



US00D889596S

(12) **United States Design Patent** (10) **Patent No.:** **US D889,596 S**
Okajima et al. (45) **Date of Patent:** **** Jul. 7, 2020**

(54) **GAS NOZZLE FOR SUBSTRATE PROCESSING APPARATUS**
(71) Applicant: **Hitachi Kokusai Electric Inc.**, Tokyo (JP)
(72) Inventors: **Yusaku Okajima**, Tokyo (JP); **Toru Kagaya**, Tokyo (JP); **Hiroaki Hiramatsu**, Tokyo (JP); **Shinya Ebata**, Tokyo (JP)
(73) Assignee: **KOKUSAI ELECTRIC CORPORATION**, Tokyo (JP)
(**) Term: **15 Years**
(21) Appl. No.: **29/649,036**
(22) Filed: **May 25, 2018**
(30) **Foreign Application Priority Data**

Dec. 27, 2017 (JP) 2017-029310
(51) **LOC (12) Cl.** **23-01**
(52) **U.S. Cl.**
USPC **D23/213**
(58) **Field of Classification Search**
USPC D7/407, 332, 334-337, 402-405, 391, D7/392.1; D24/108, 130, 141; D23/213, D23/259, 266
CPC F23D 14/045; F23D 14/16; F23D 14/48; F23D 14/50; F23D 2203/10; F23D 2203/1012; F32D 14/10; B24B 9/007; B08B 9/00; B08B 9/021; B08B 9/032; B08B 9/027; B08B 9/02
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
D58,914 S * 9/1921 Kerr D23/415
D258,309 S * 2/1981 Leighton D23/415

D322,470 S * 12/1991 Garlich D23/200
6,553,986 B1 * 4/2003 Liu F23D 14/105
126/39 R
6,851,420 B2 * 2/2005 Jennings F23D 14/045
126/39 R
D613,116 S * 4/2010 Roberts D7/407
D695,883 S * 12/2013 Vest D23/415
D771,772 S * 11/2016 Morita D23/213
(Continued)

FOREIGN PATENT DOCUMENTS

JP 1589673 S 10/2017
Primary Examiner — Derrick E Holland
Assistant Examiner — Andrew Kerr
(74) *Attorney, Agent, or Firm* — Fitch, Even, Tabin & Flannery, LLP

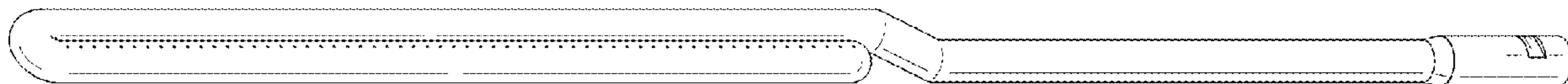
(57) **CLAIM**

We claim the ornamental design for an gas nozzle for substrate processing apparatus, as shown (and described).

DESCRIPTION

FIG. 1 is a front, bottom and left side perspective view of an gas nozzle for substrate processing apparatus showing our new design;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a rear elevational view thereof;
FIG. 4 is a left side elevational view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom plan view thereof;
FIG. 8 is an enlarged front view take along line 8-8 in FIG. 2 thereof;
FIG. 9 is a cross-sectional view take along line 9-9 in FIG. 8; and,
FIG. 10 is a cross-sectional view take along line 10-10 in FIG. 9.
The broken lines in FIG. 2 designating the enlarged view form no part of the claimed design.

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D783,351 S	4/2017	Fujino et al.	
D847,301 S *	4/2019	Yoshida	D23/213
D851,763 S *	6/2019	Mathews	D24/147
2008/0171296 A1 *	7/2008	Yen	F23D 14/105
			431/346
2010/0154775 A1 *	6/2010	Robinson	F23D 14/06
			126/39 E

* cited by examiner

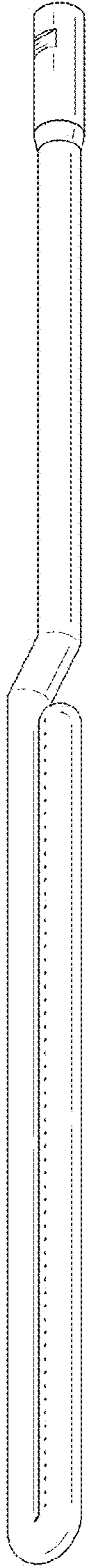


FIG. 1

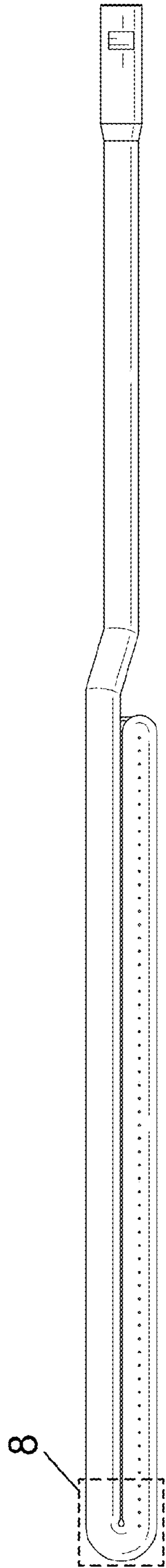


FIG. 2

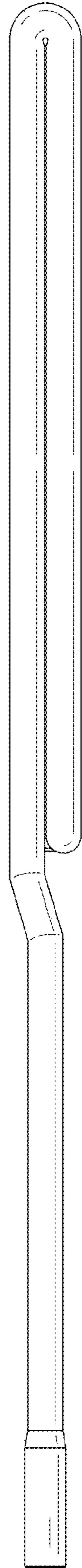


FIG. 3



FIG. 4



FIG. 5



FIG. 6

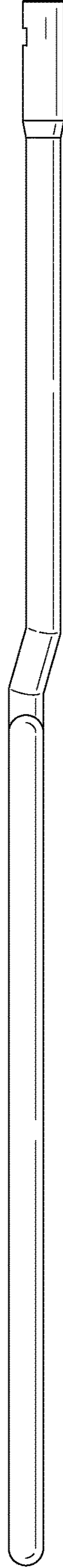


FIG. 7

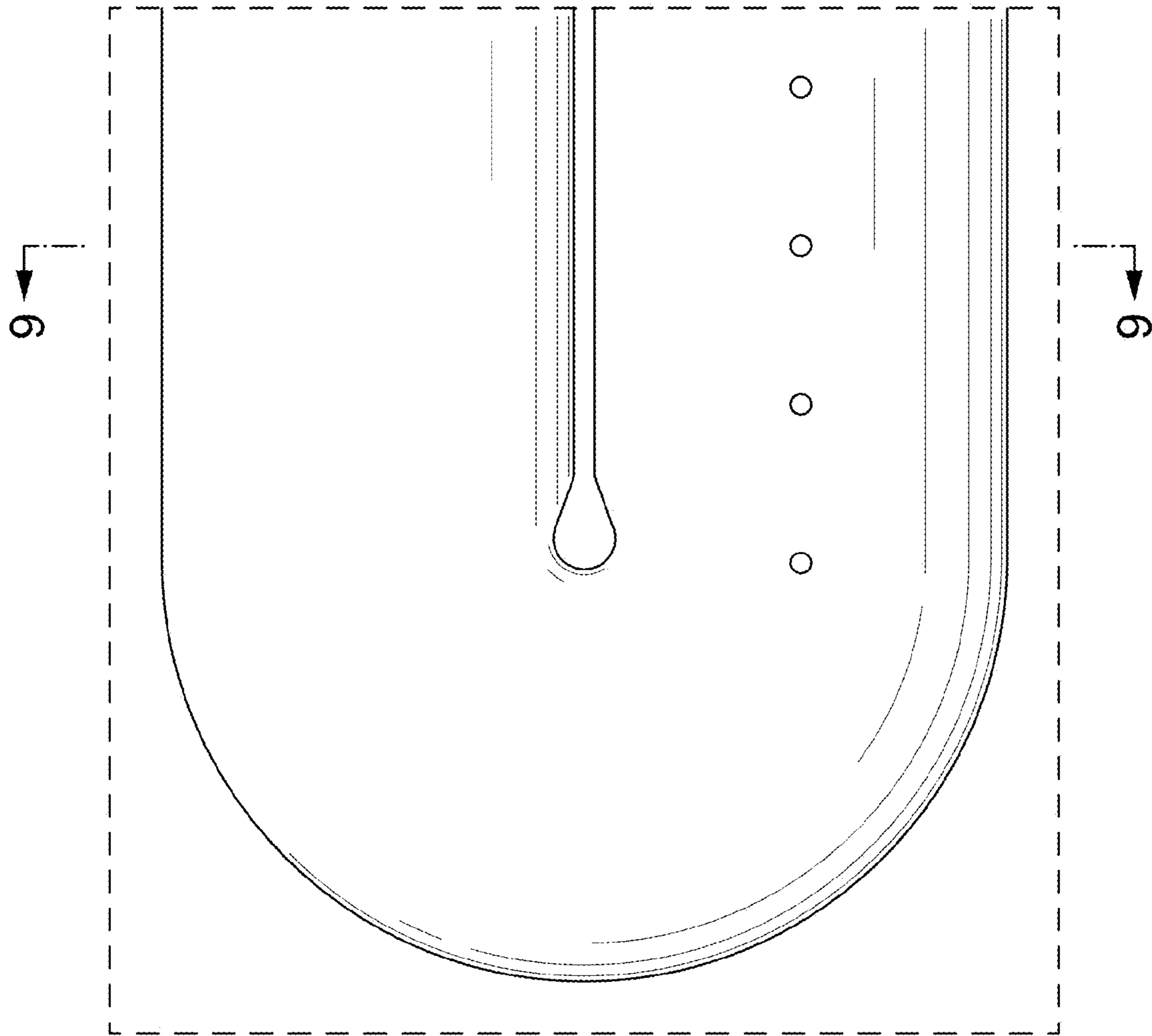


FIG. 8

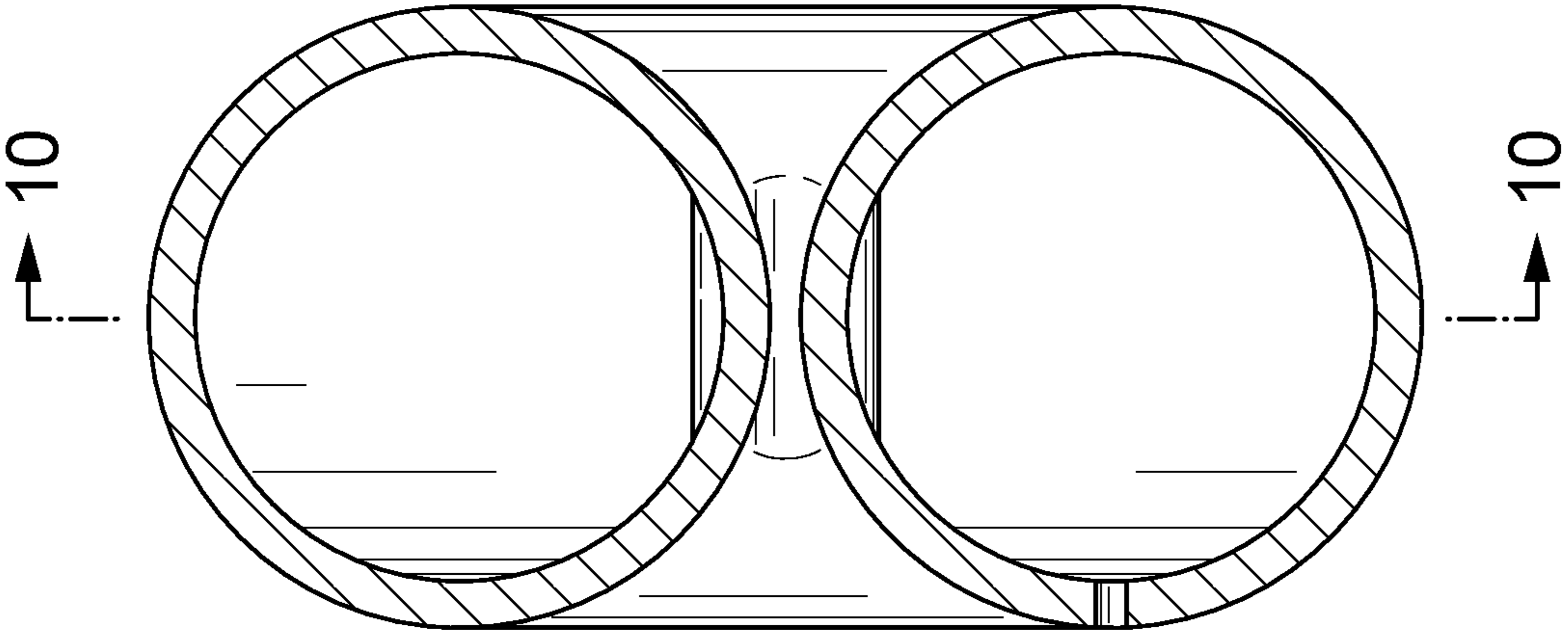


FIG. 9

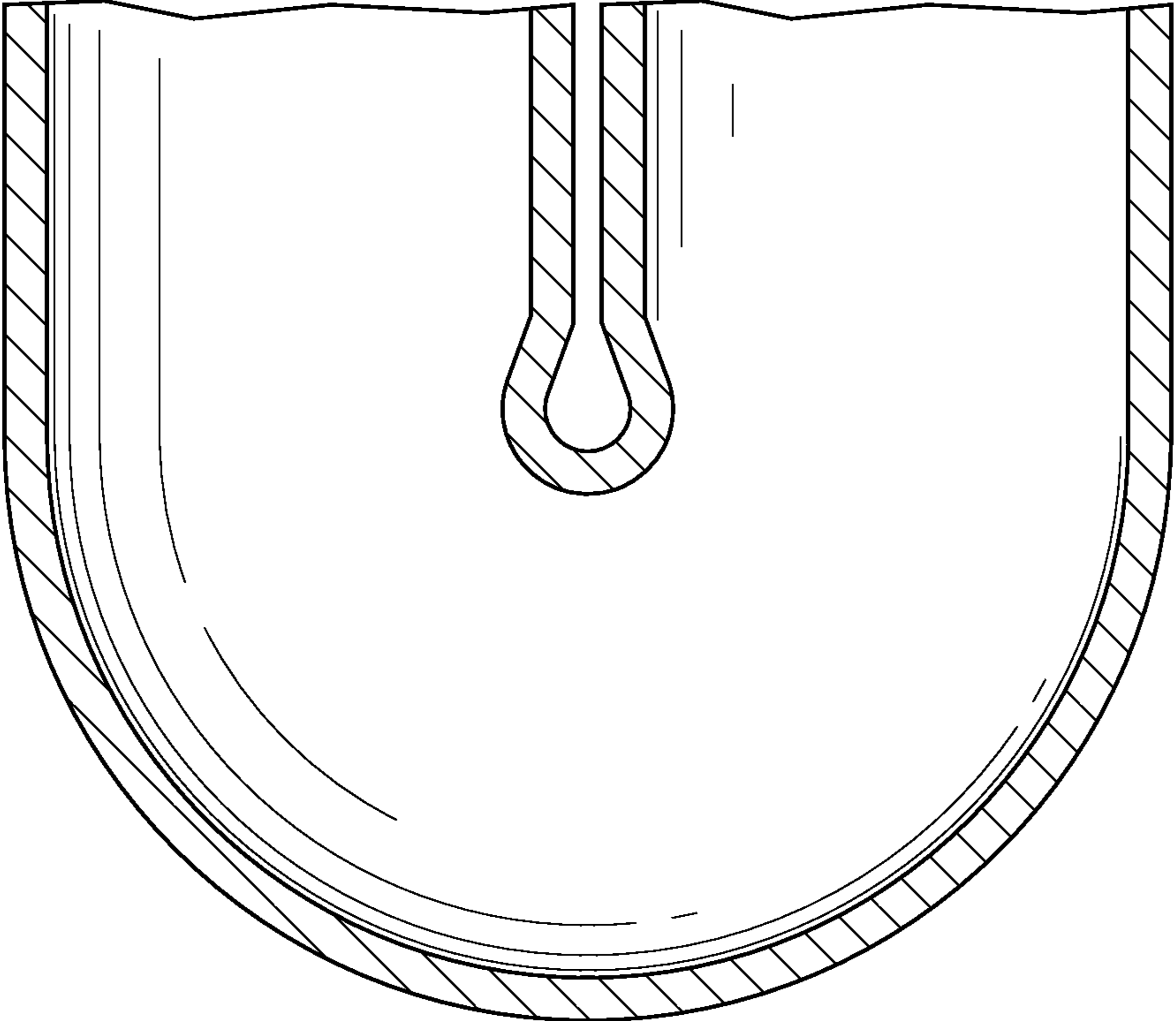


FIG. 10