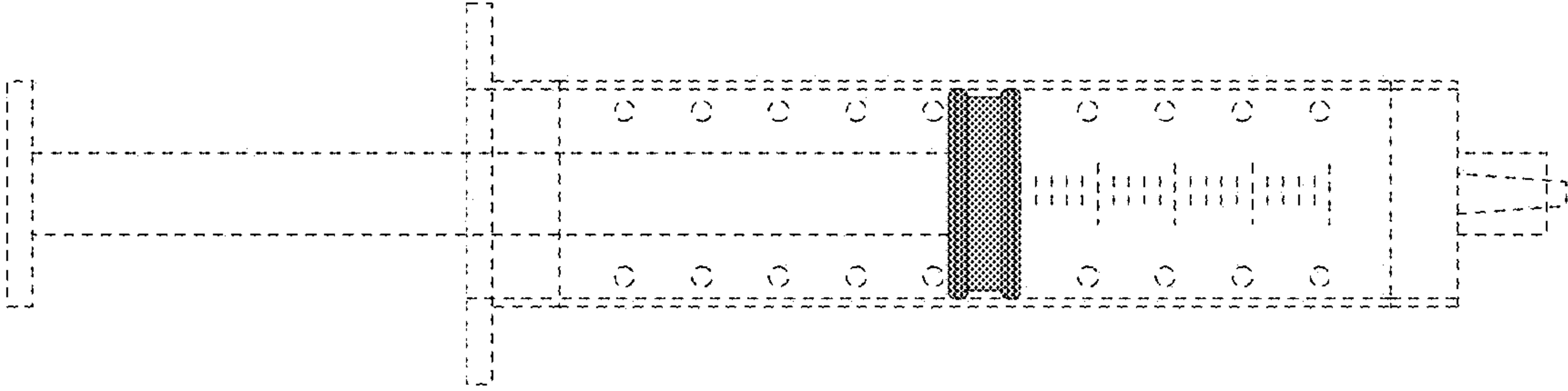


FIG. 43

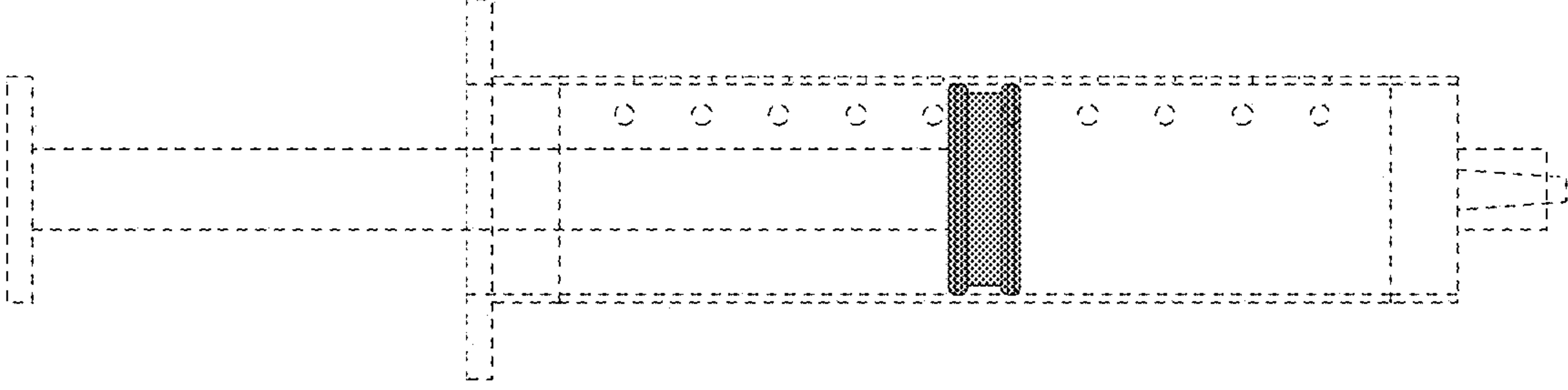


FIG. 44

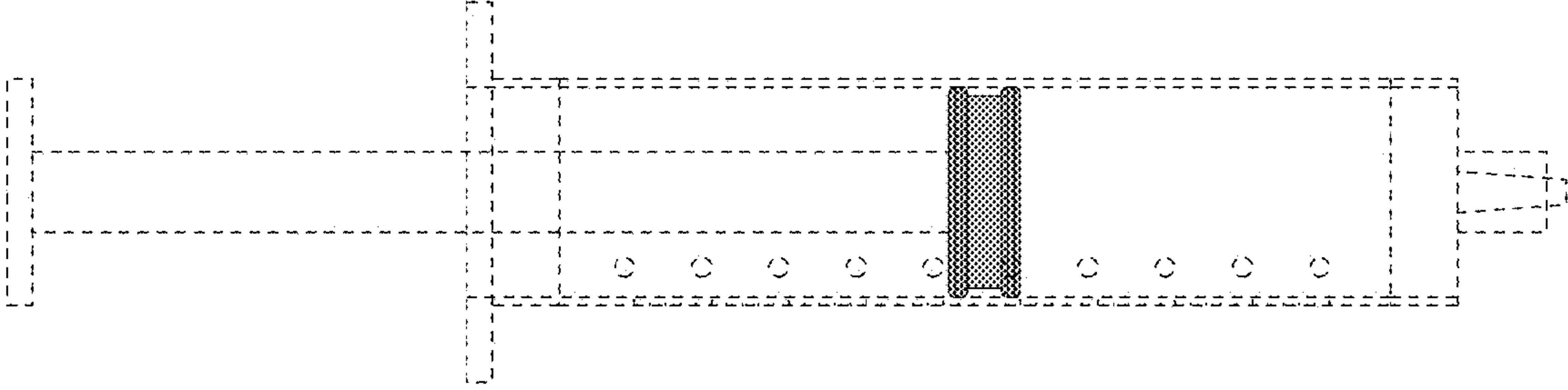


FIG. 45

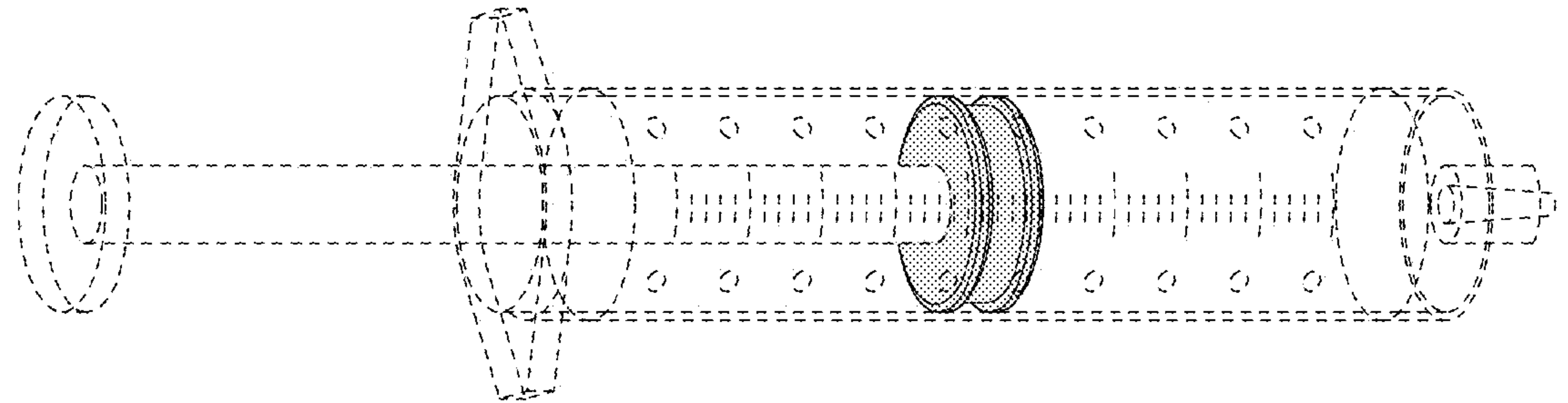


FIG. 46

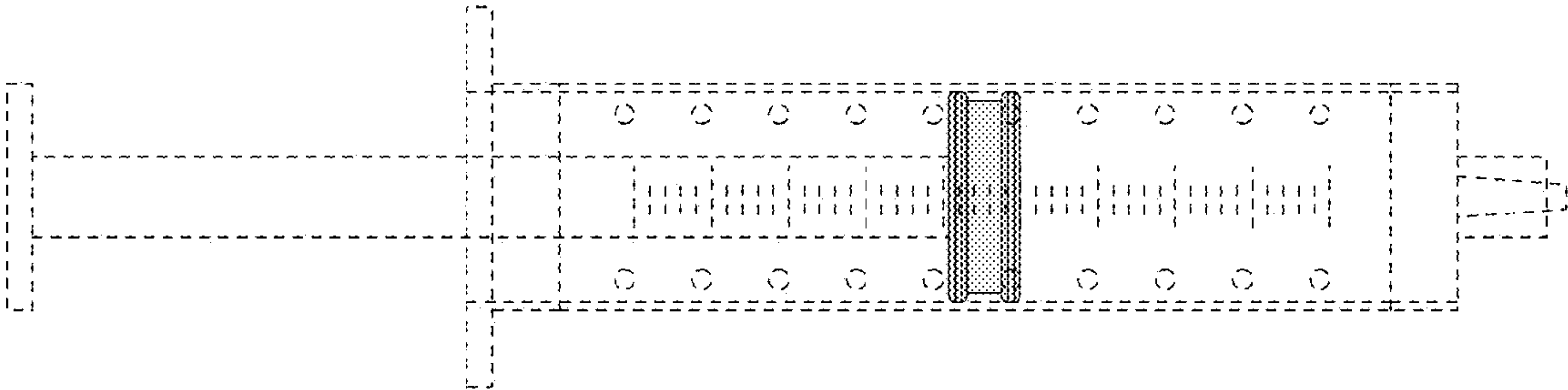


FIG. 47

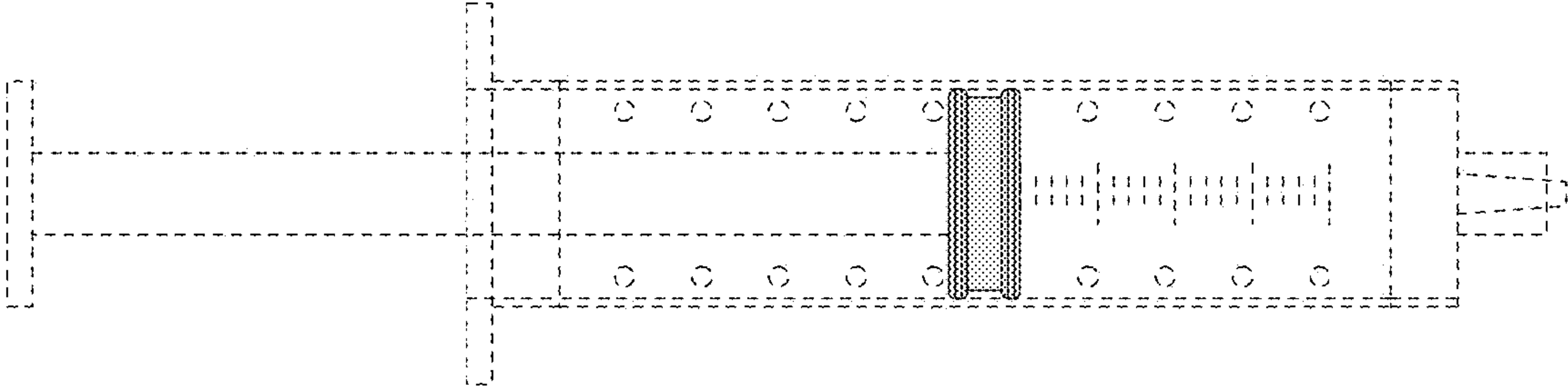


FIG. 48

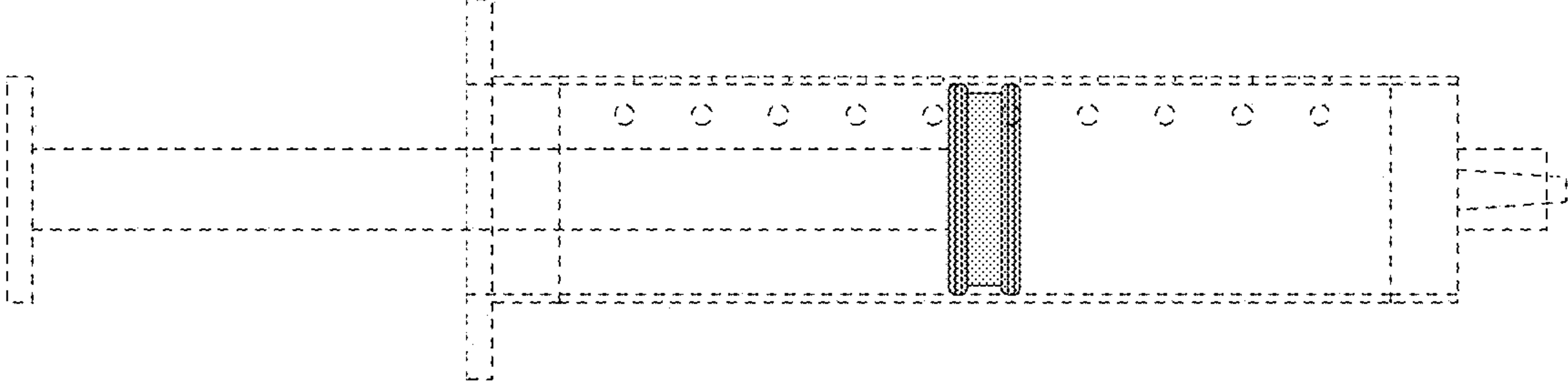


FIG. 49

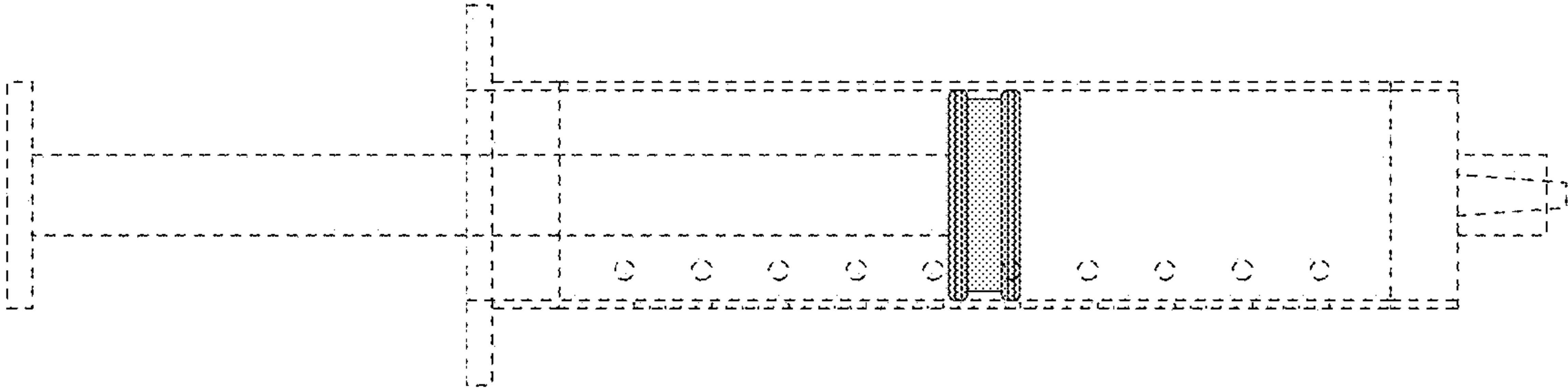


FIG. 50

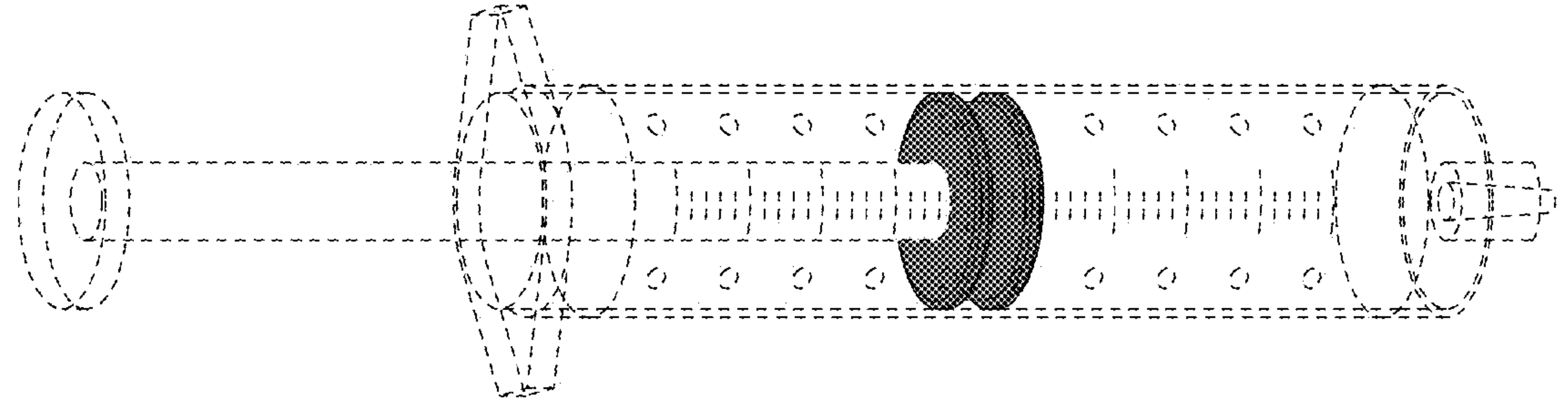


FIG. 51

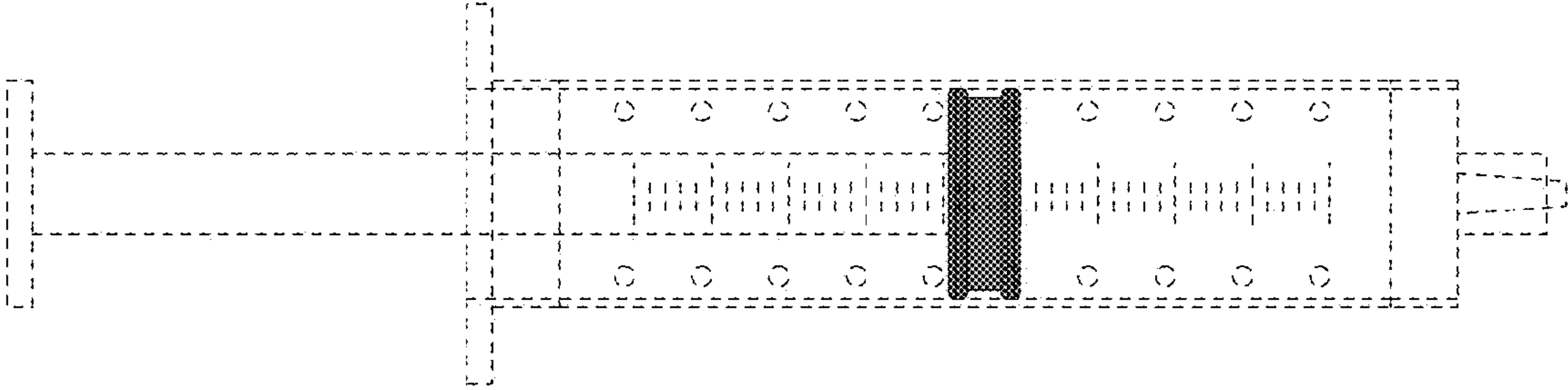


FIG. 52

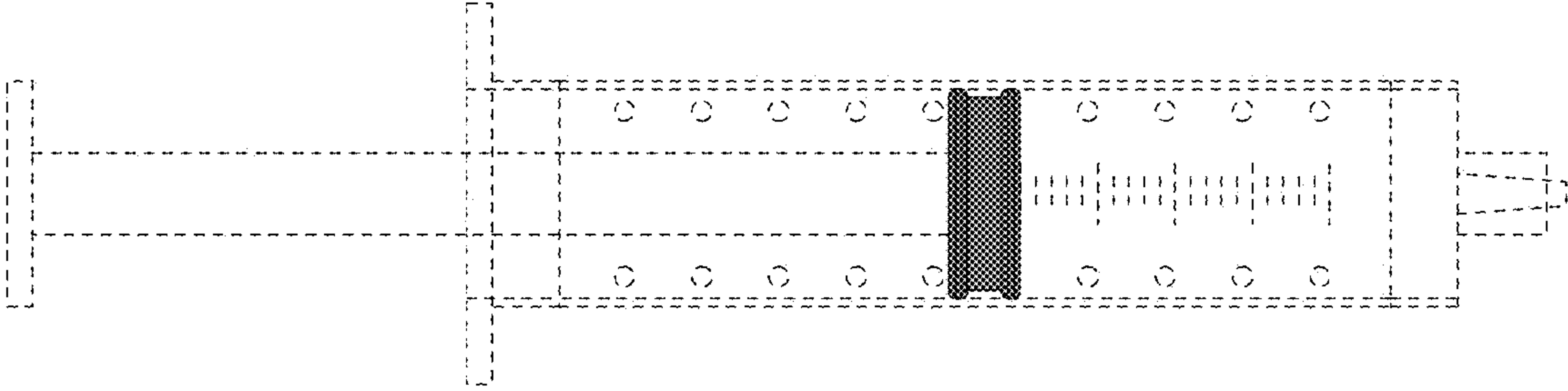


FIG. 53

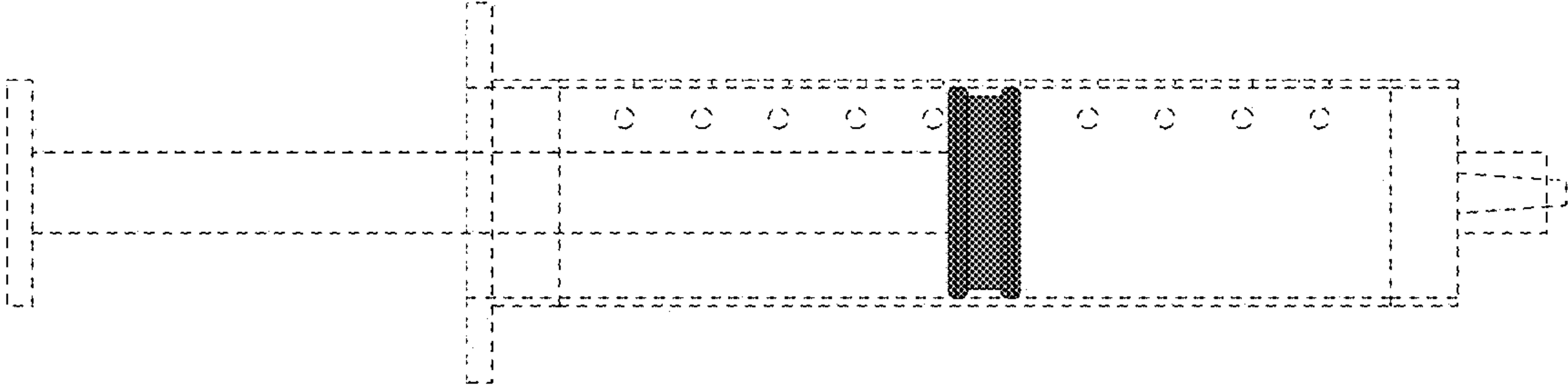


FIG. 54

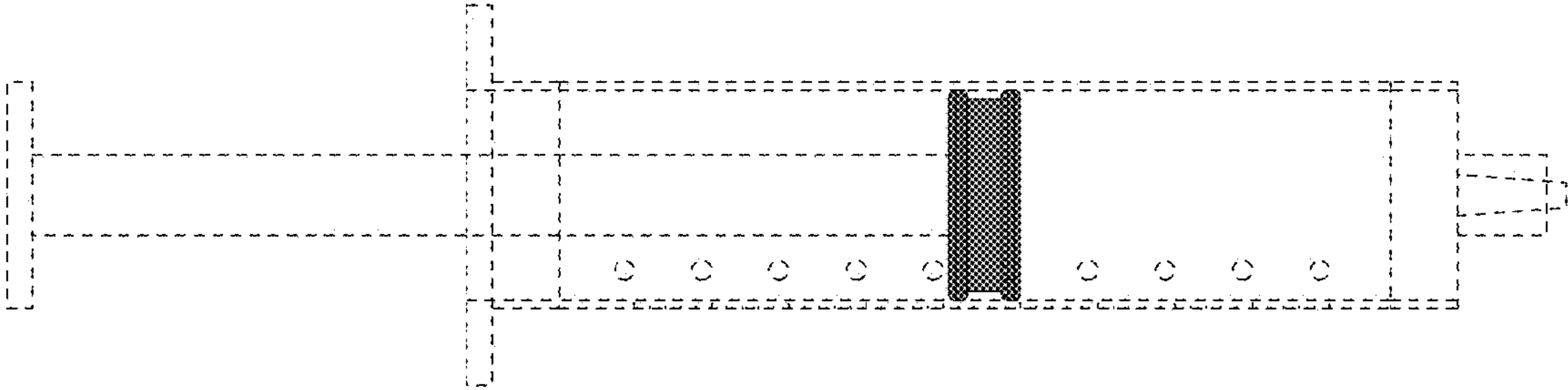


FIG. 55

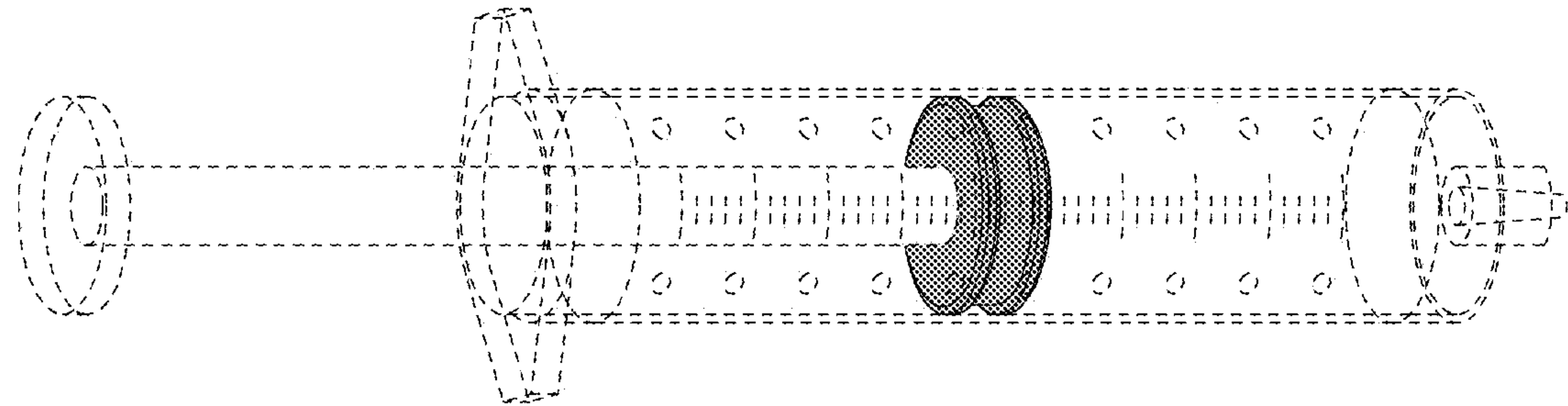


FIG. 56

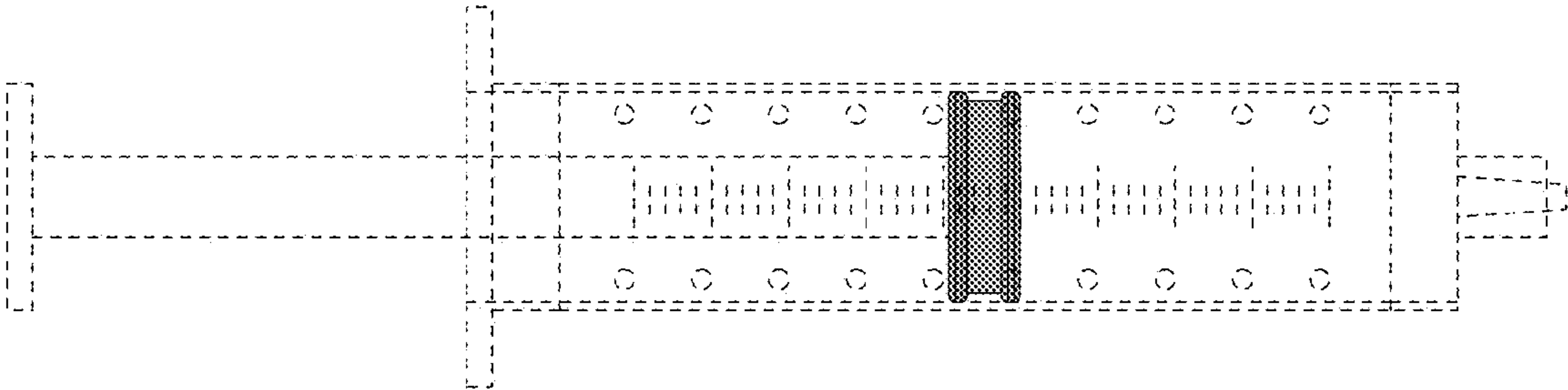


FIG. 57

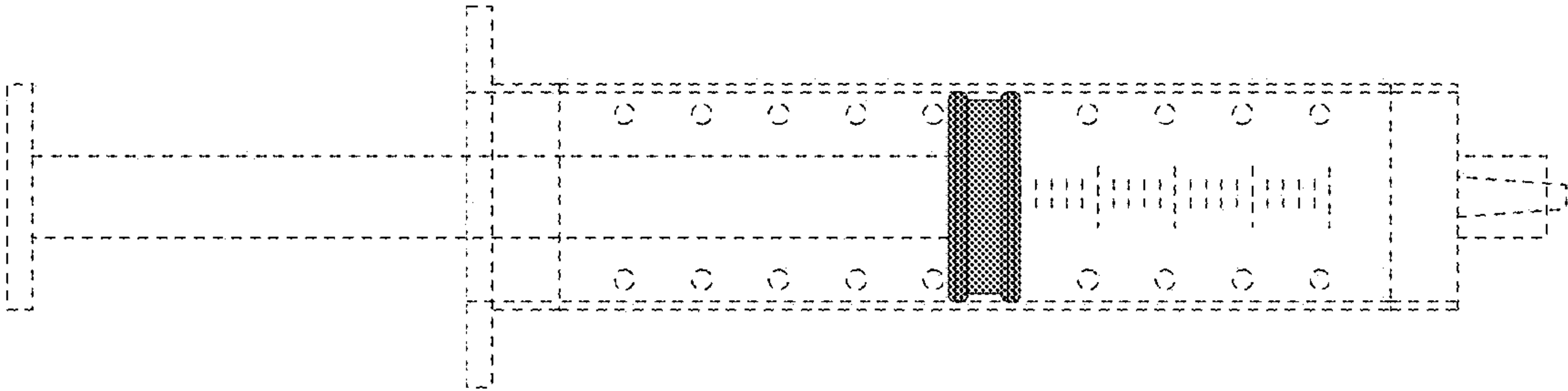


FIG. 58

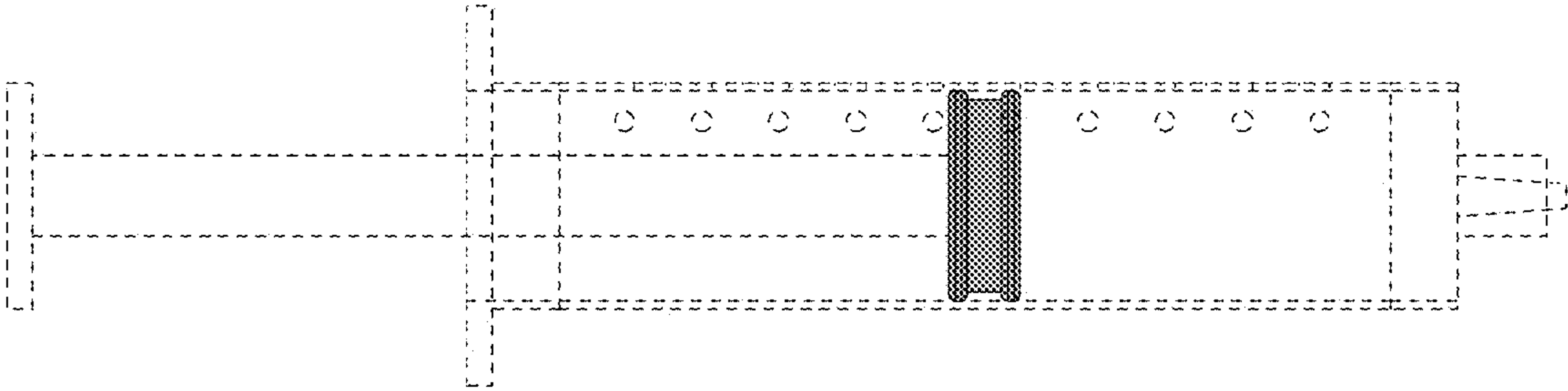


FIG. 59

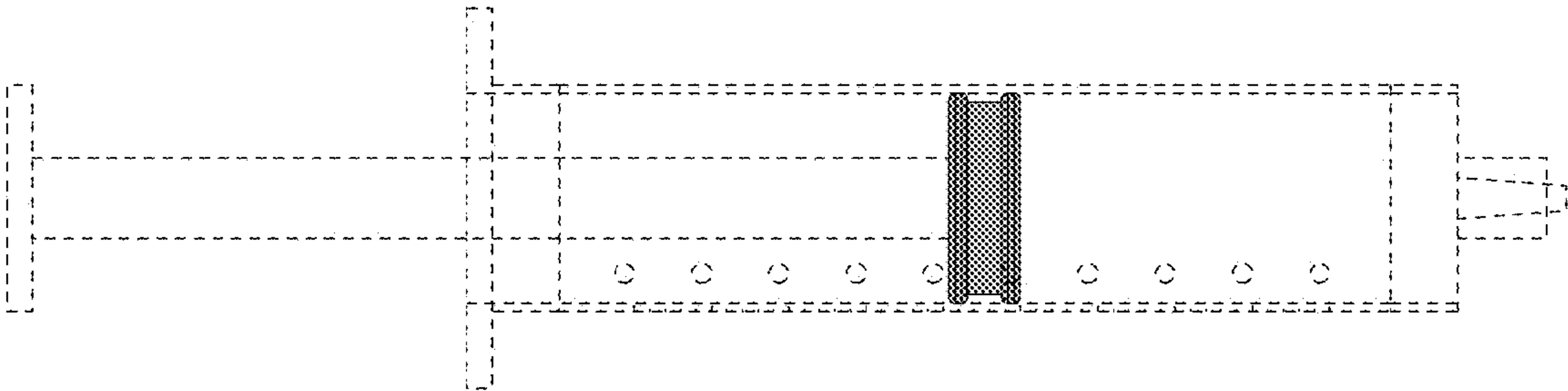


FIG. 60

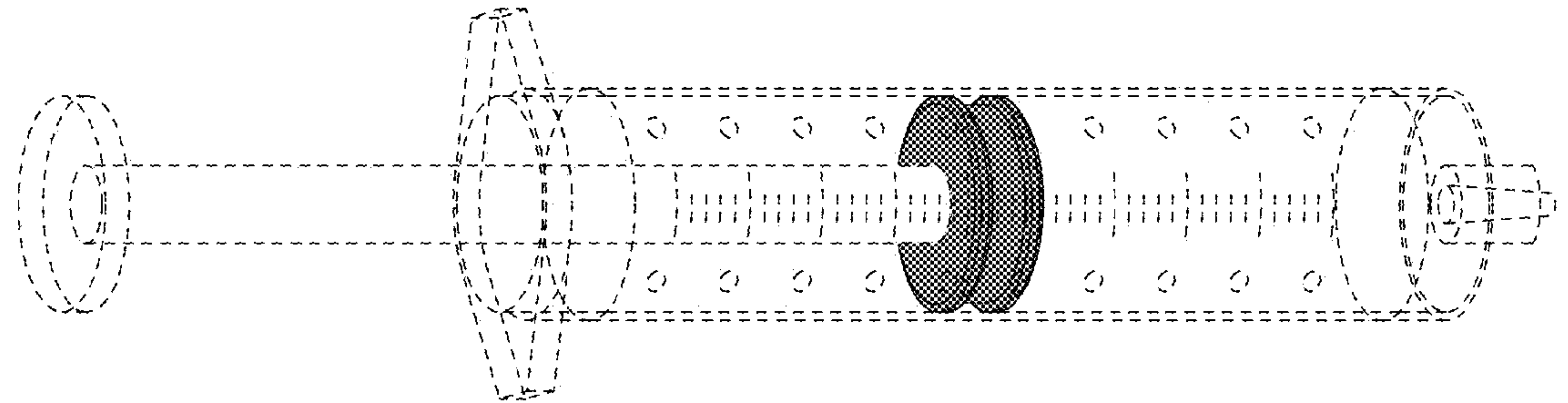


FIG. 61

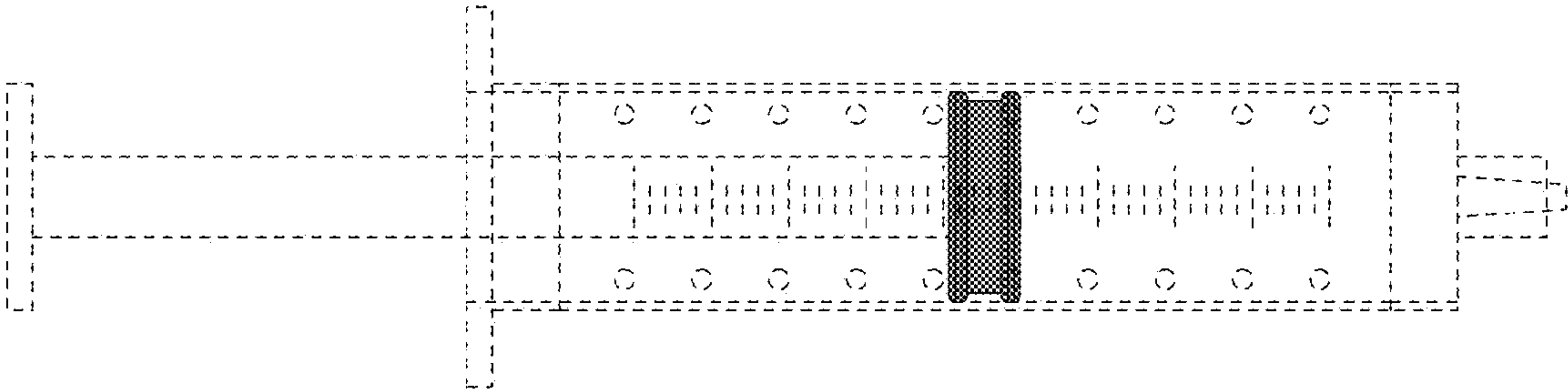


FIG. 62

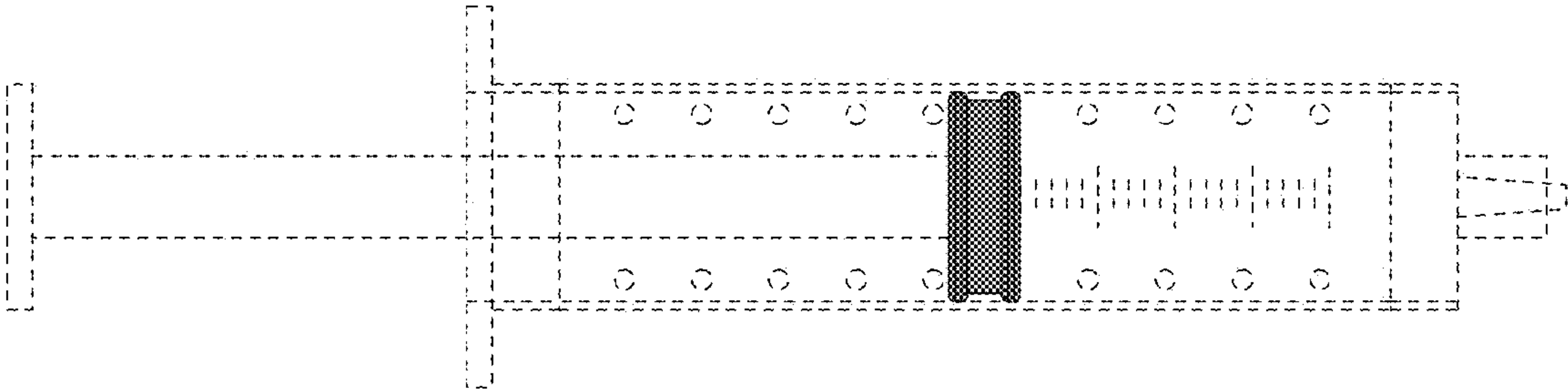


FIG. 63

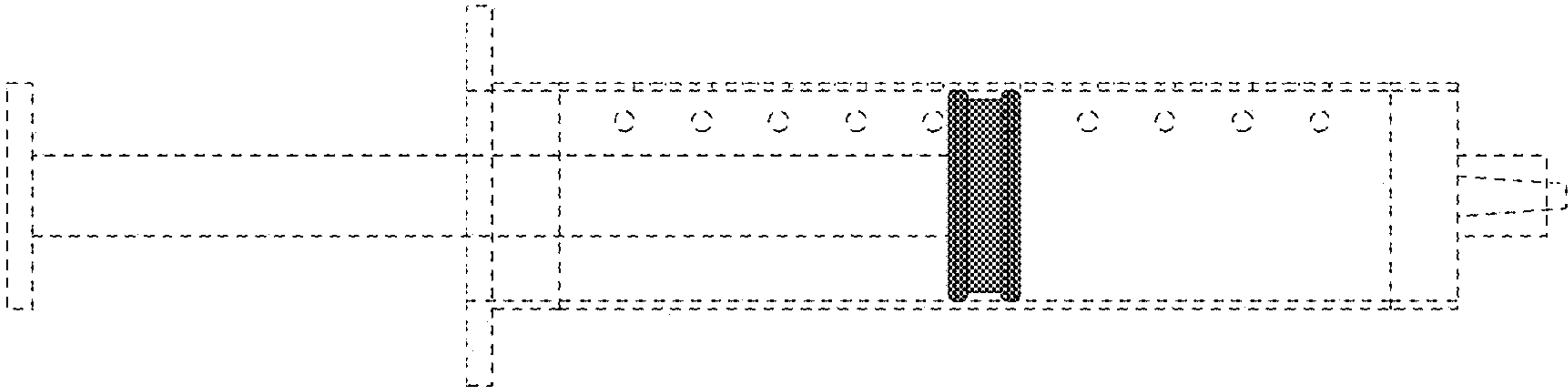


FIG. 64

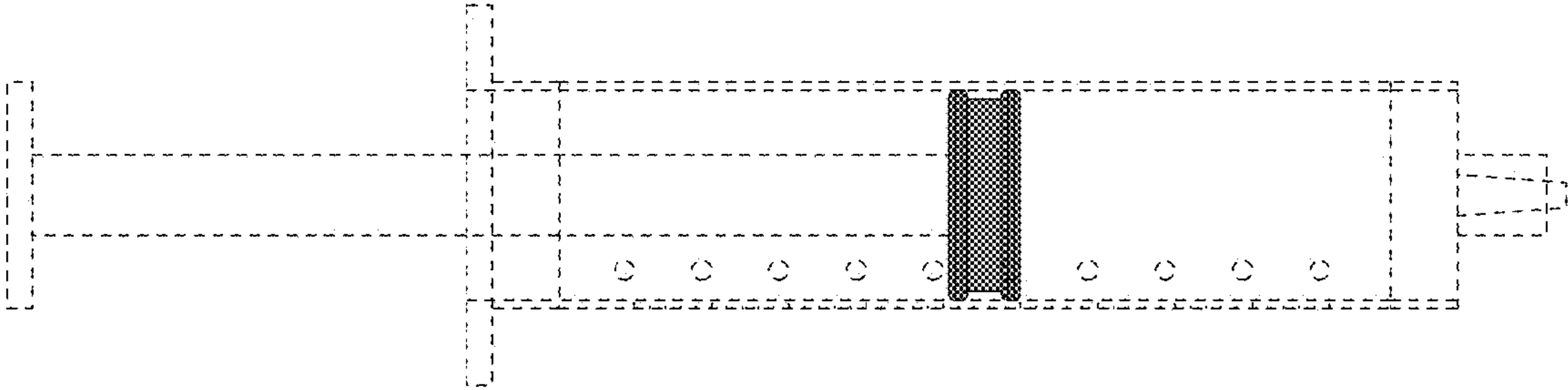


FIG. 65

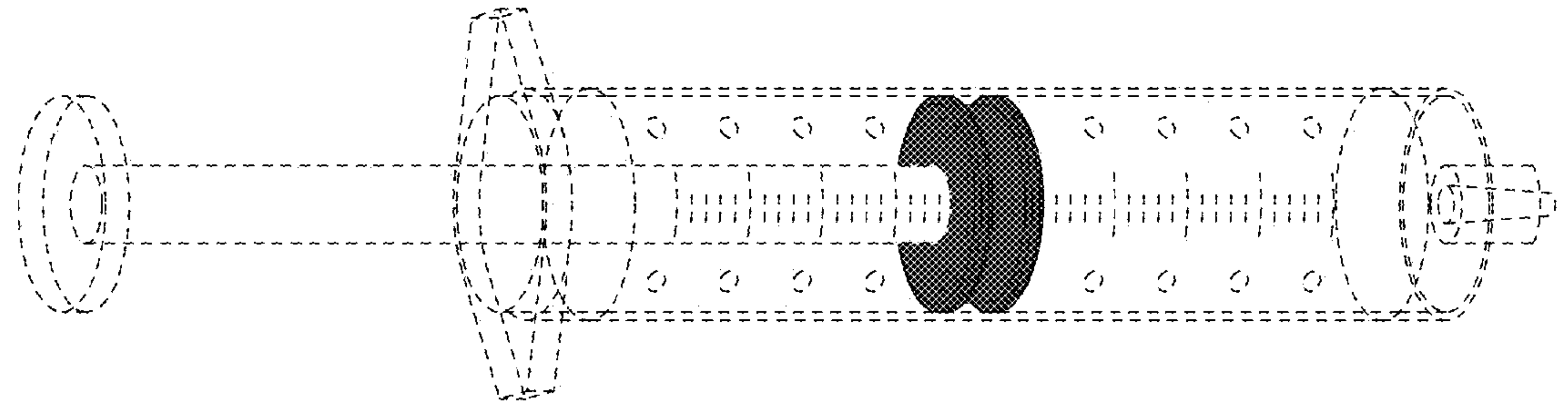


FIG. 66

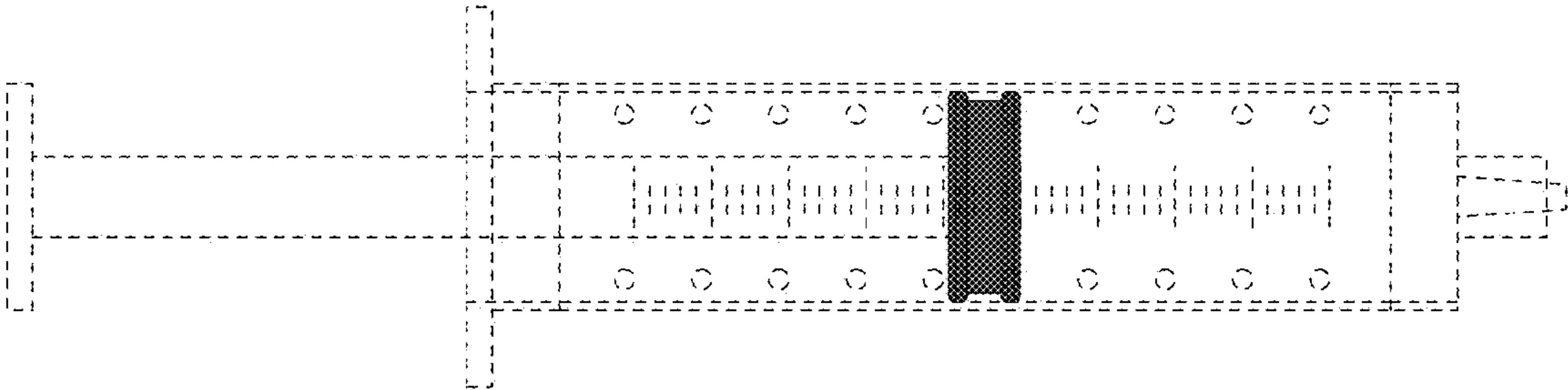


FIG. 67

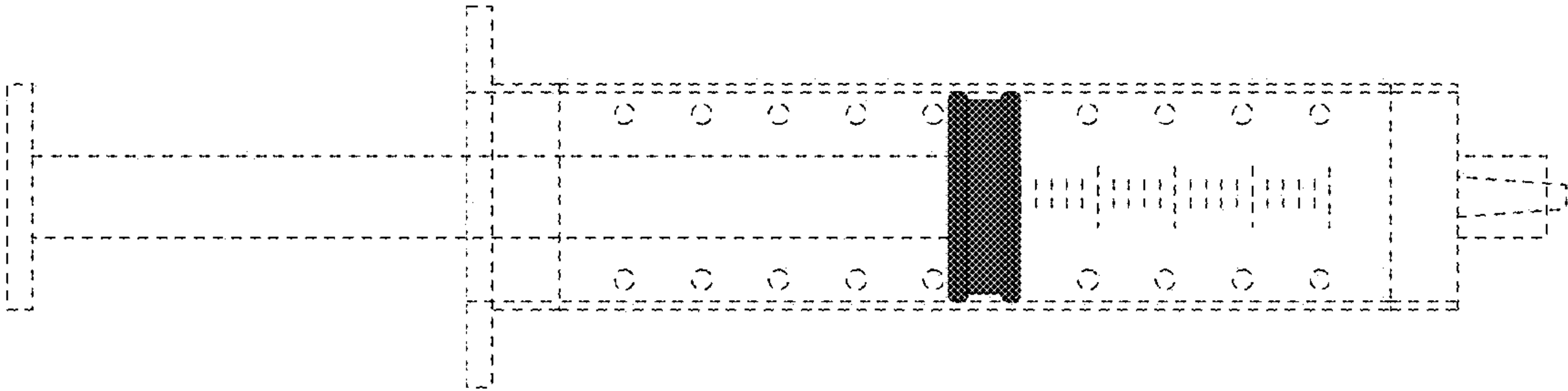


FIG. 68

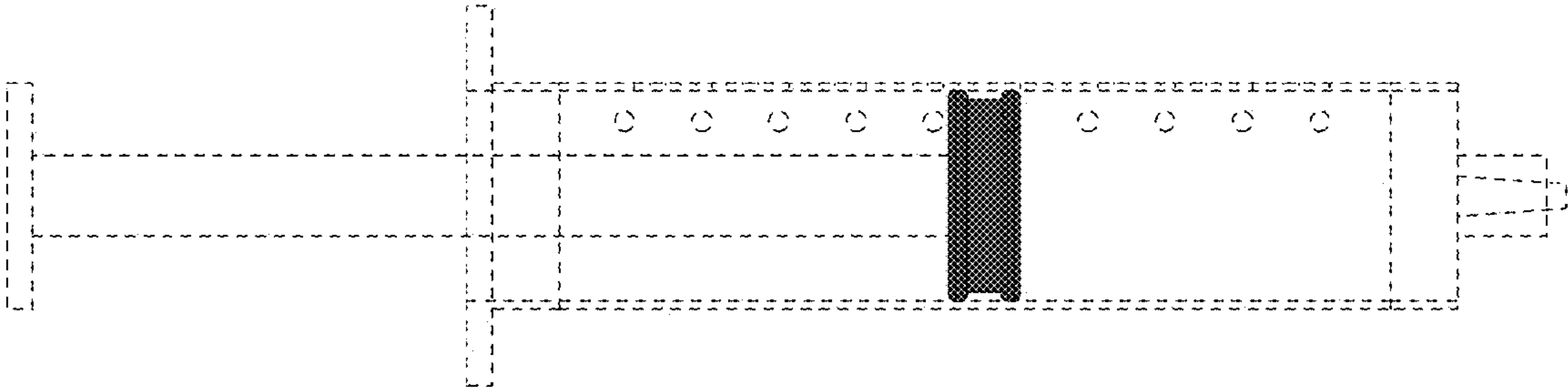


FIG. 69

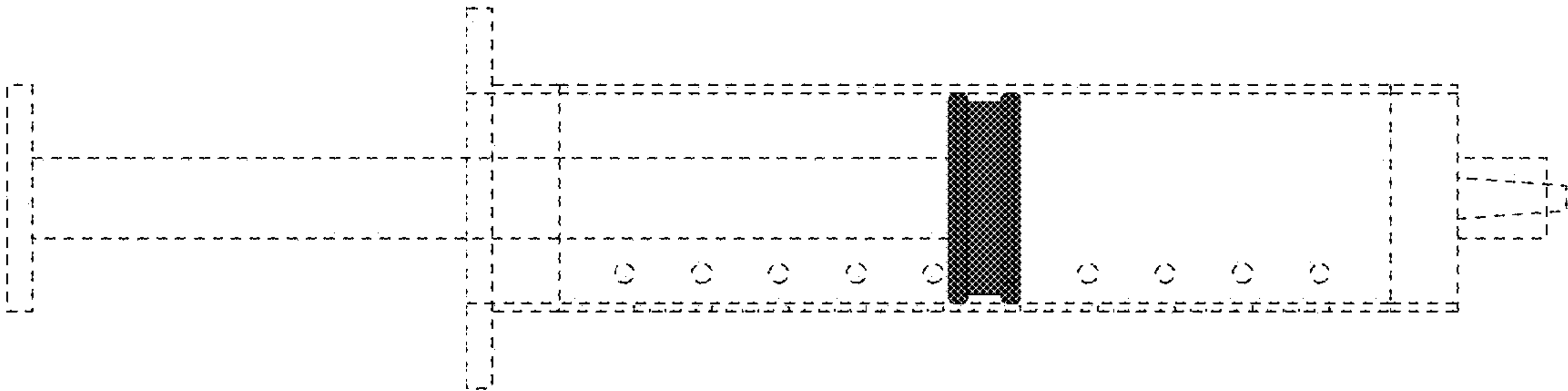


FIG. 70

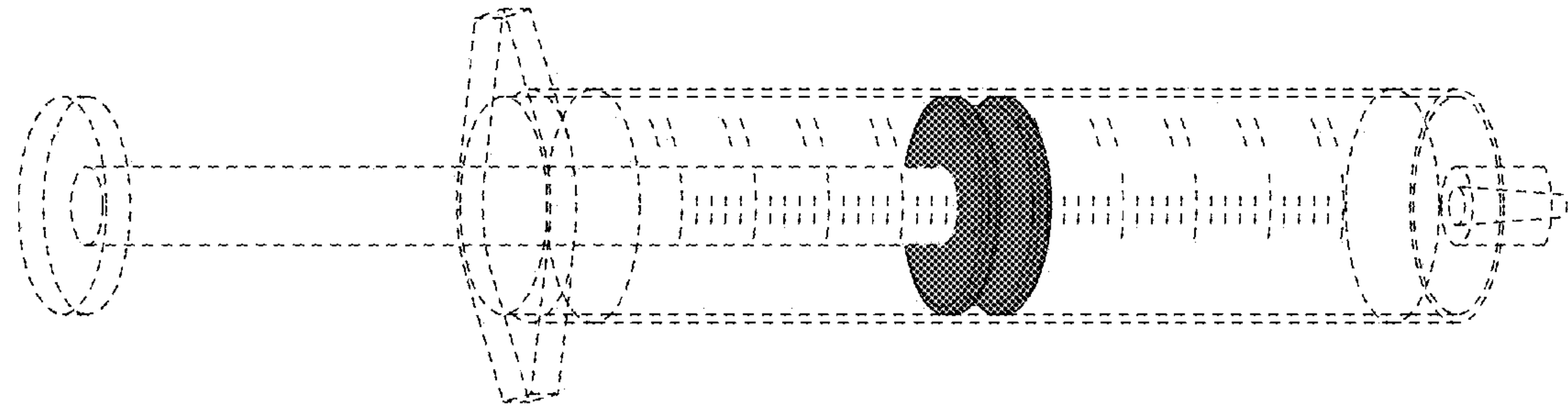


FIG. 71

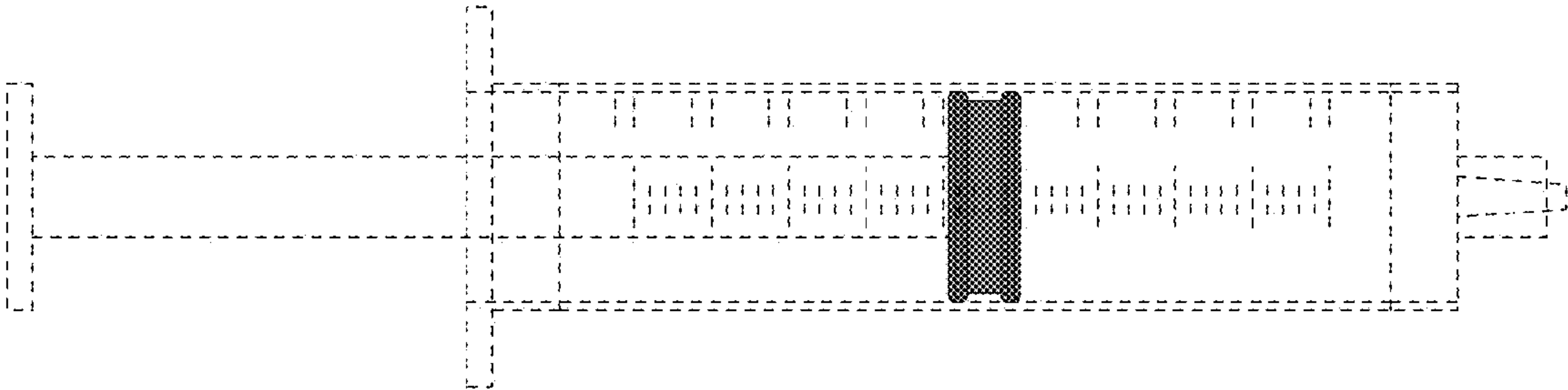


FIG. 72

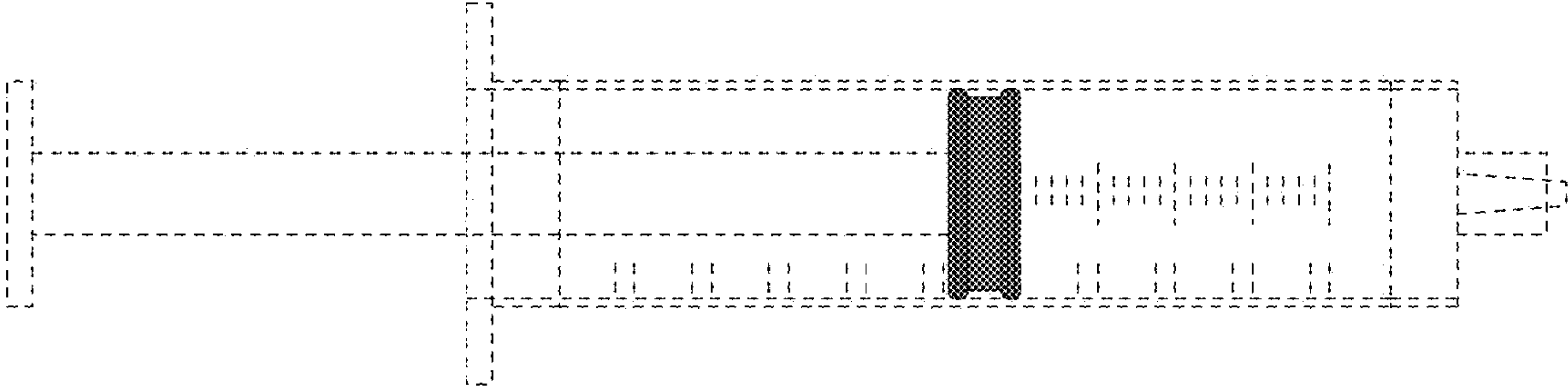


FIG. 73

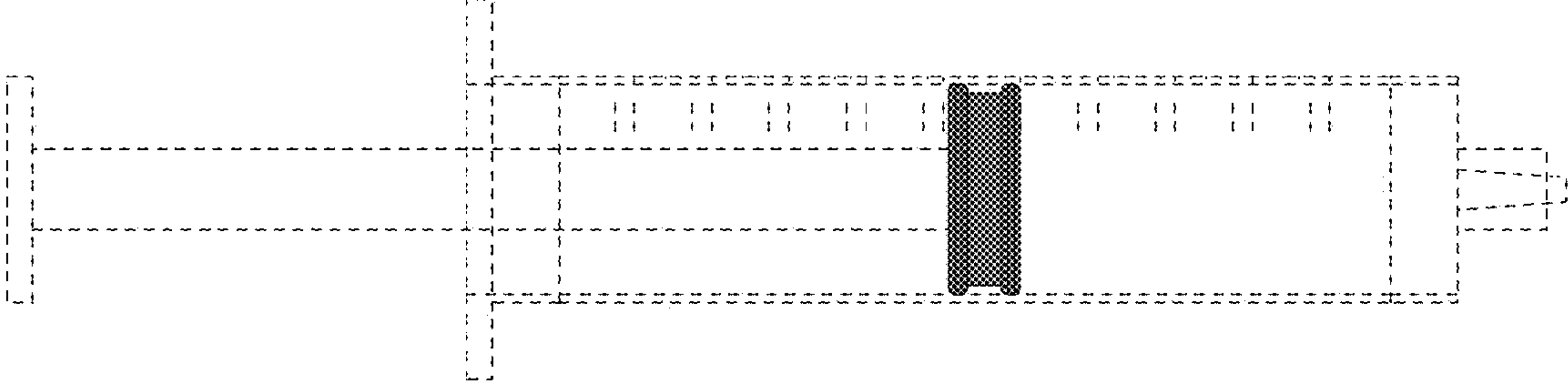


FIG. 74

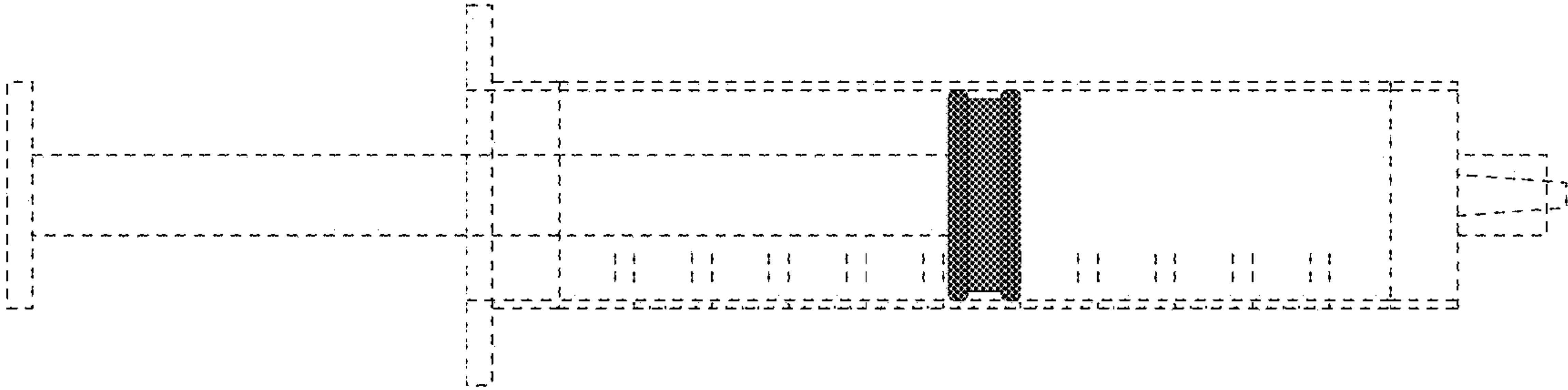


FIG. 75

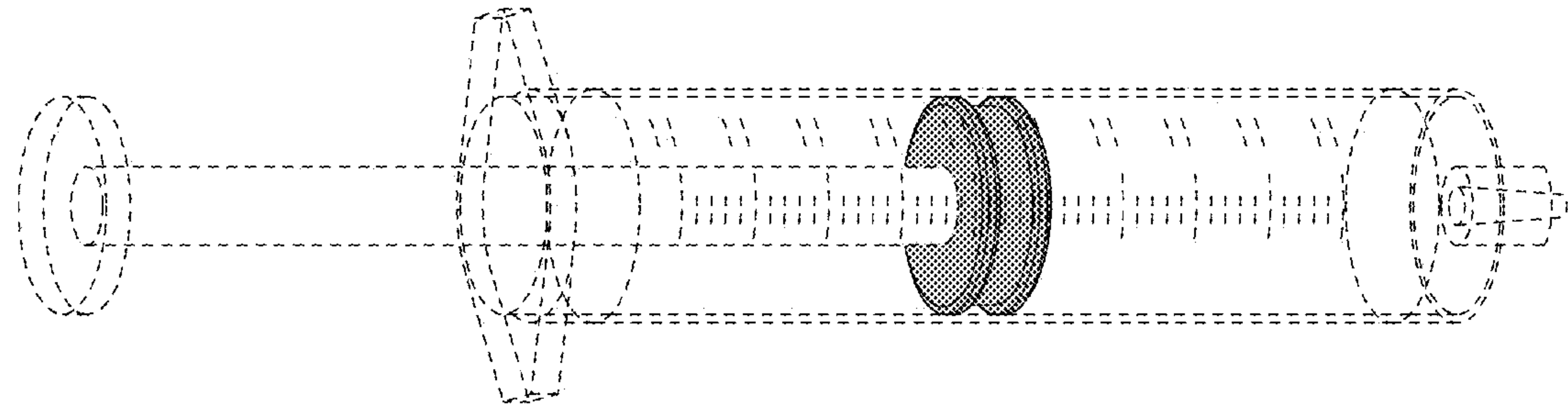


FIG. 76

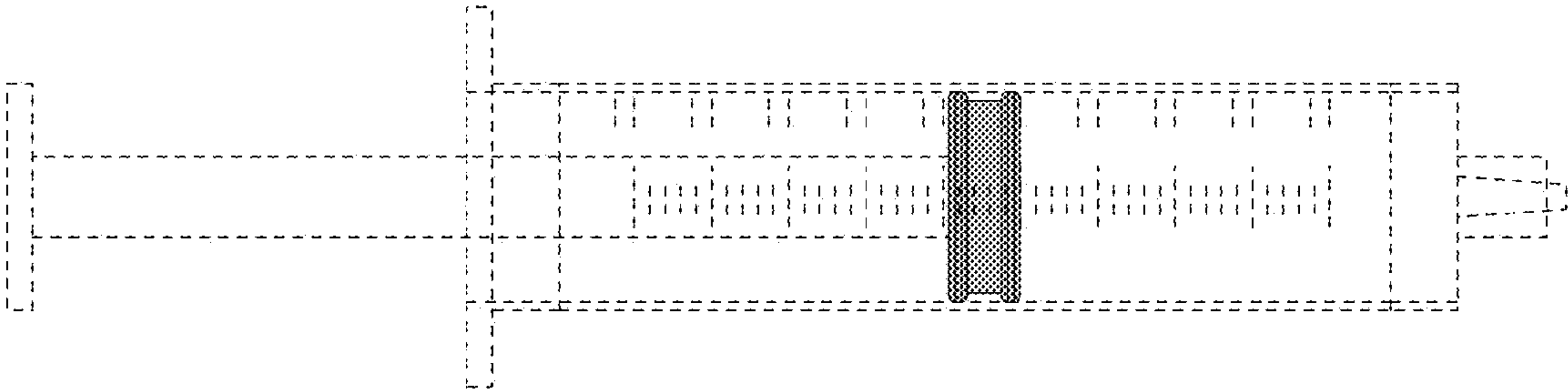


FIG. 77

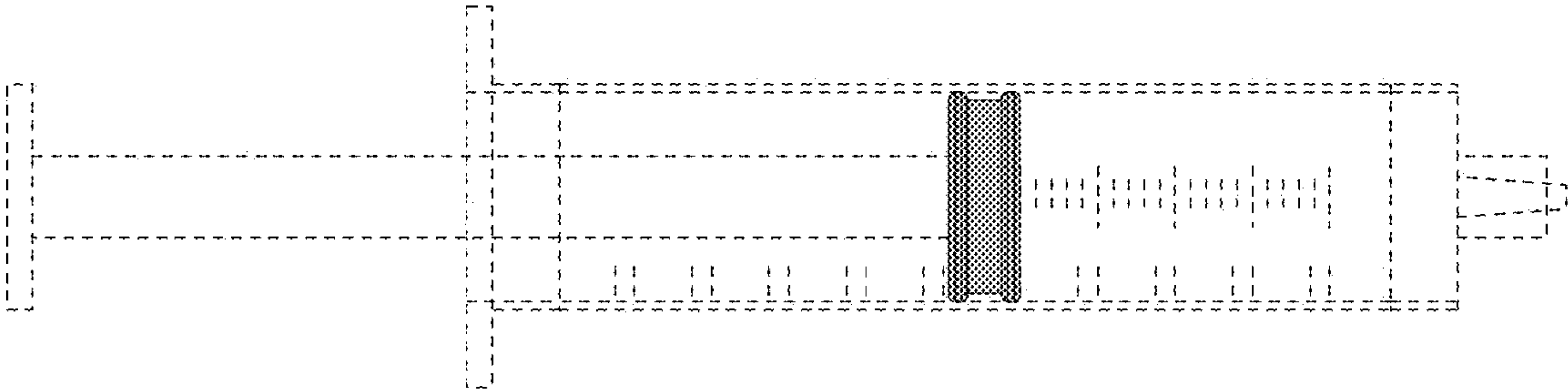


FIG. 78

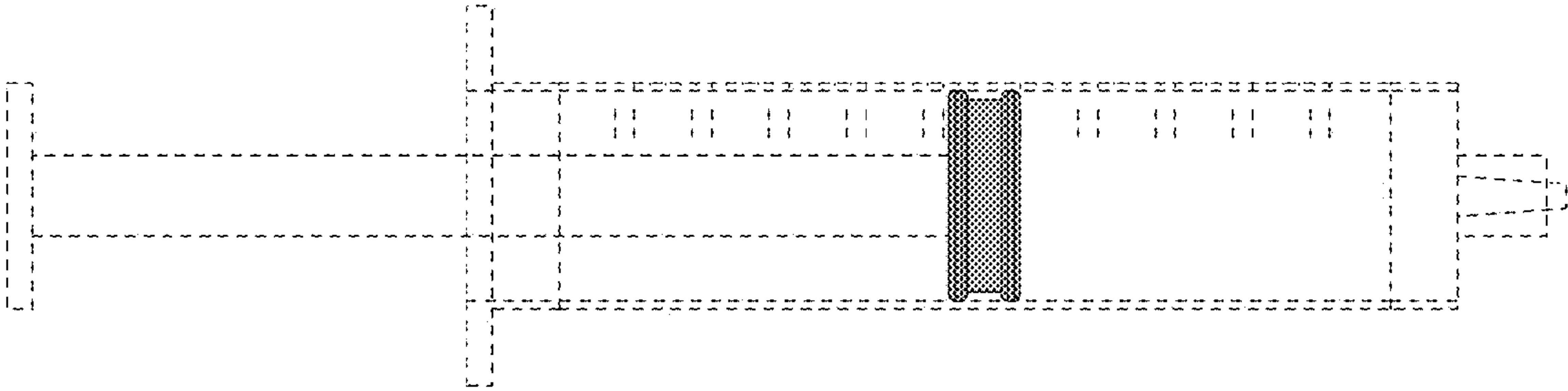


FIG. 79

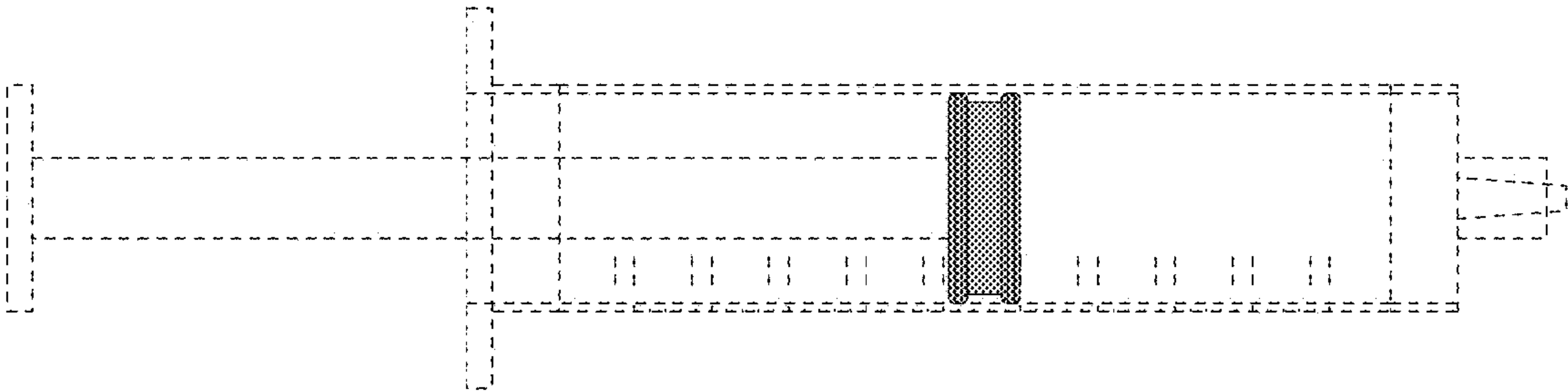


FIG. 80

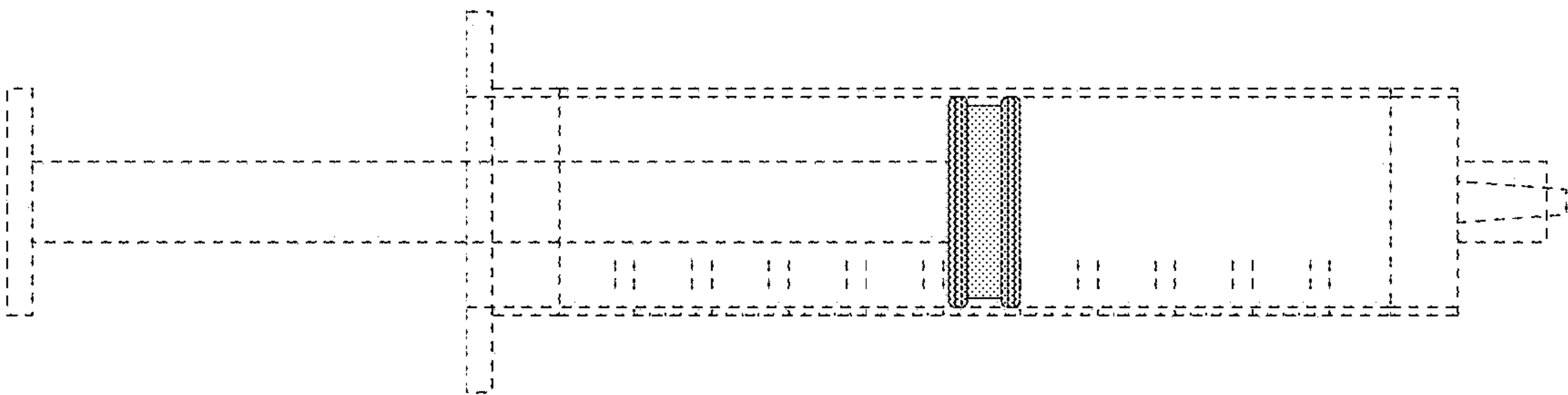


FIG. 85

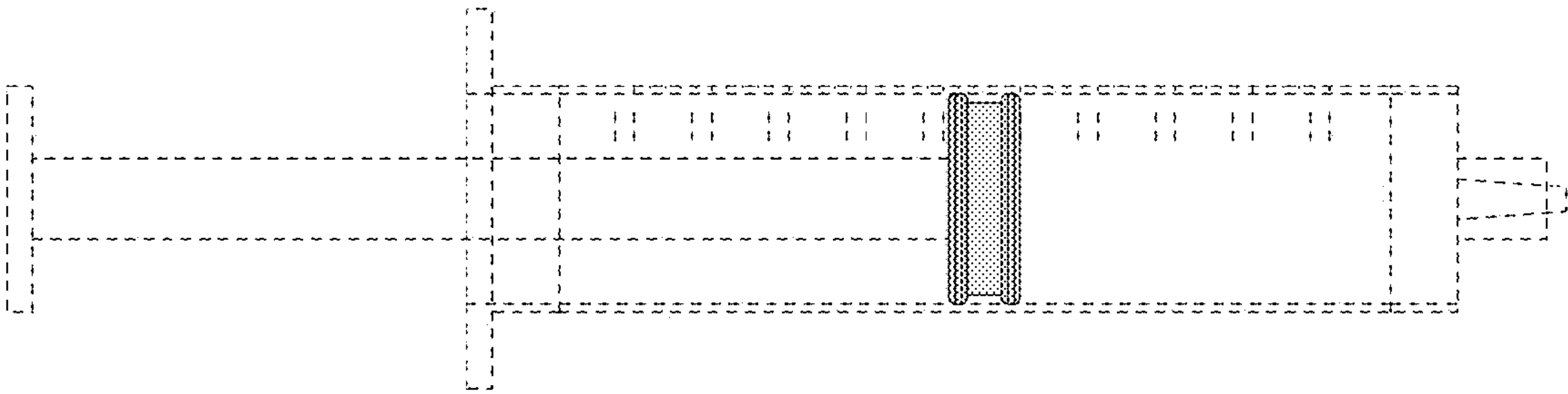


FIG. 84

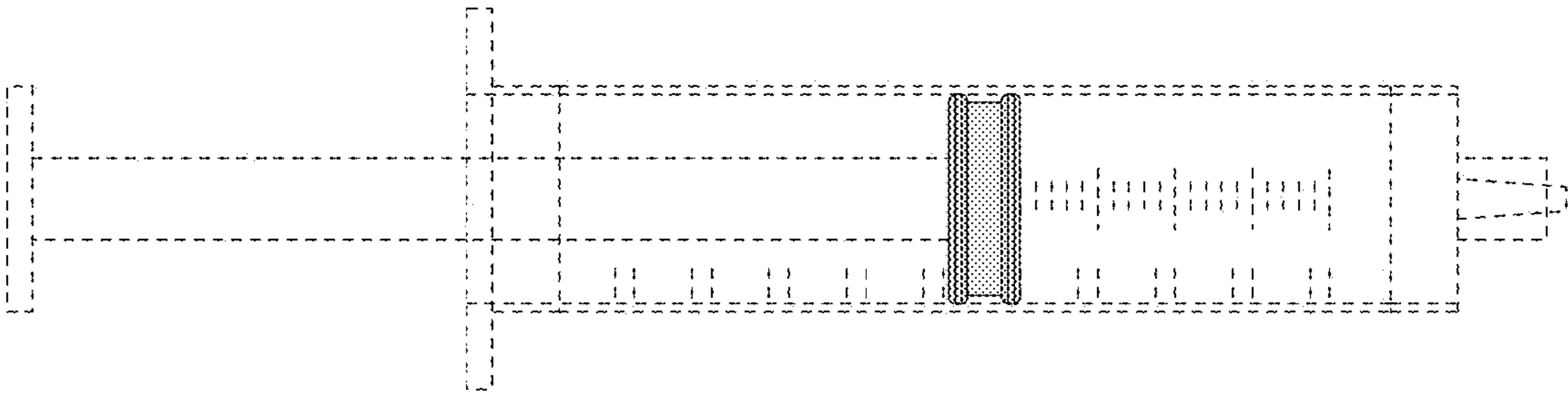


FIG. 83

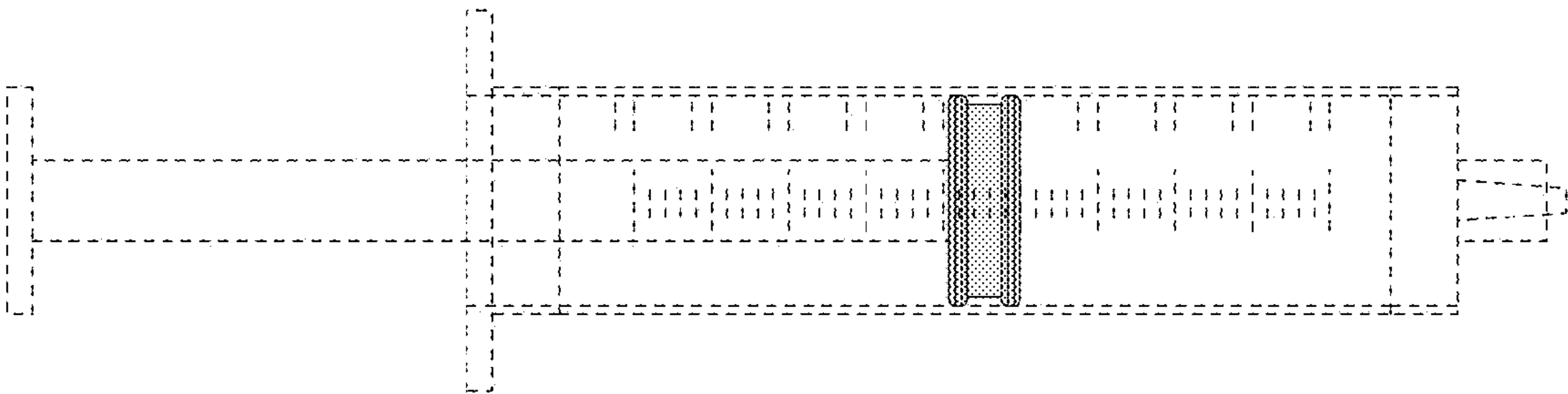


FIG. 82

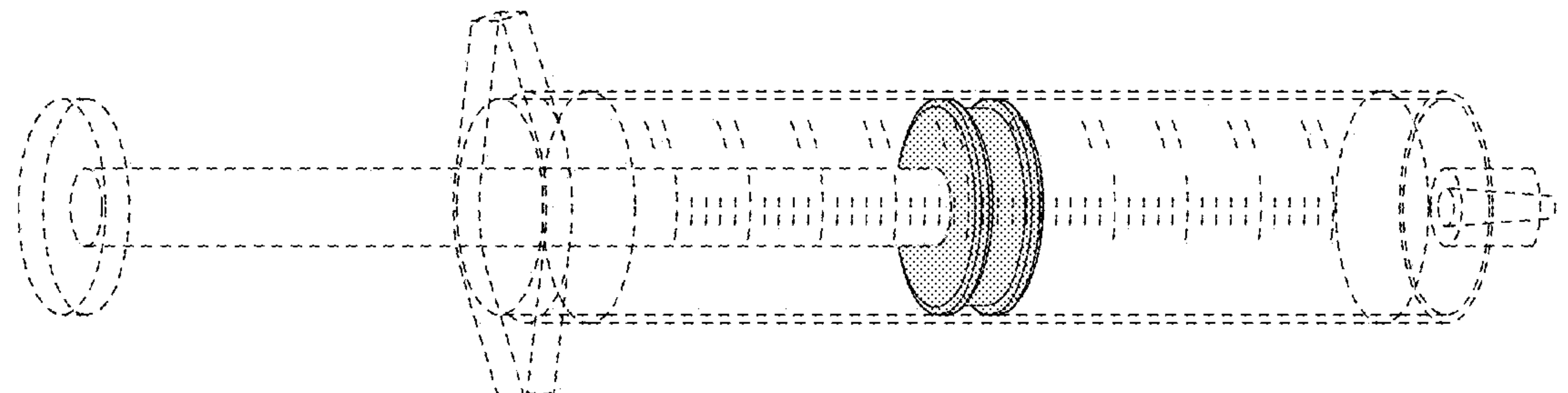


FIG. 81

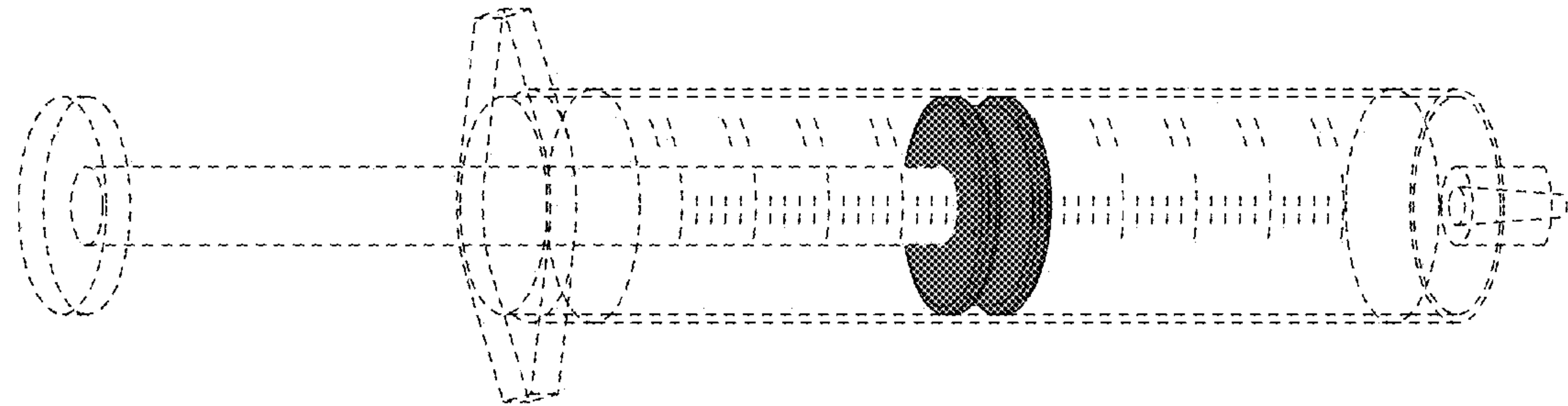


FIG. 86

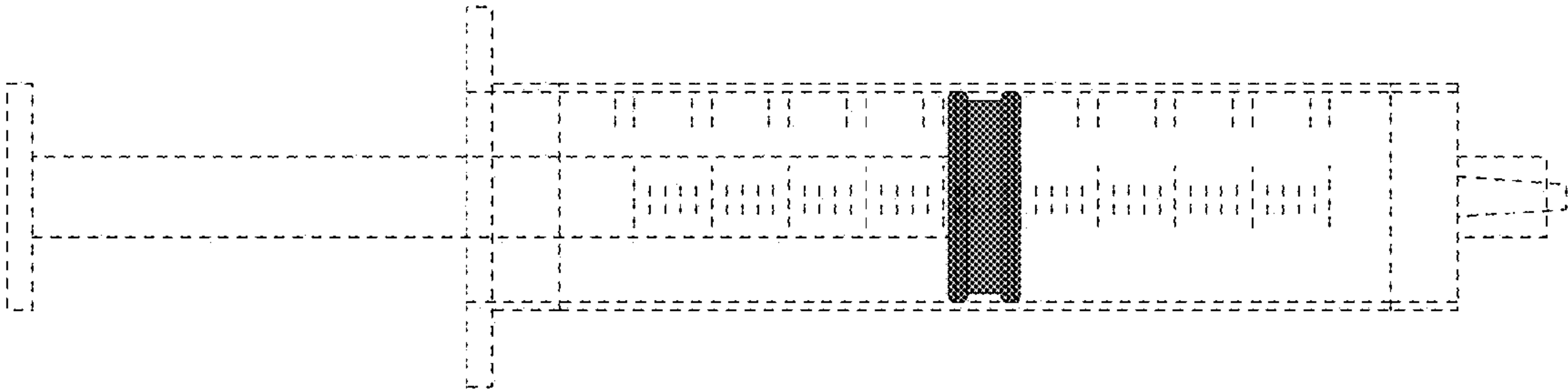


FIG. 87

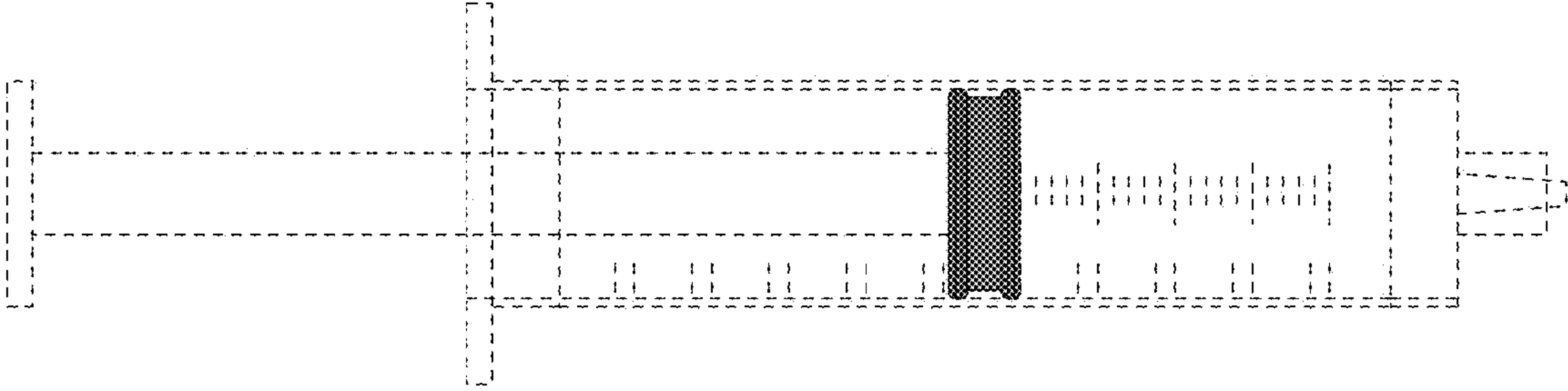


FIG. 88

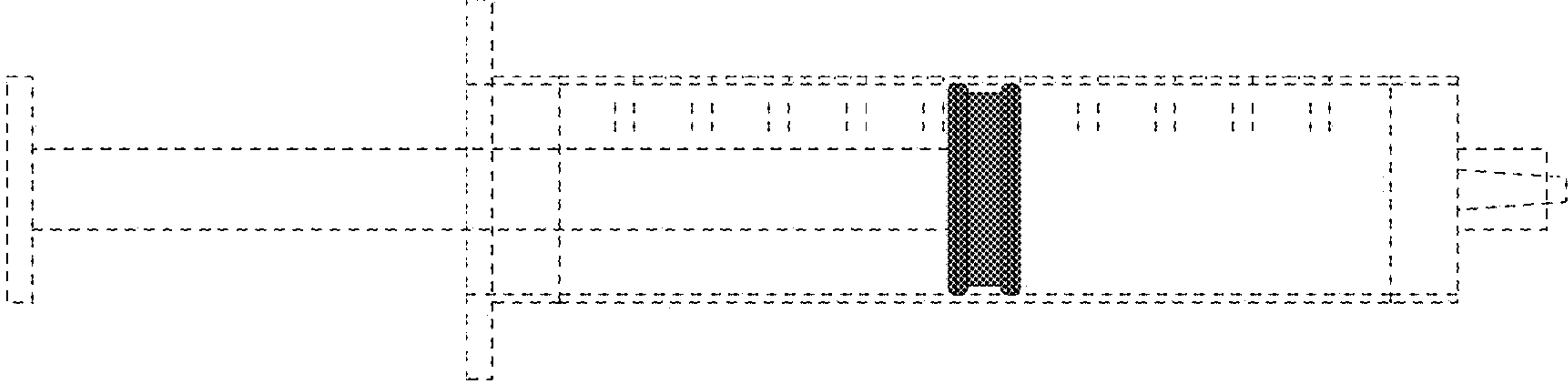


FIG. 89

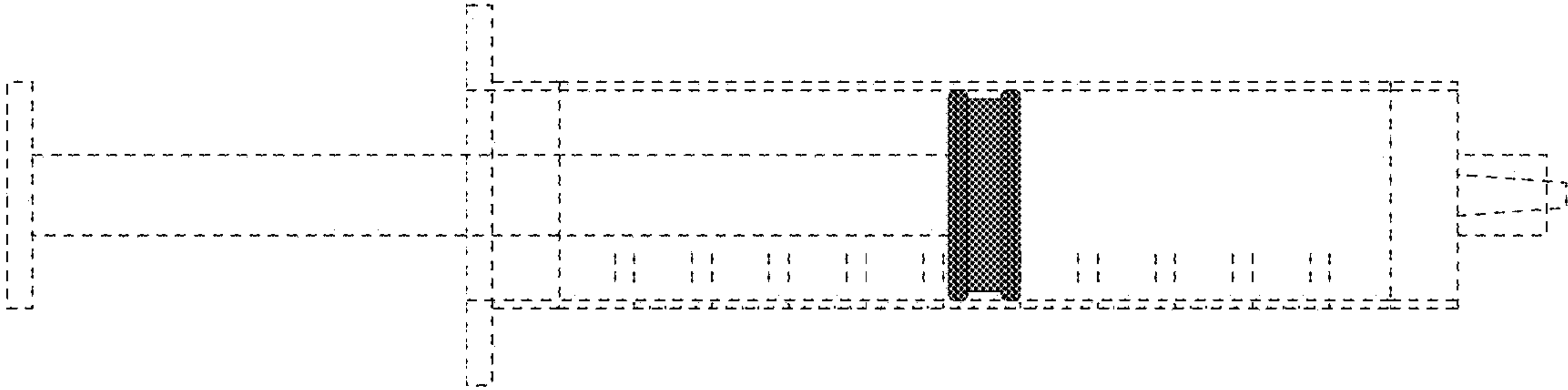


FIG. 90

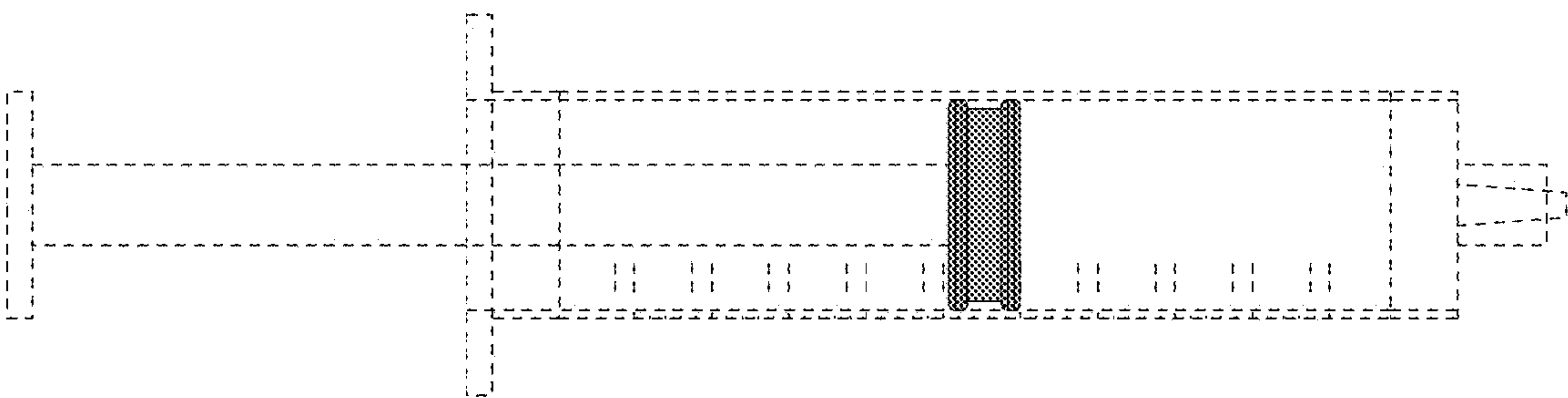


FIG. 91

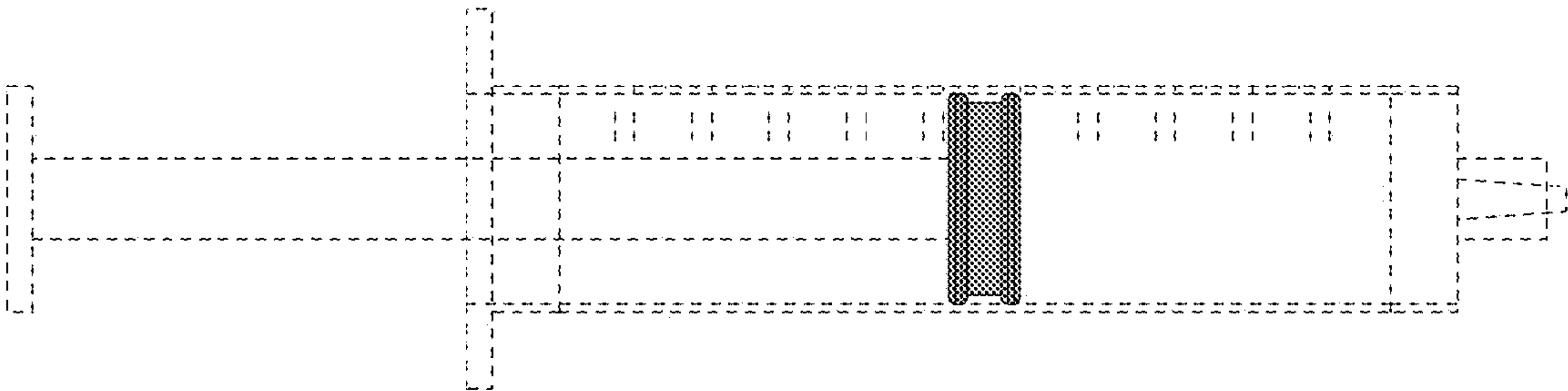


FIG. 92

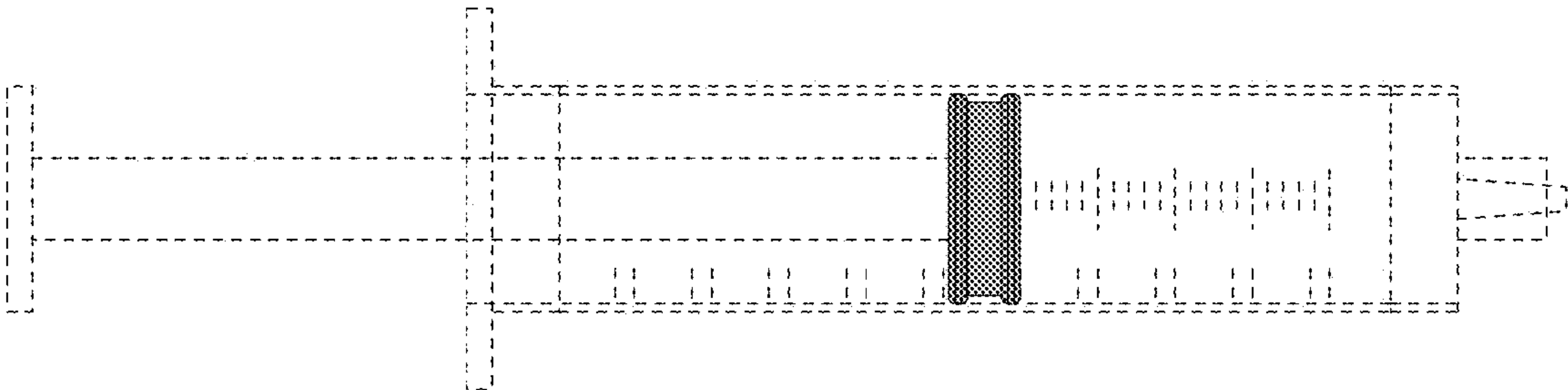


FIG. 93

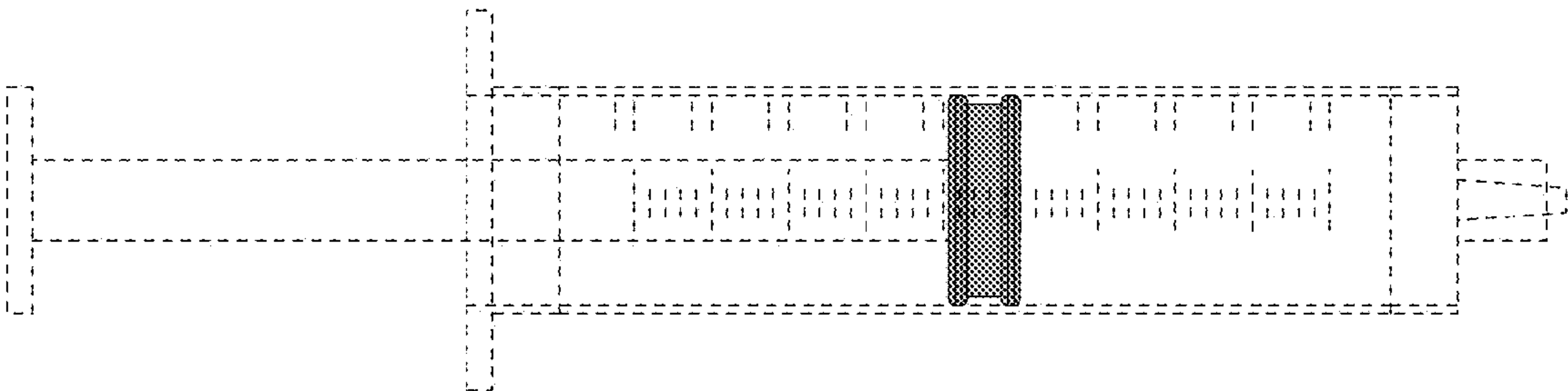


FIG. 94

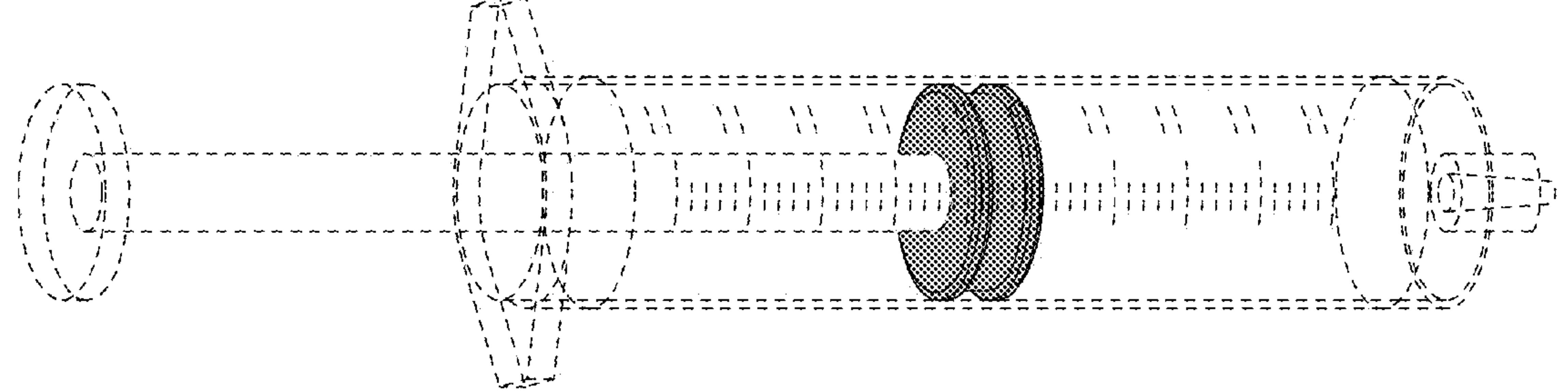


FIG. 95

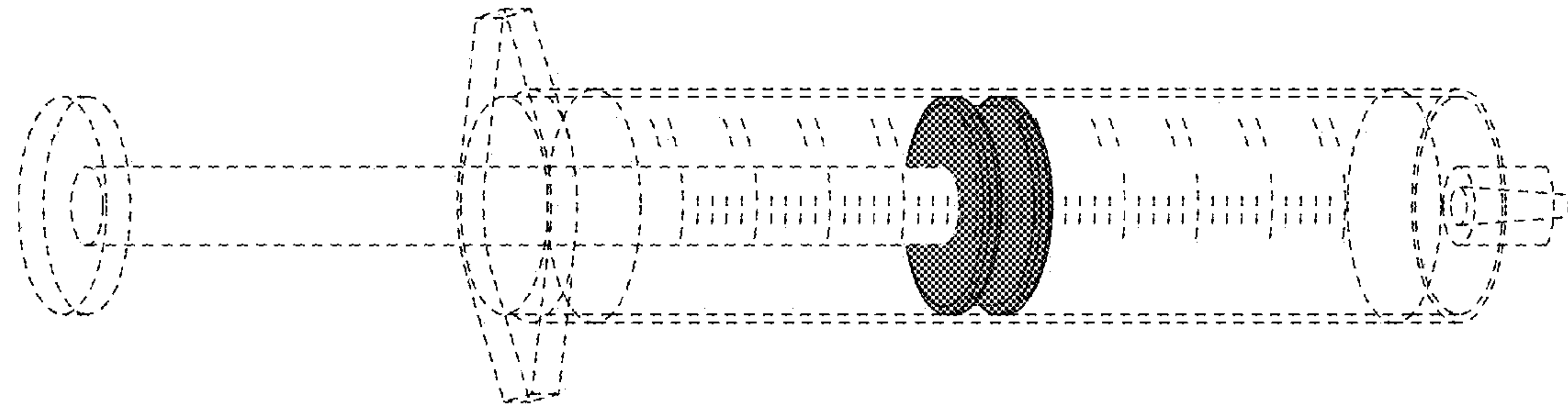


FIG. 96

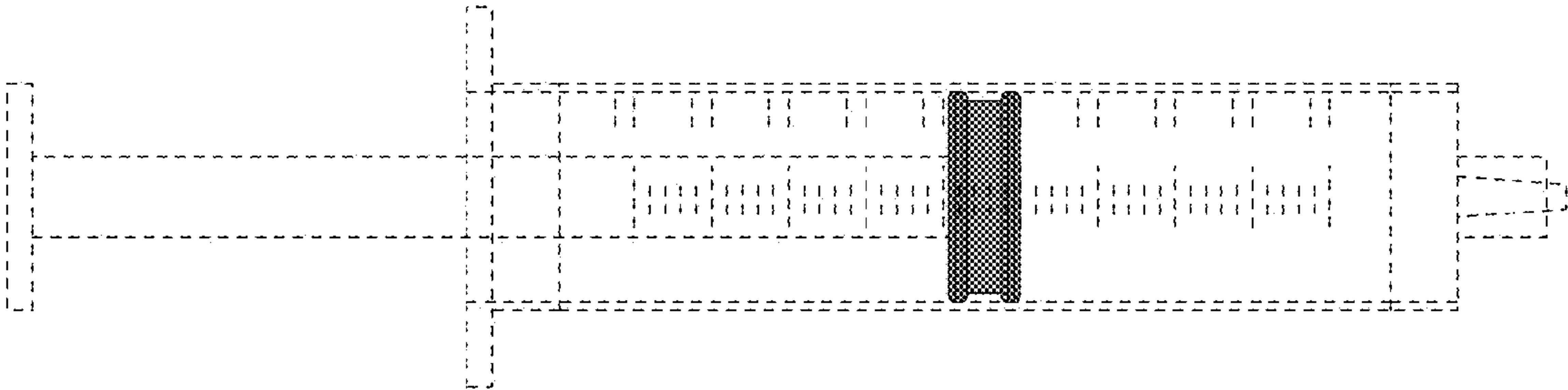


FIG. 97

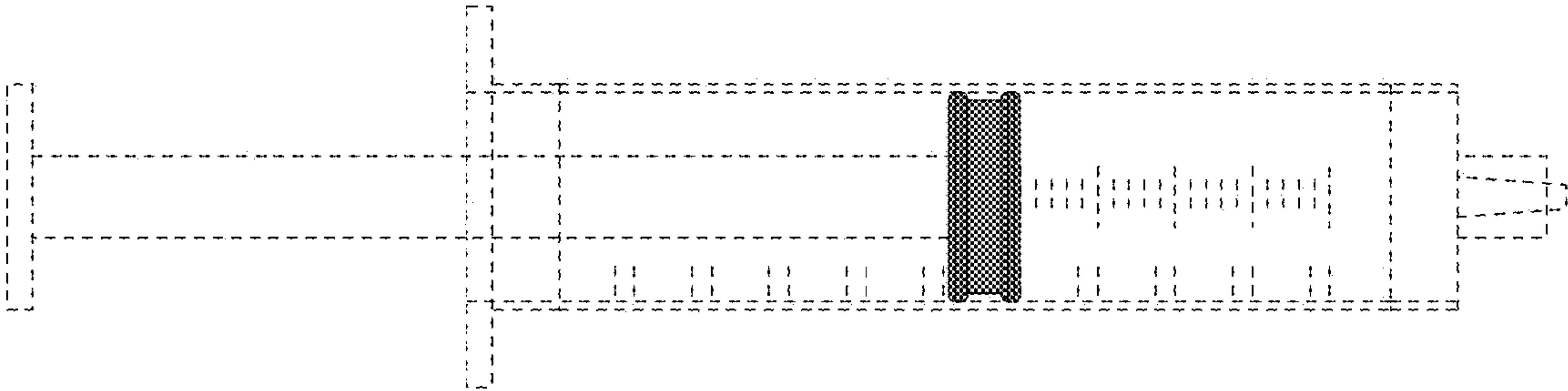


FIG. 98

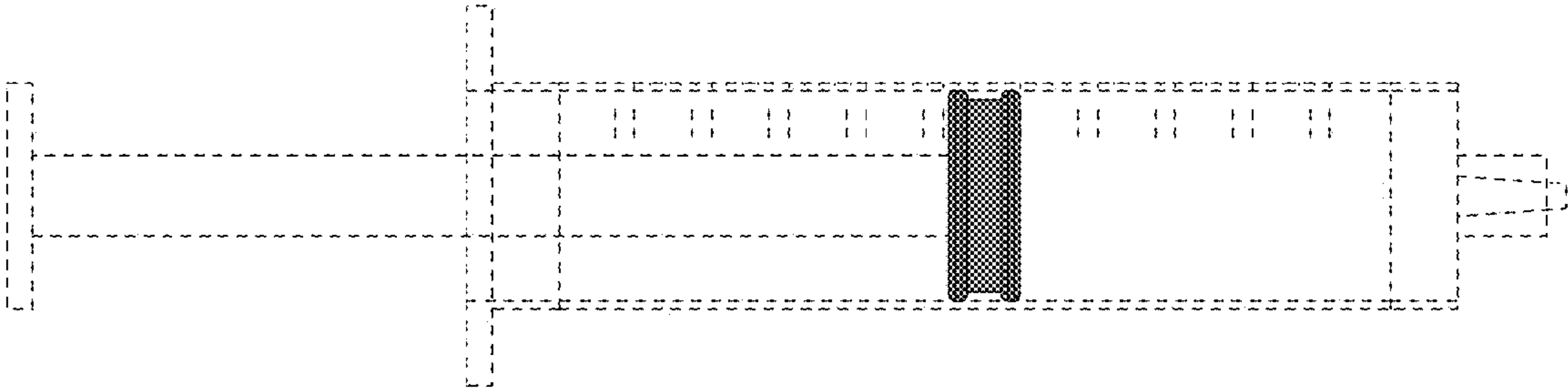


FIG. 99

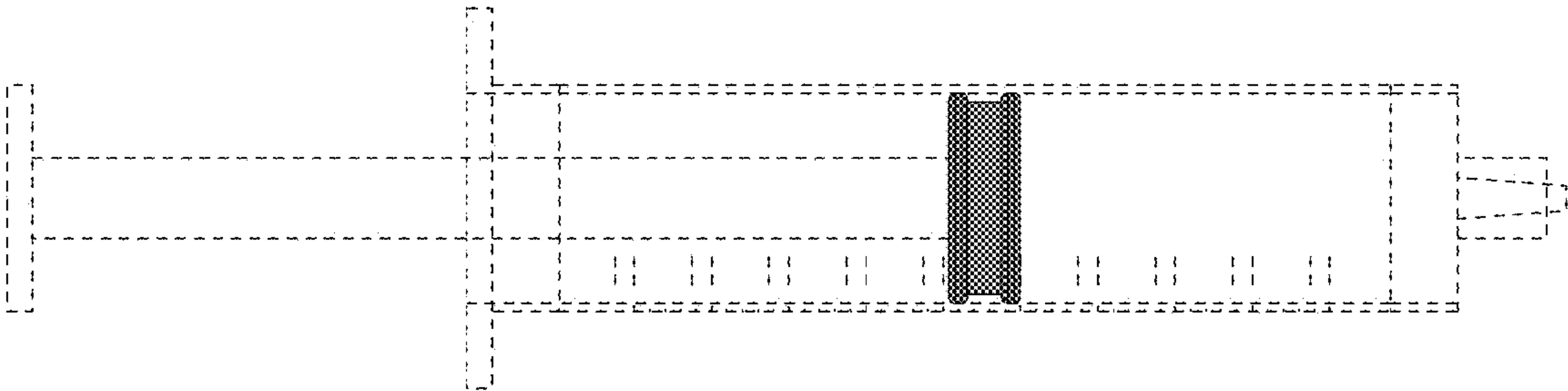


FIG. 100

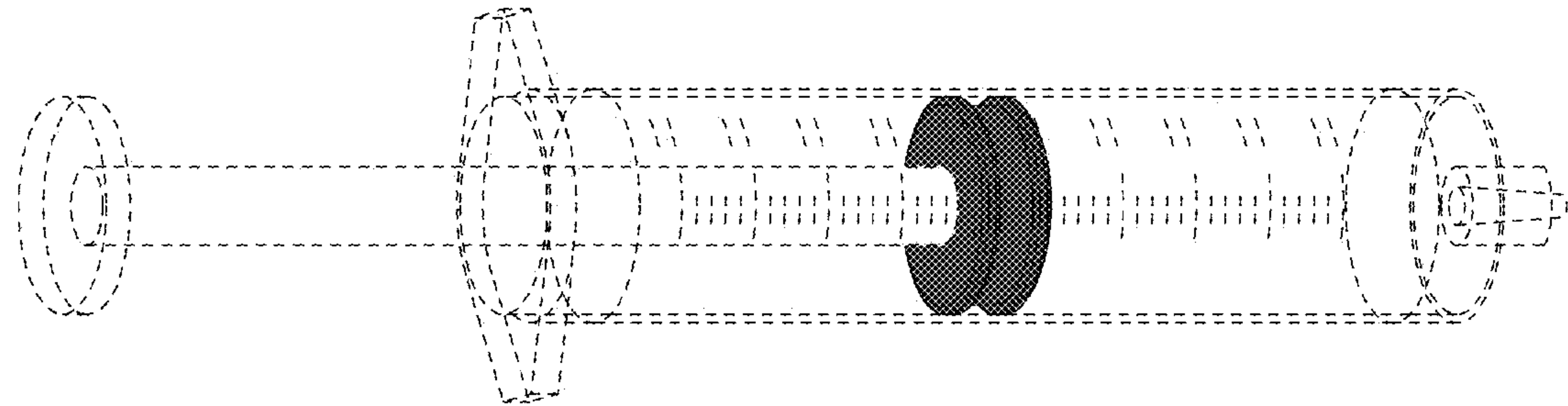


FIG. 101

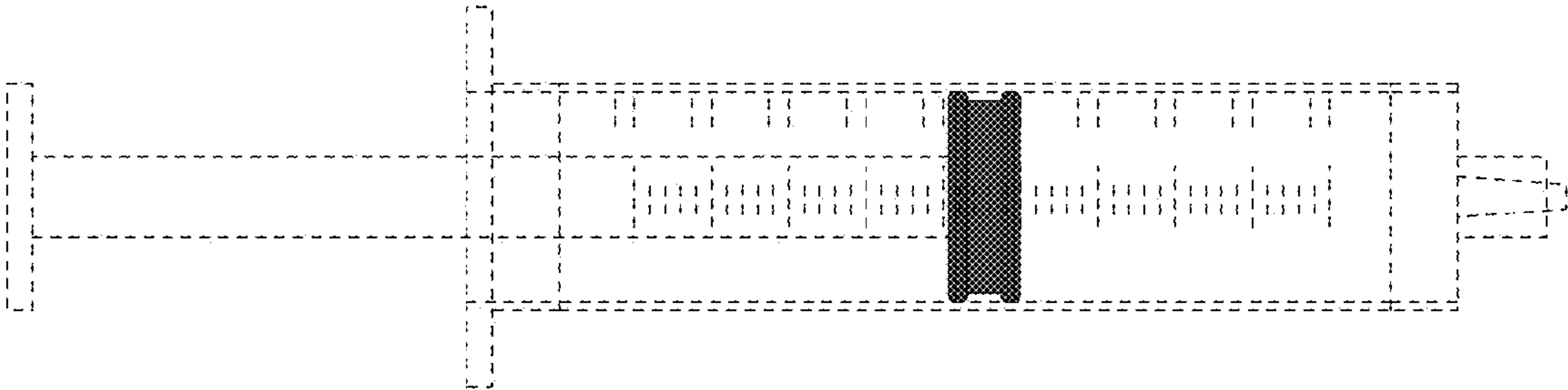


FIG. 102

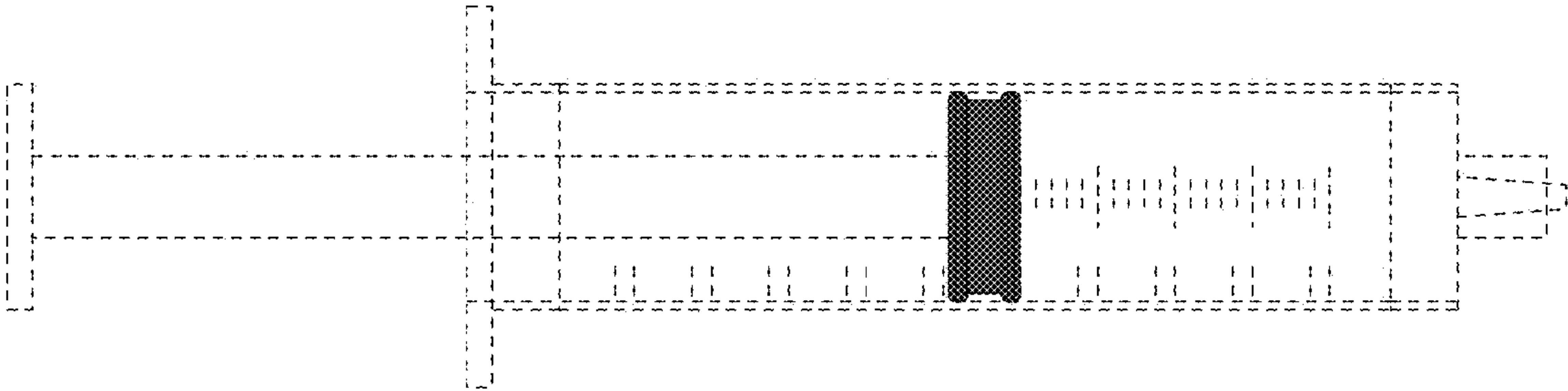


FIG. 103

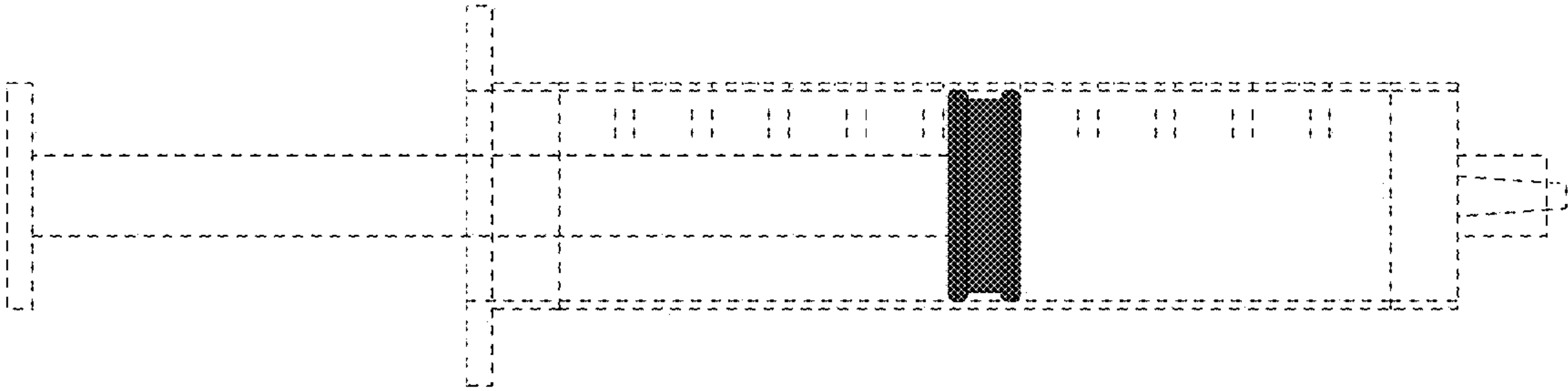


FIG. 104

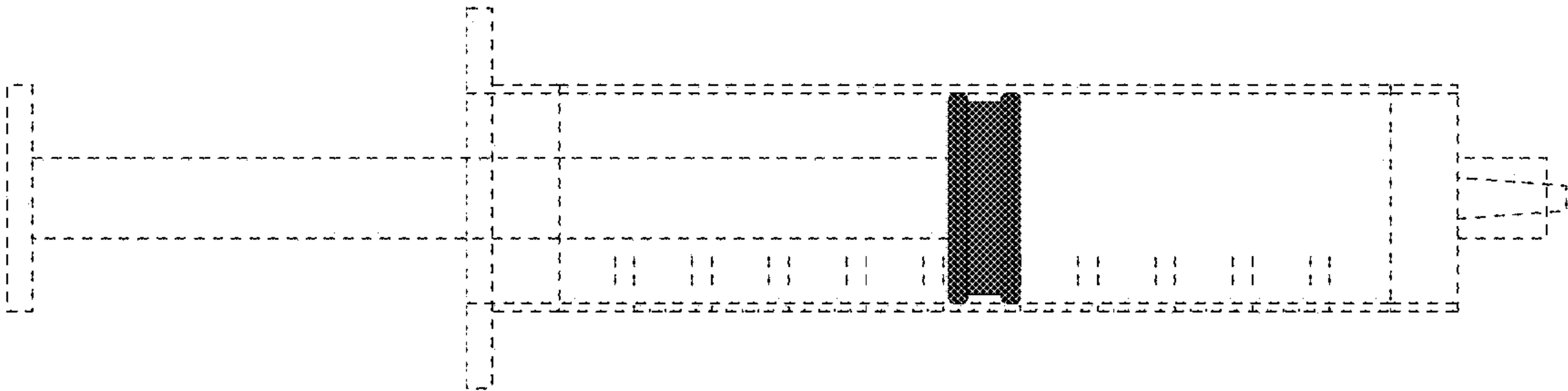


FIG. 105

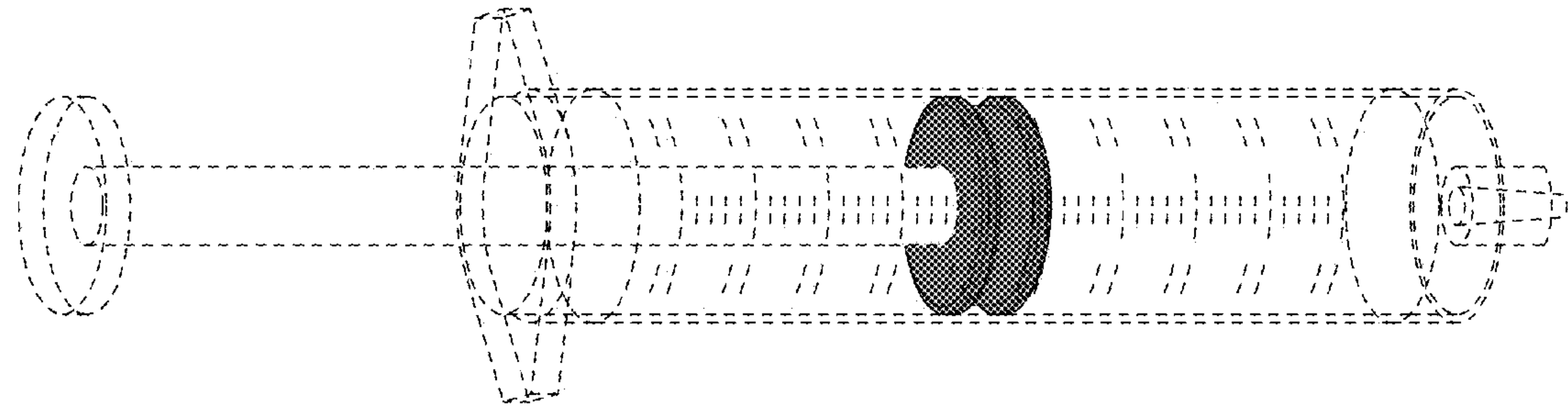


FIG. 106

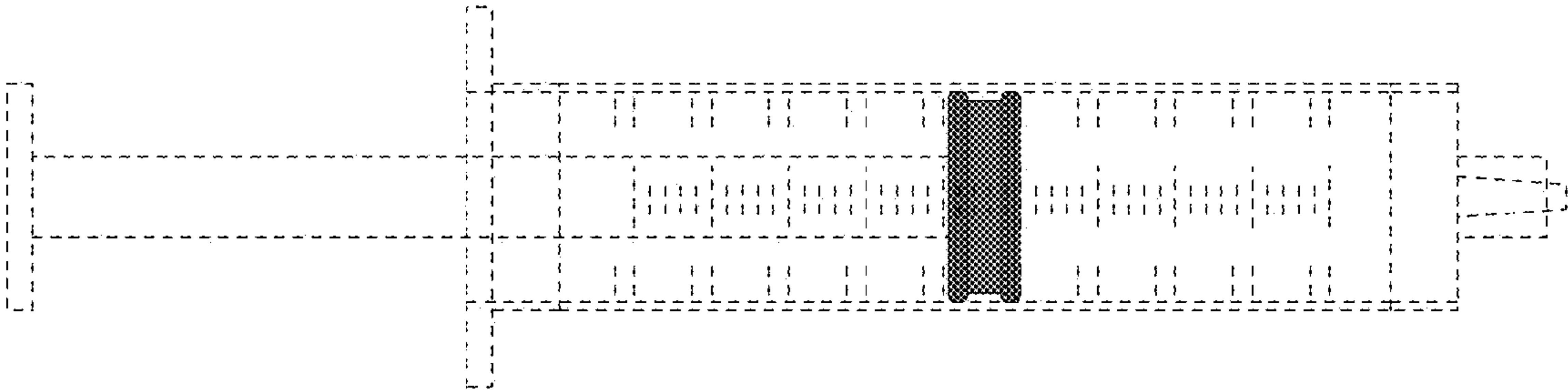


FIG. 107

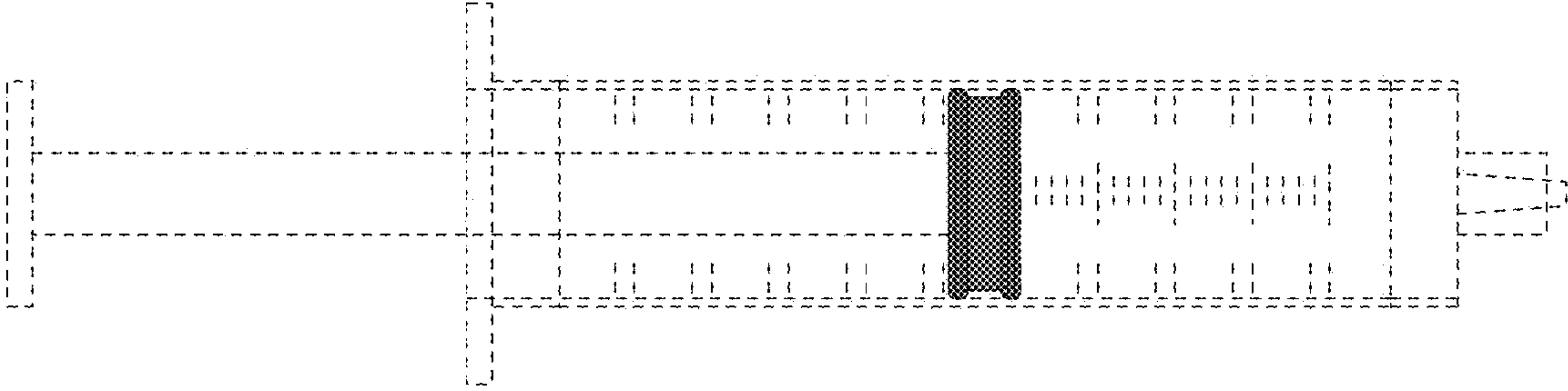


FIG. 108

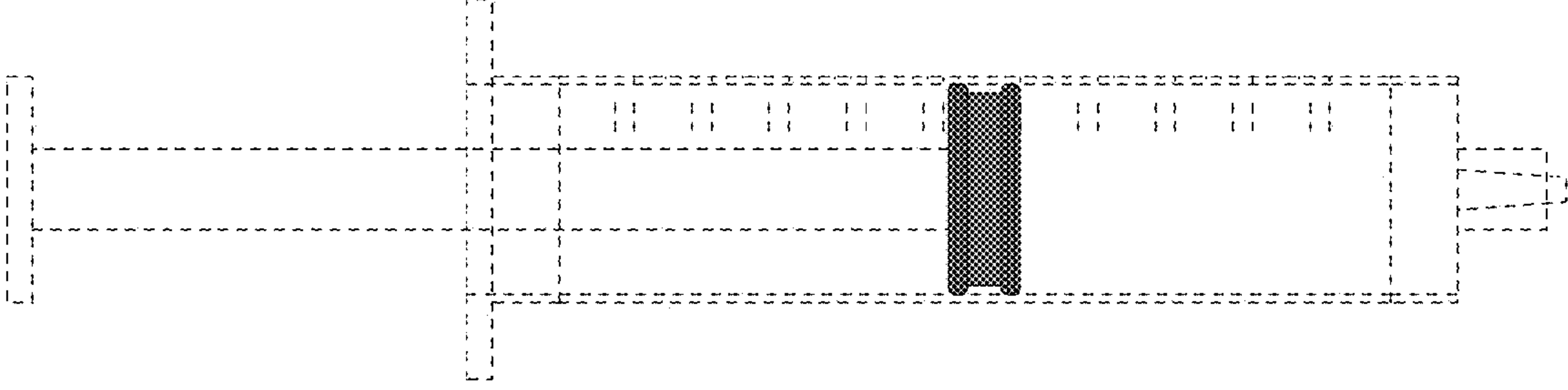


FIG. 109

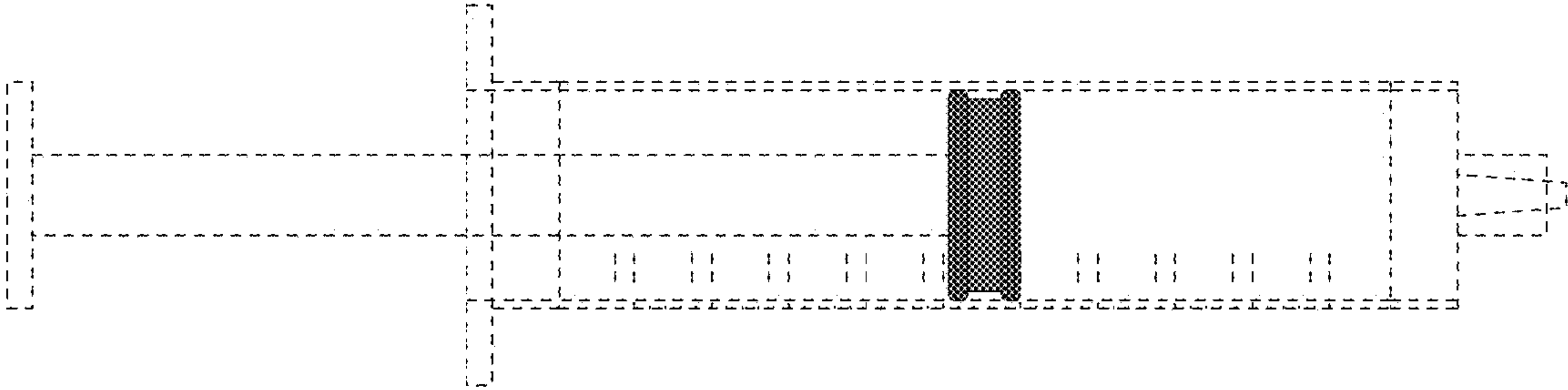


FIG. 110

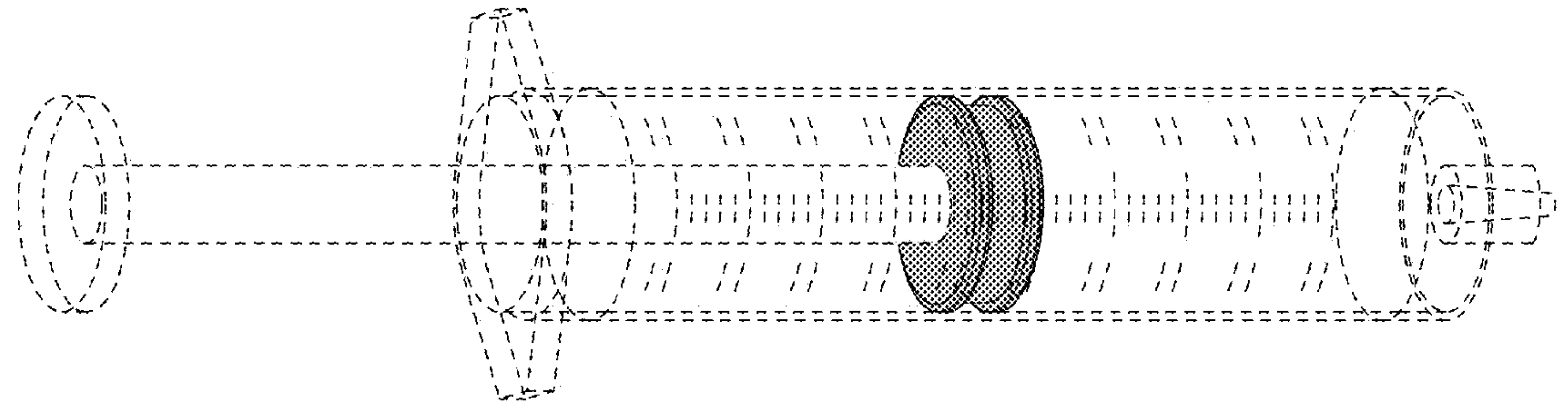


FIG. 111

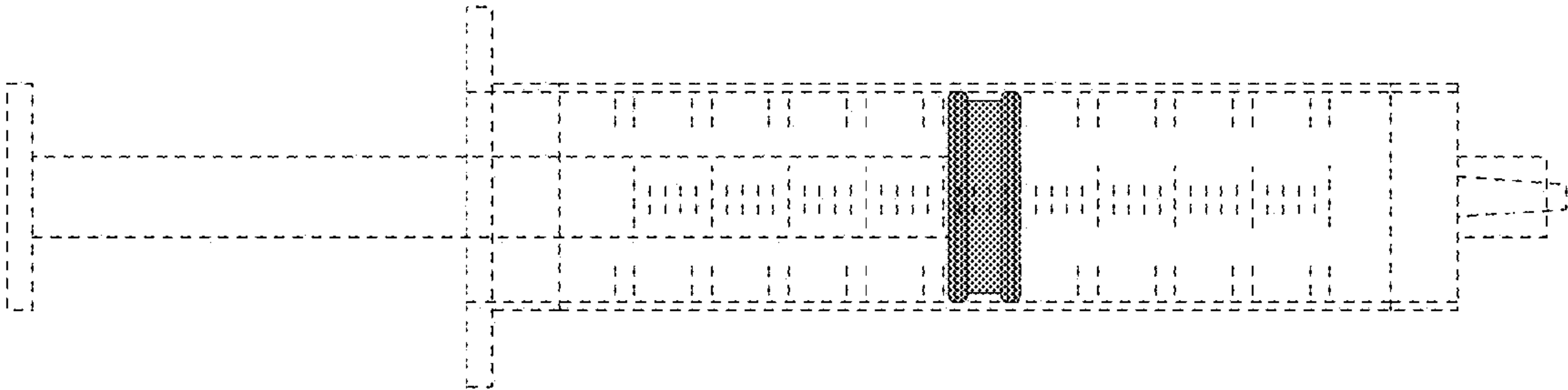


FIG. 112

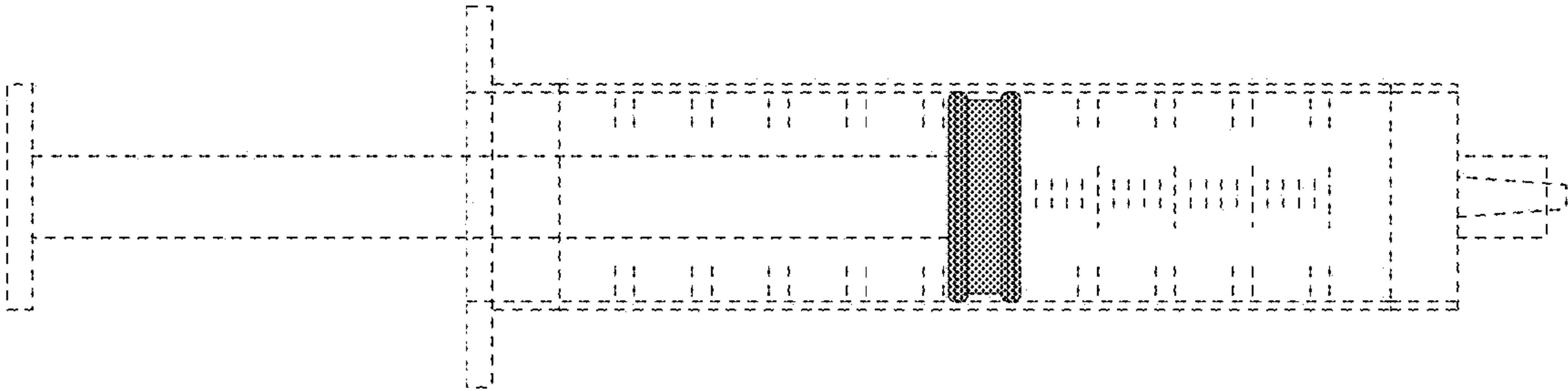


FIG. 113

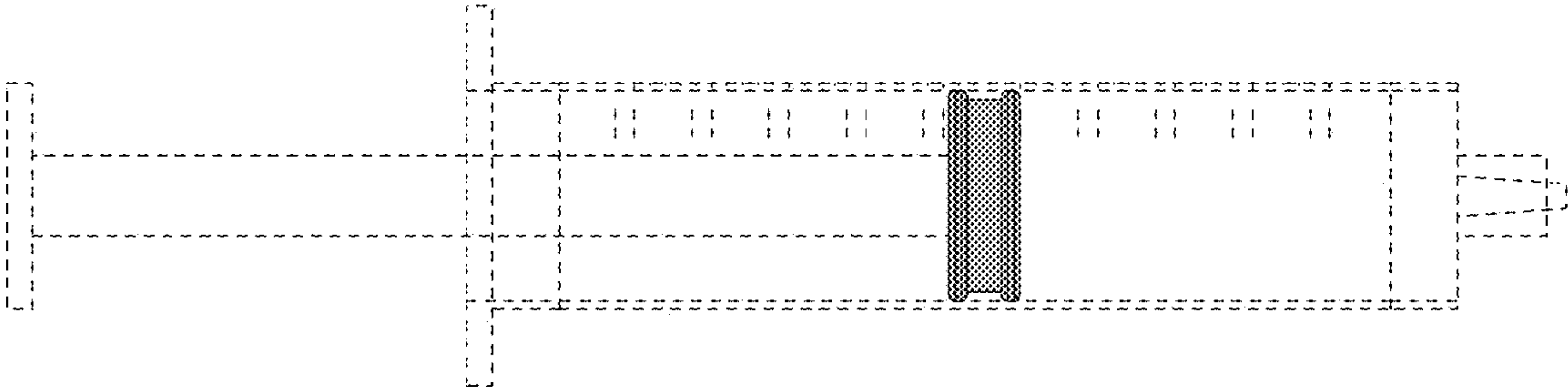


FIG. 114

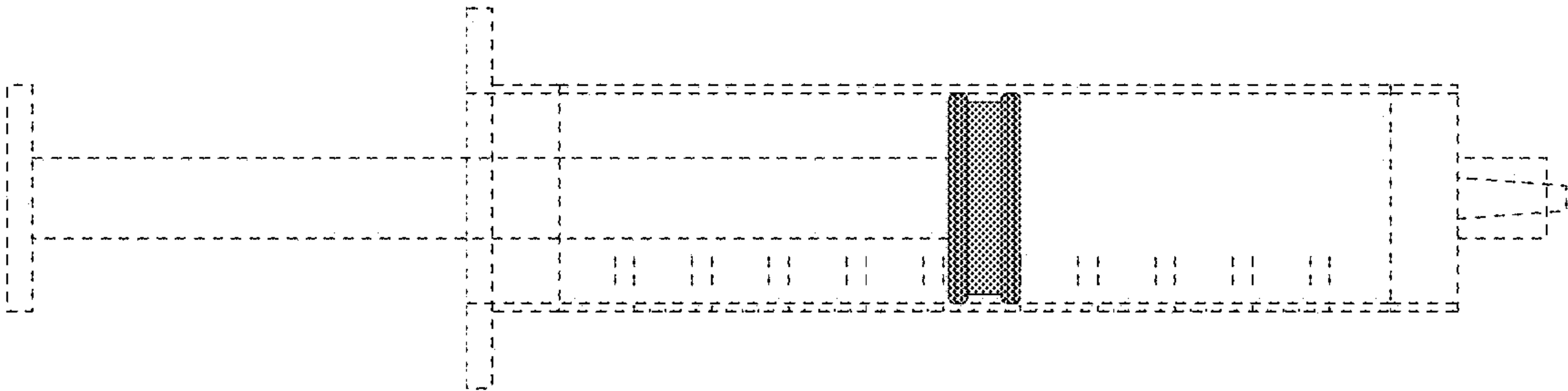


FIG. 115

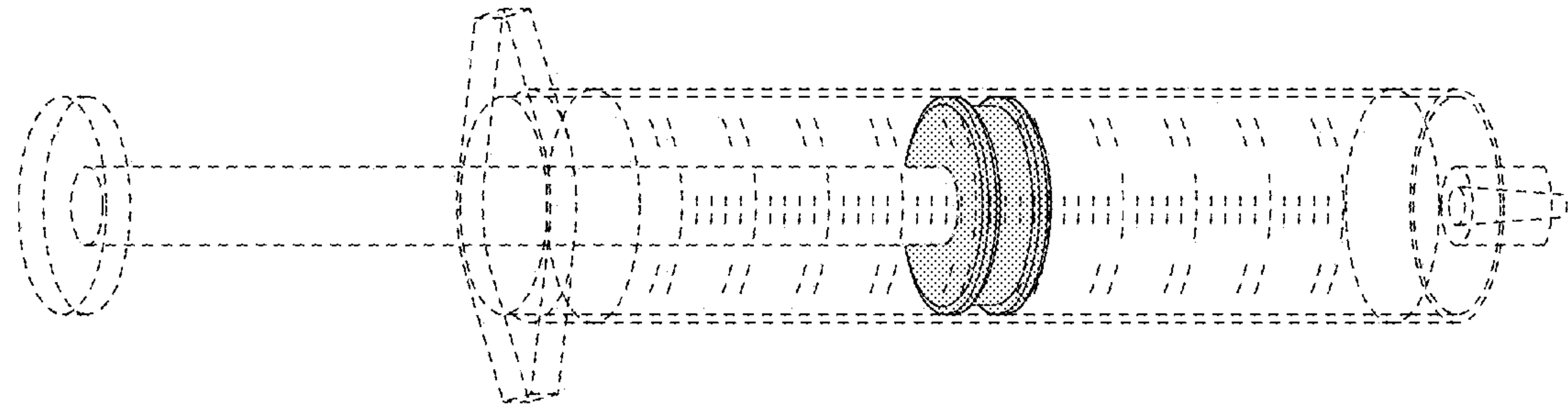


FIG. 116

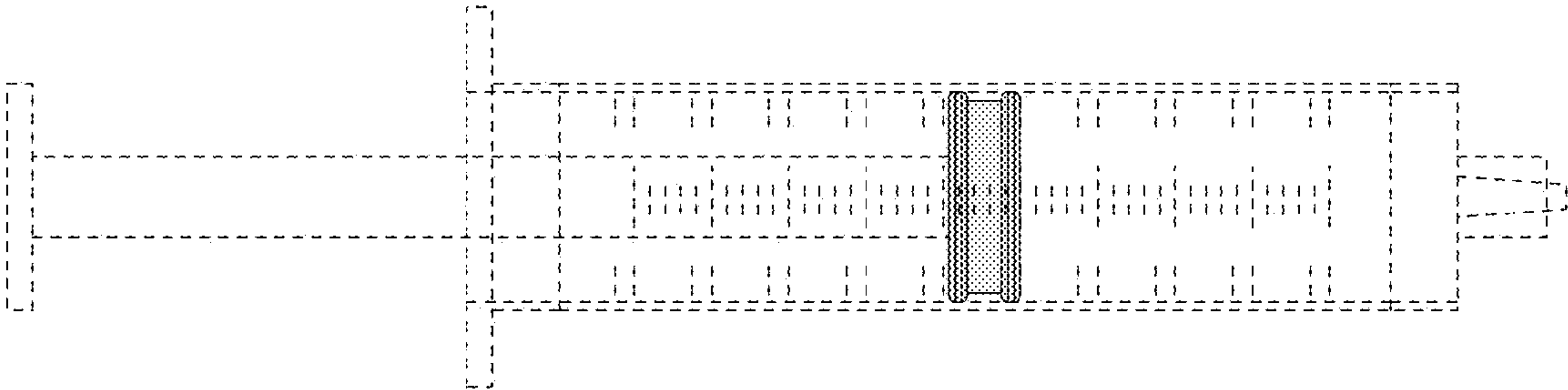


FIG. 117

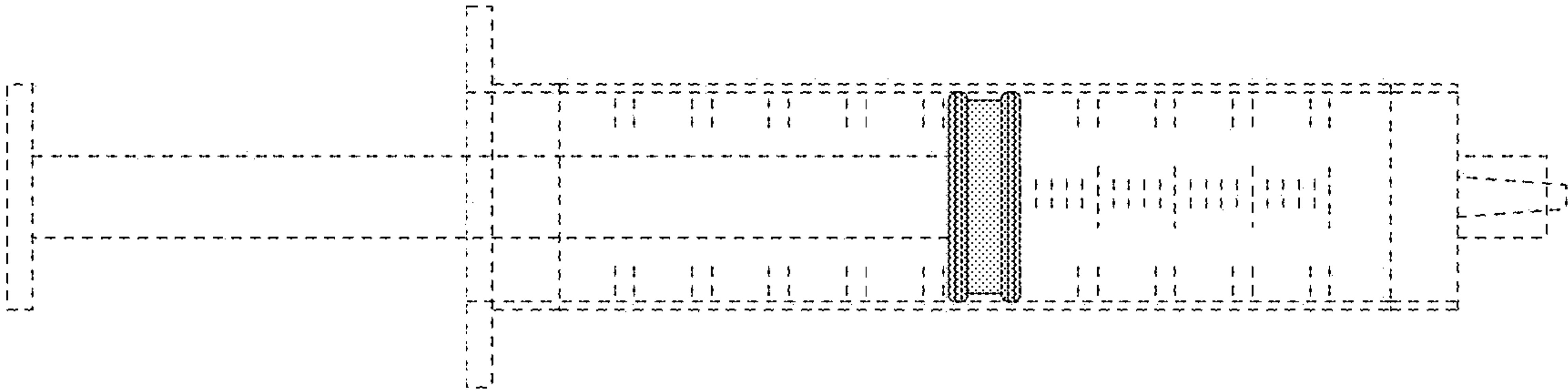


FIG. 118

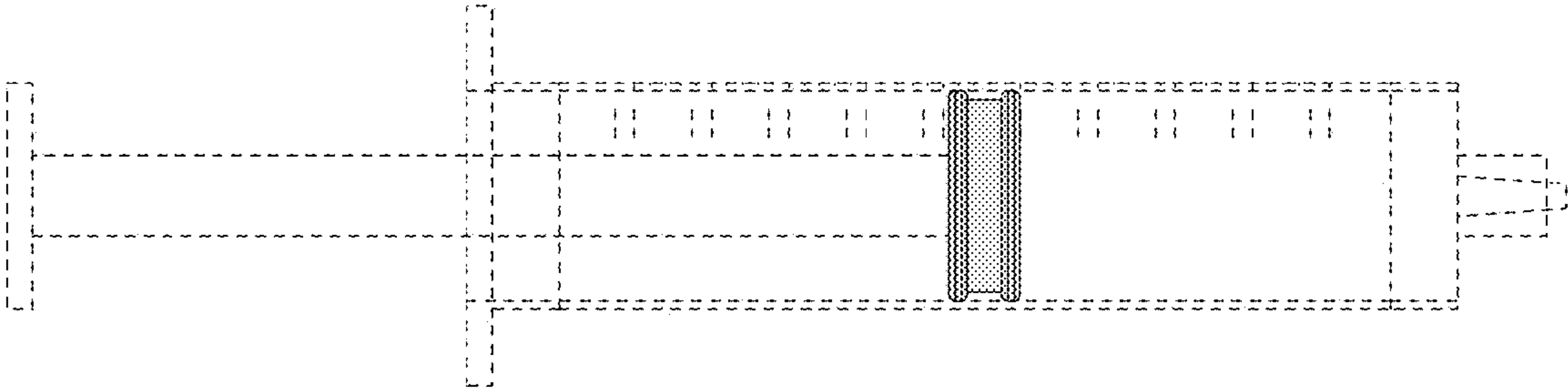


FIG. 119

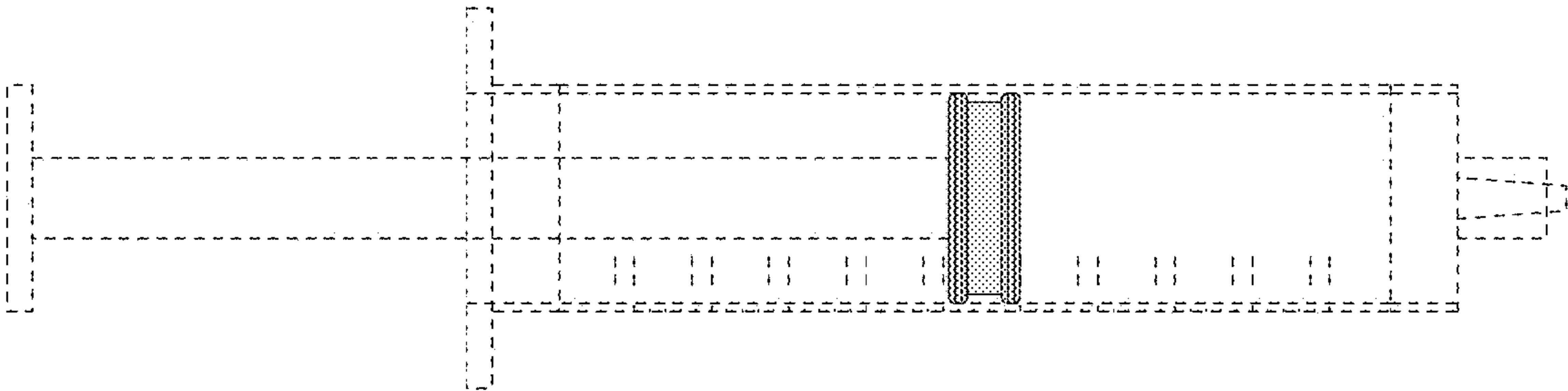


FIG. 120

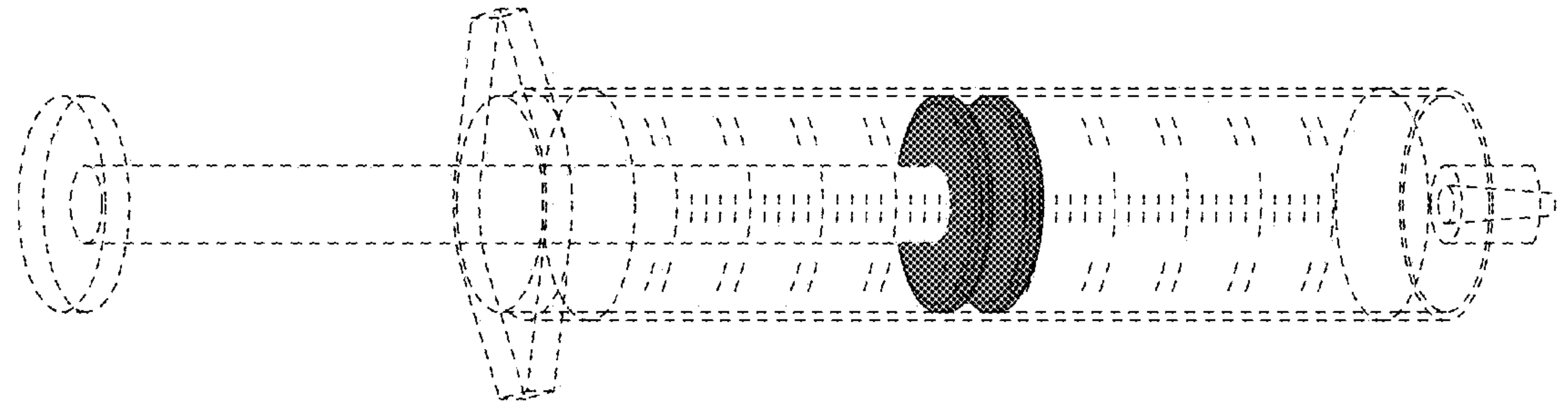


FIG. 121

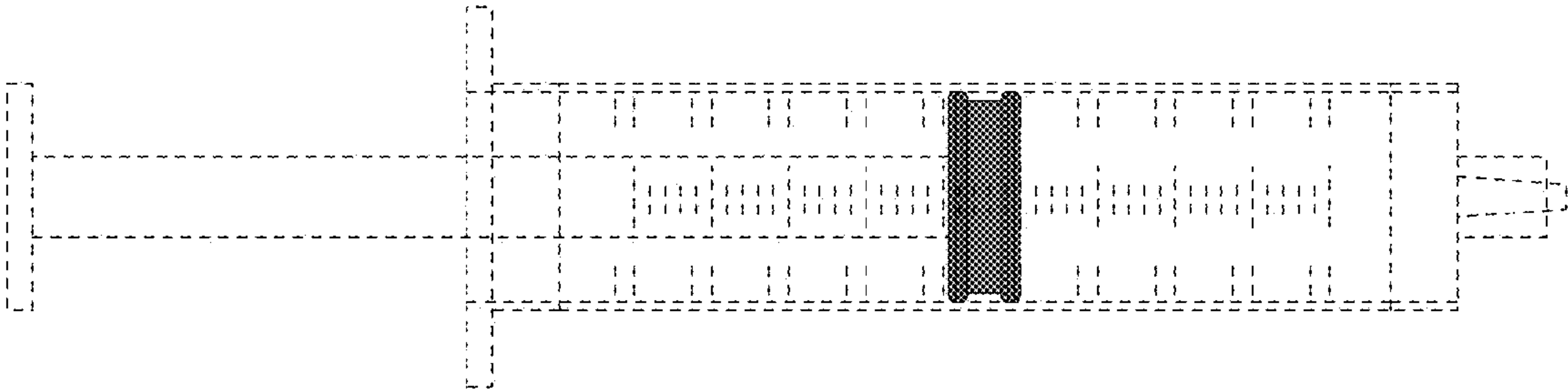


FIG. 122

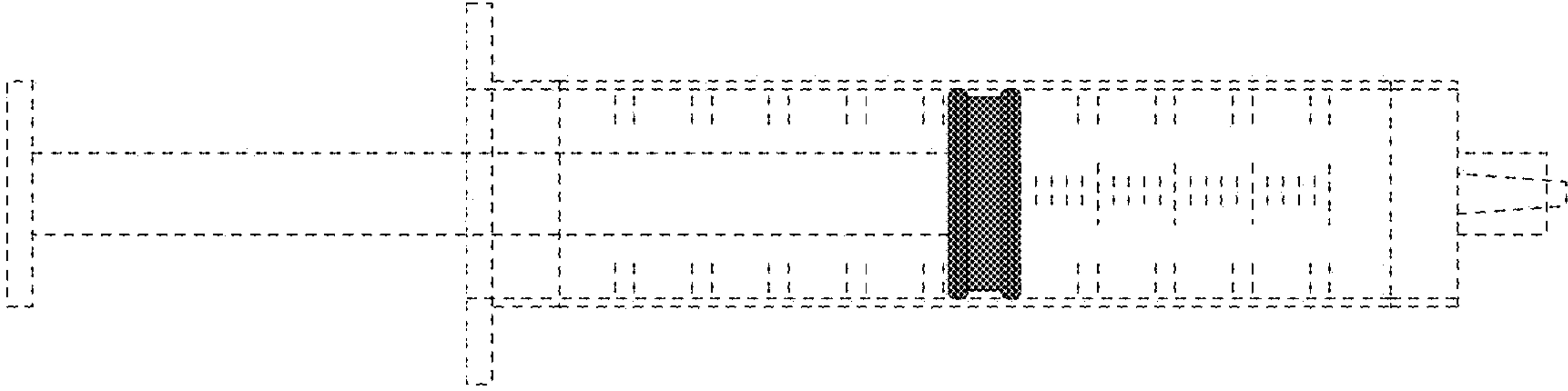


FIG. 123

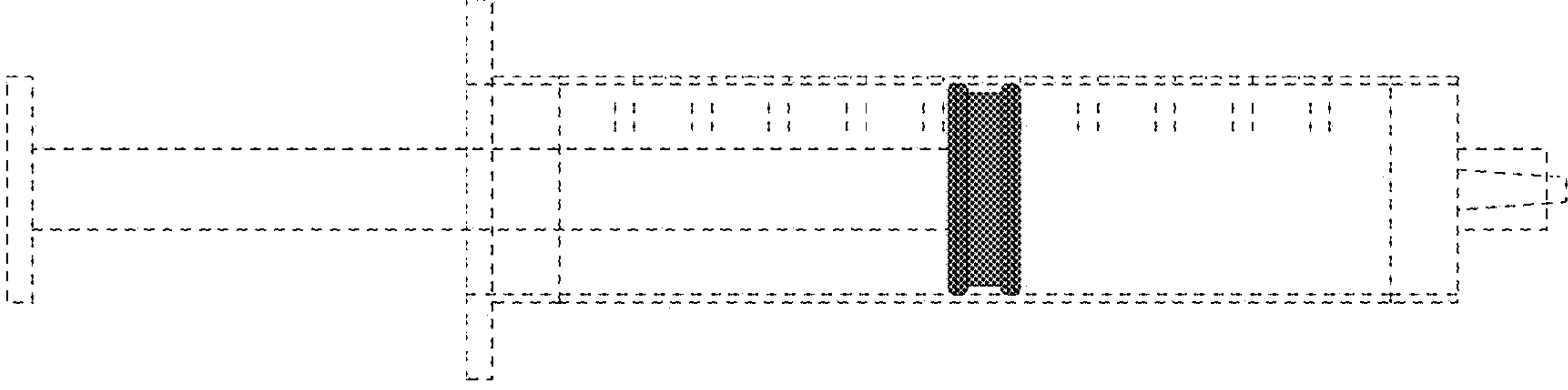


FIG. 124

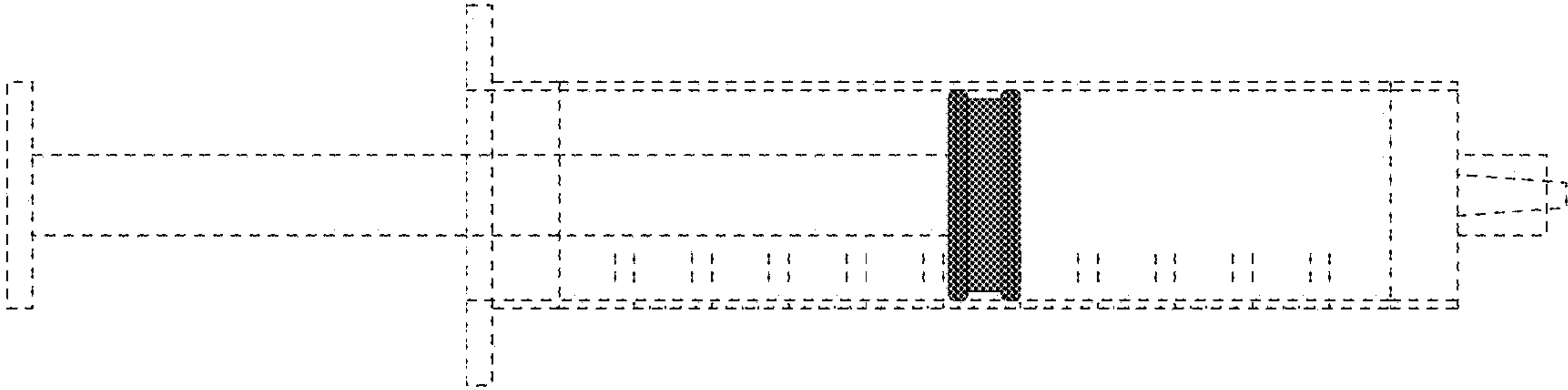


FIG. 125

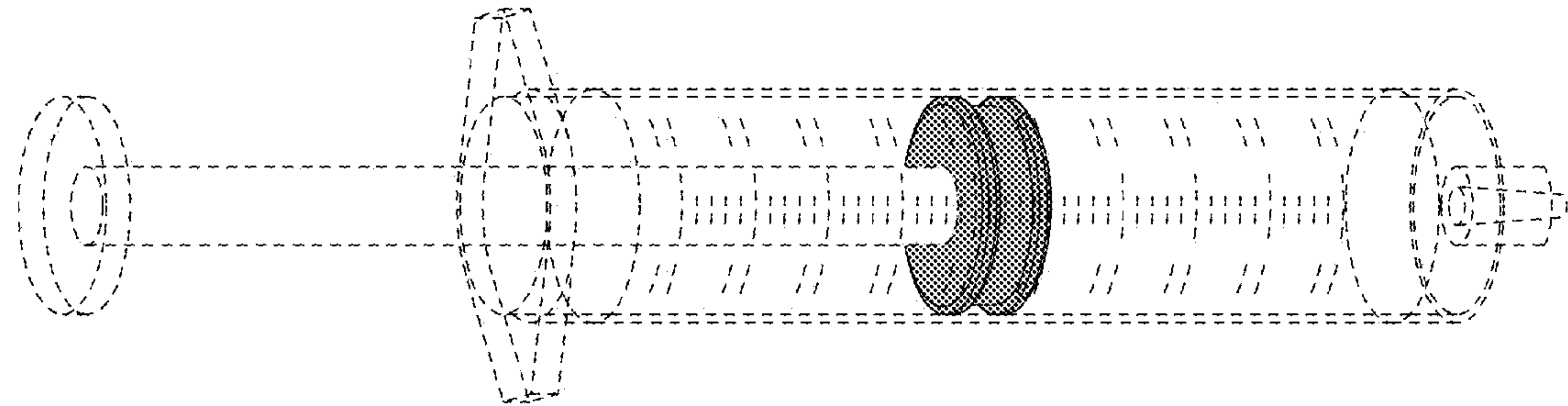


FIG. 126

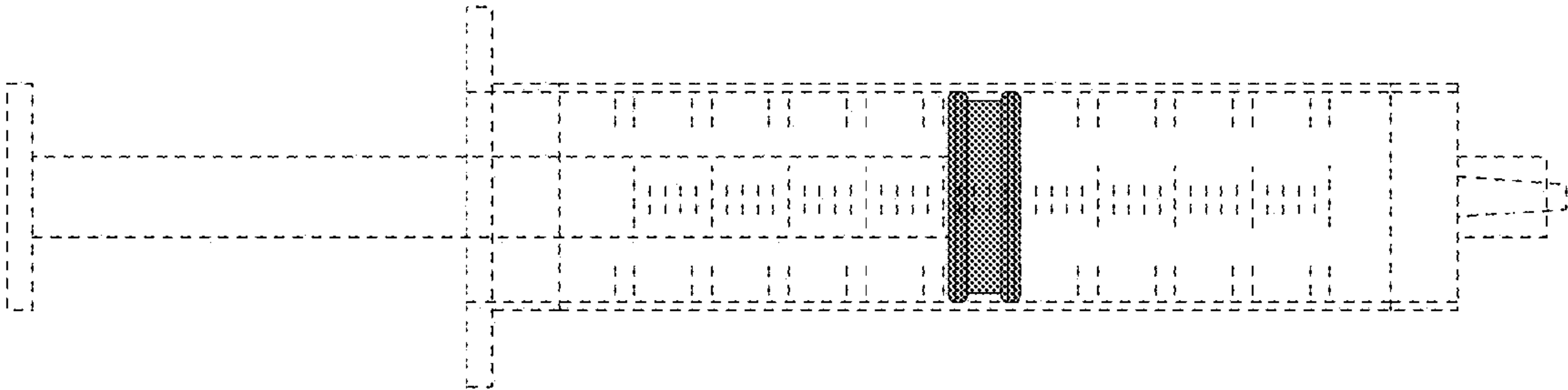


FIG. 127

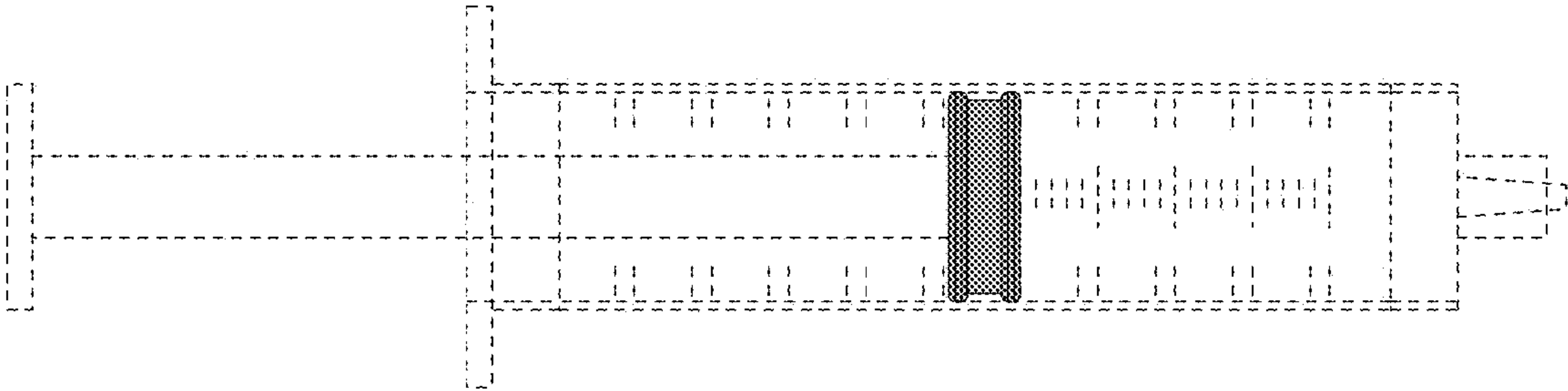


FIG. 128

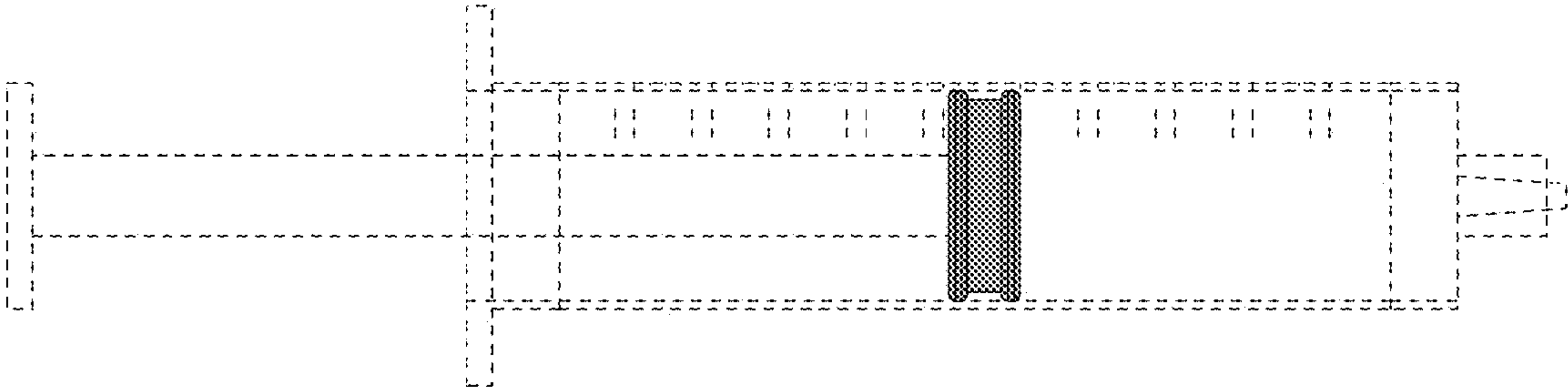


FIG. 129

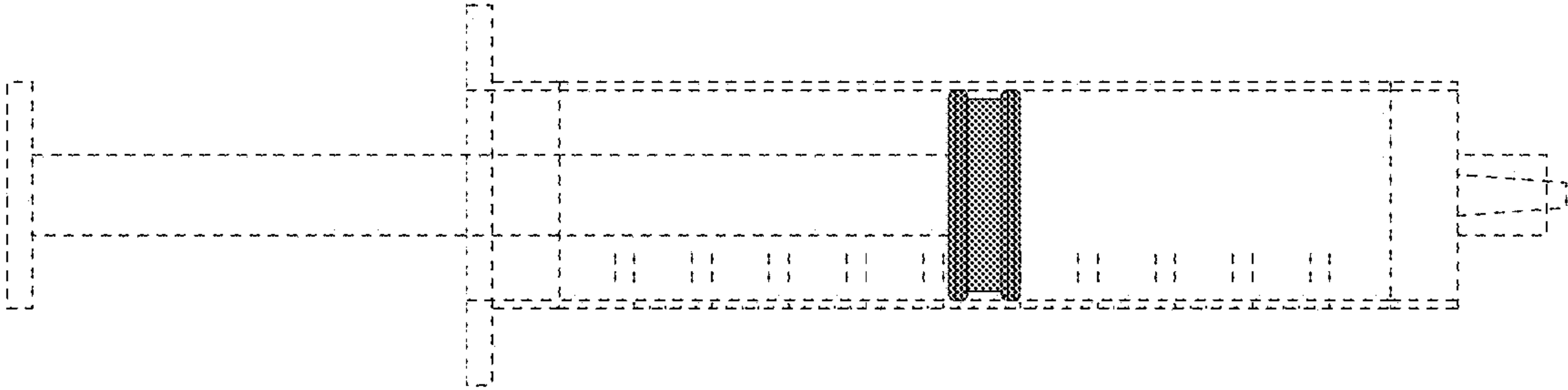


FIG. 130

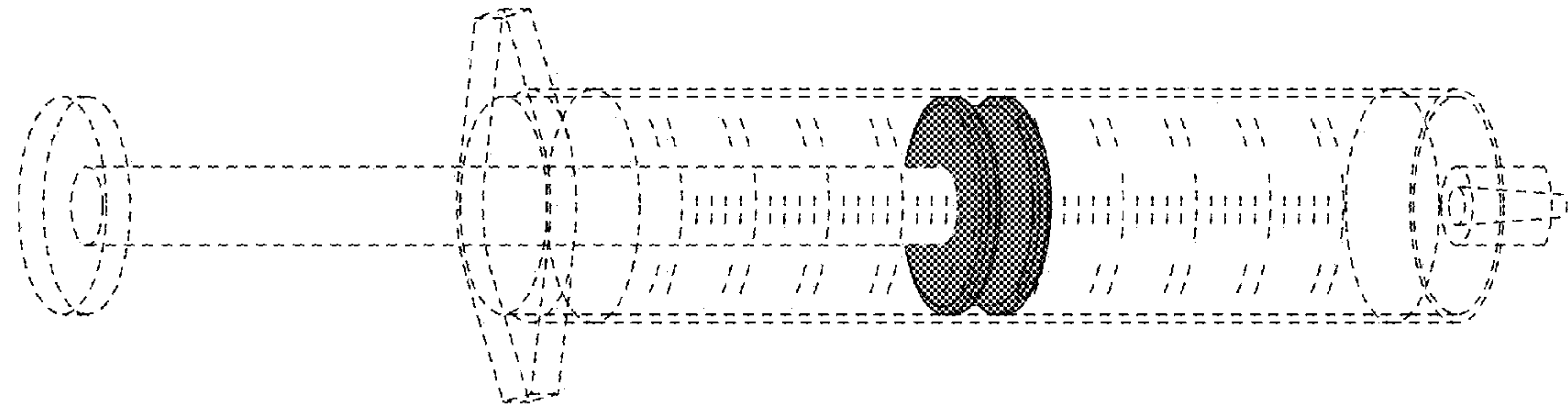


FIG. 131

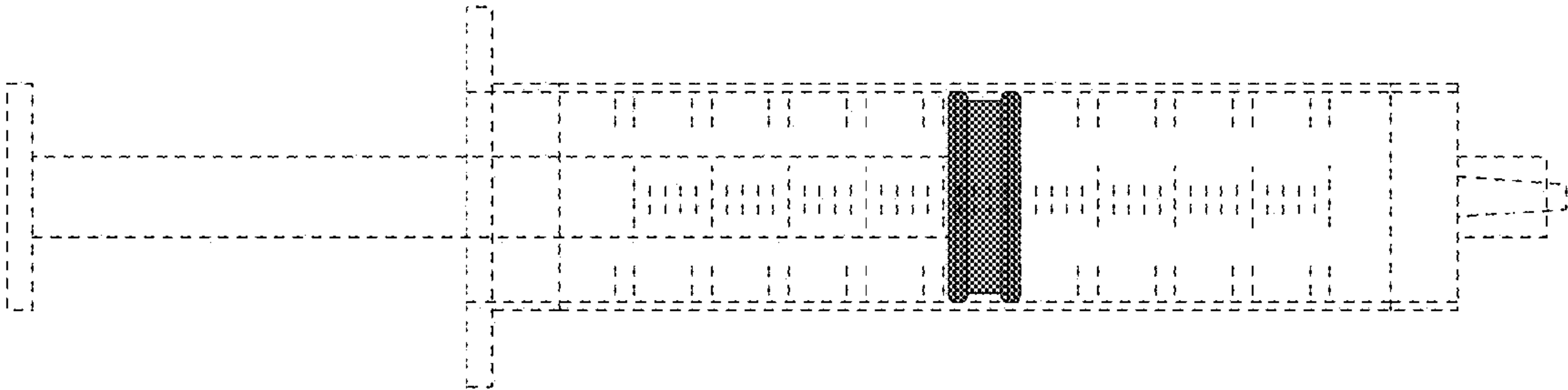


FIG. 132

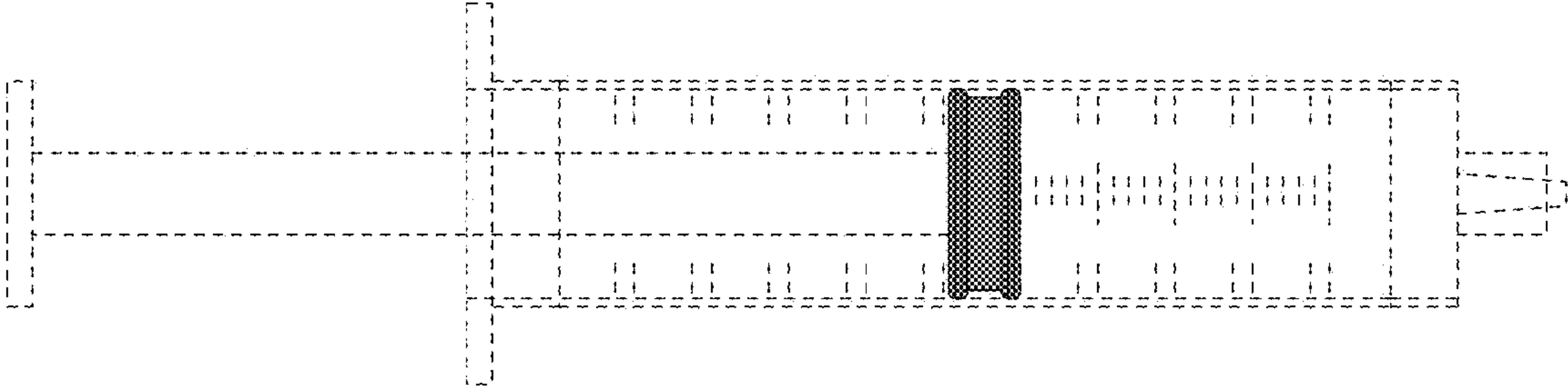


FIG. 133

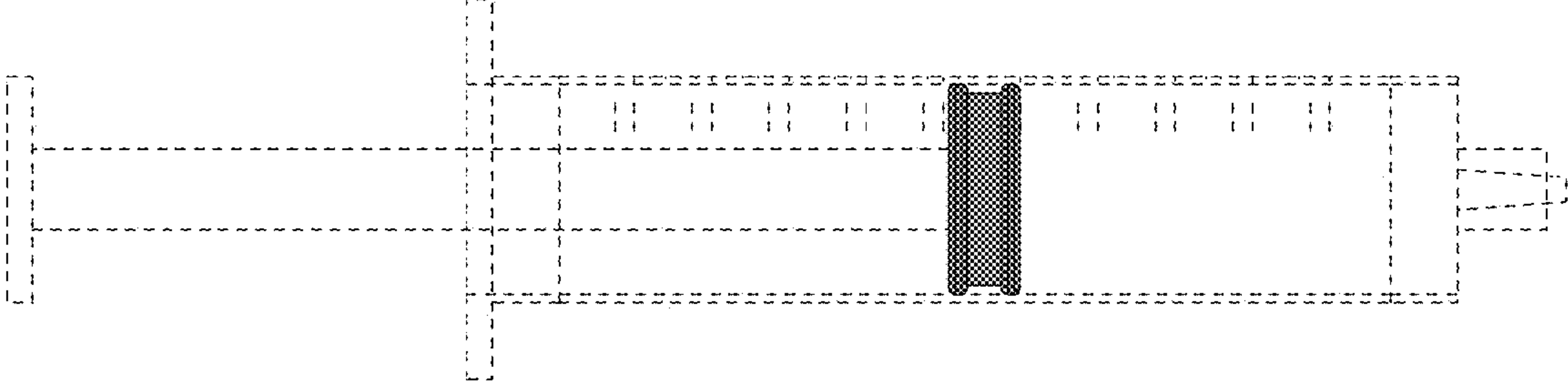


FIG. 134

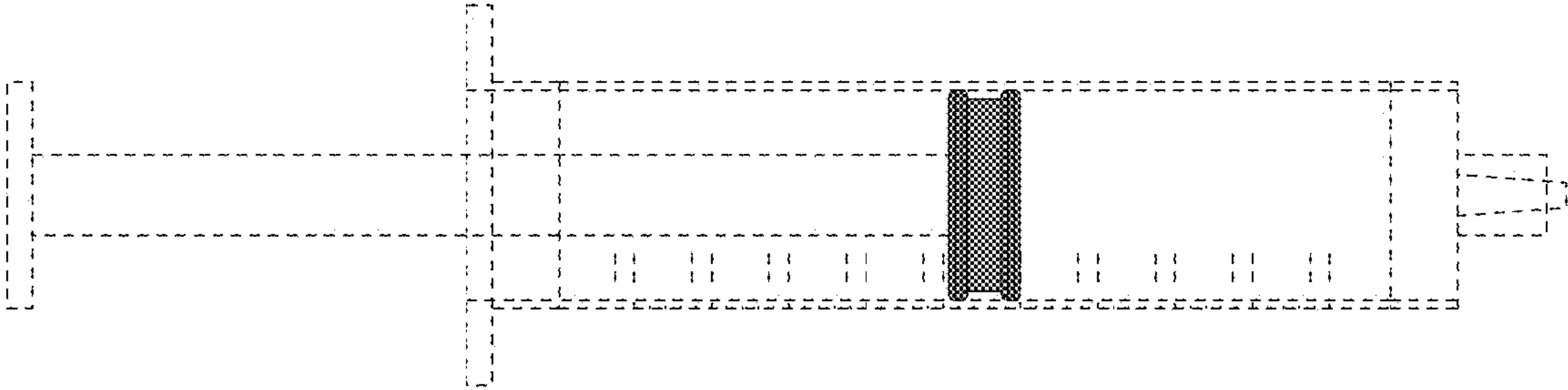


FIG. 135

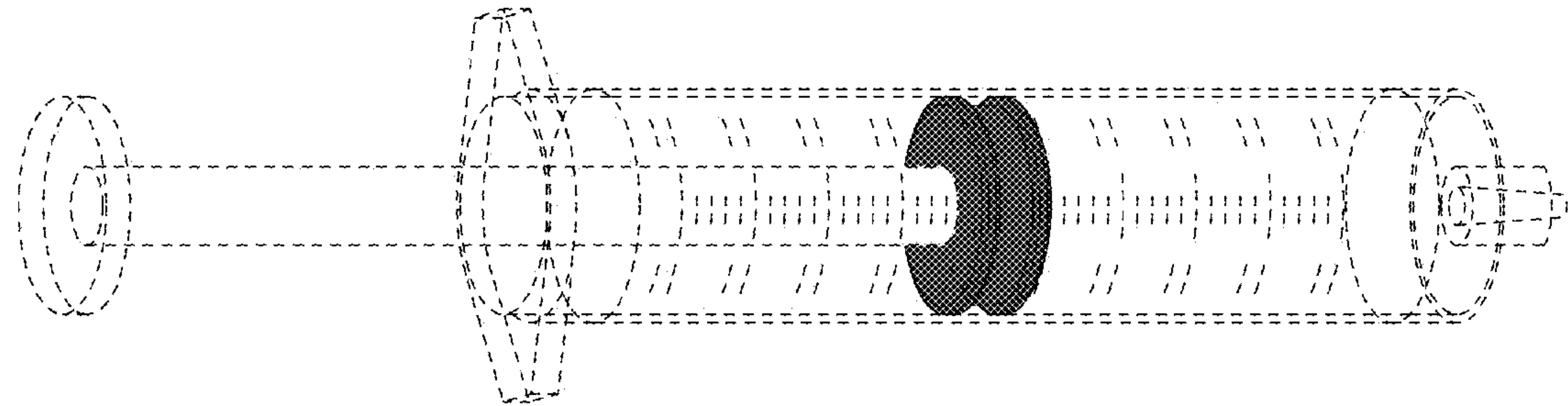


FIG. 136

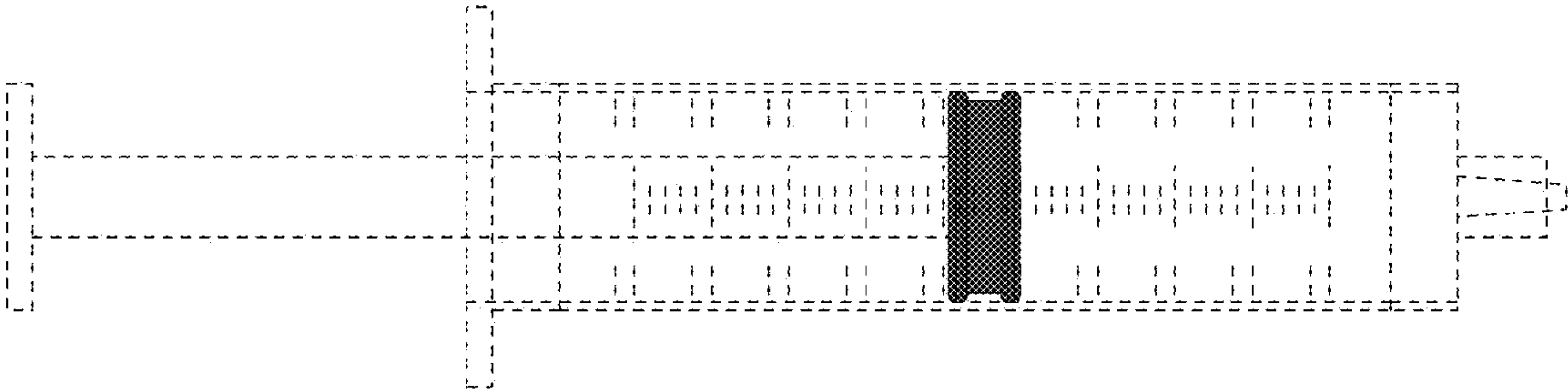


FIG. 137

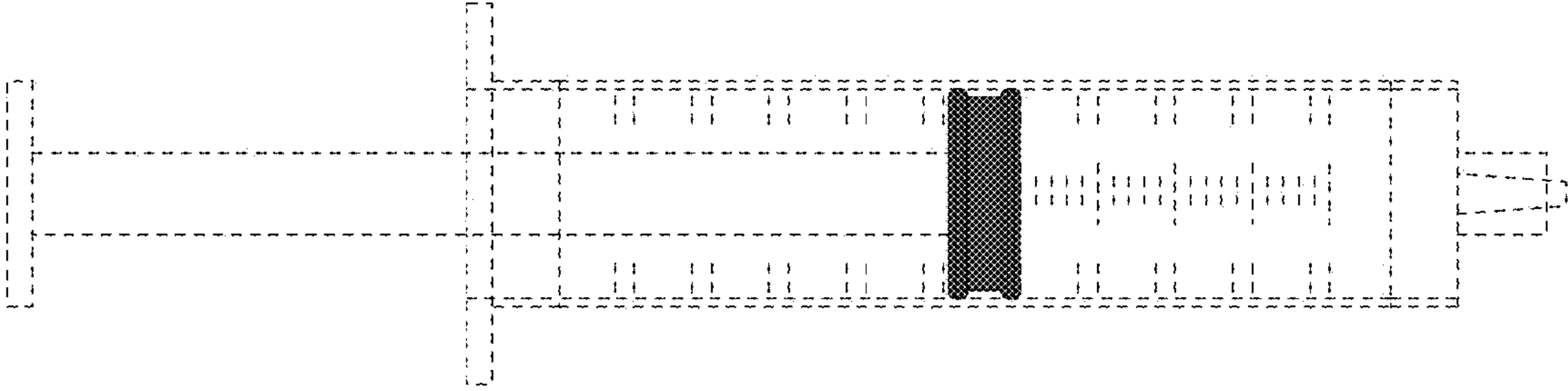


FIG. 138

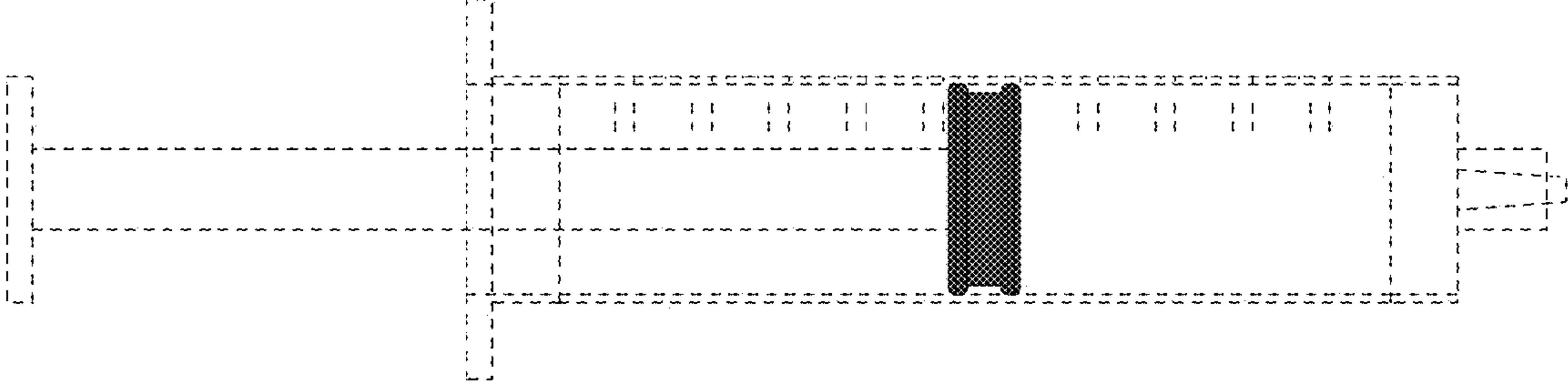


FIG. 139

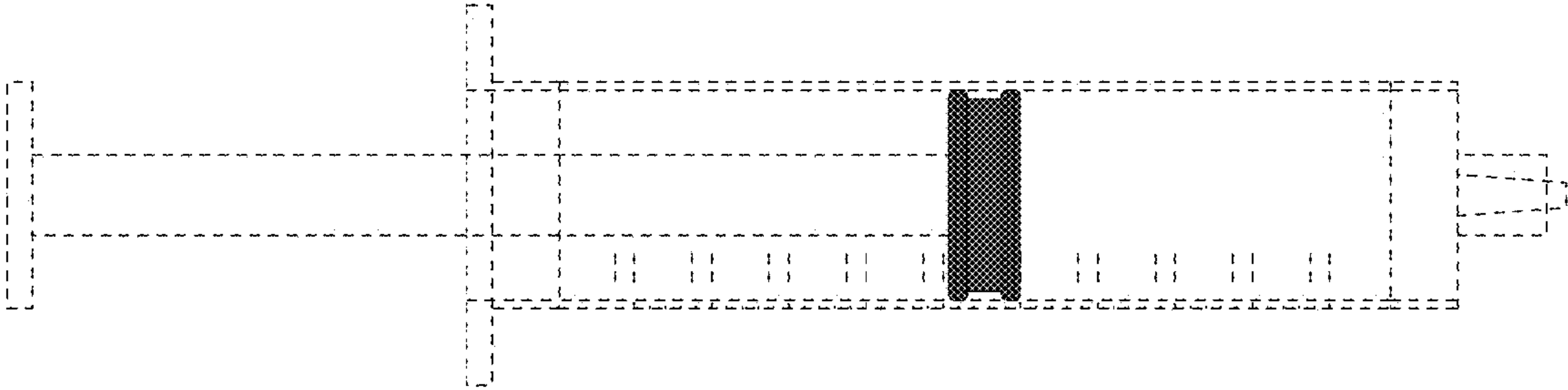


FIG. 140