



US00D972691S

(12) **United States Design Patent** (10) **Patent No.:** **US D972,691 S**
Nakao et al. (45) **Date of Patent:** **** Dec. 13, 2022**

(54) **HOLLOW FIBER MEMBRANE MODULE**

D762,823 S * 8/2016 Takahata D15/5
D763,413 S * 8/2016 Takahata D15/5
D919,061 S * 5/2021 Feng D23/266
D923,157 S * 6/2021 Lin D23/266
D929,548 S * 8/2021 Mezzalana F16L 57/04
D23/262

(71) Applicant: **TOYOBO CO., LTD.**, Osaka (JP)

(72) Inventors: **Takahito Nakao**, Osaka (JP); **Daiki Kohno**, Osaka (JP); **Yoji Abe**, Osaka (JP); **Shohei Goda**, Otsu (JP); **Shigeru Itayama**, Otsu (JP)

(Continued)

(73) Assignee: **TOYOBO CO., LTD.**, Osaka (JP)

JP 1407402 S 2/2011
JP 1407590 S 2/2011

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

(21) Appl. No.: **35/512,268**

(22) Filed: **Jan. 27, 2021**

(80) **Hague Agreement Data**

Int. Filing Date: **Jan. 27, 2021**
Int. Reg. No.: **DM/212545**
Int. Reg. Date: **Jan. 27, 2021**
Int. Reg. Pub. Date: **Jul. 30, 2021**

FOREIGN PATENT DOCUMENTS

OTHER PUBLICATIONS

Amazon—HK Store; “HK Extended Tank Drain Assembly Kits . . .”; [online] ‘<http://www.amazon.com/dp/B085XTG97Y>’; dated Mar. 15, 2020; accessed Jul. 29, 2022; 3pgs. (Year: 2020).*

(Continued)

Primary Examiner — Keli L Hill
(74) *Attorney, Agent, or Firm* — WHDA, LLP

(30) **Foreign Application Priority Data**

Jul. 29, 2020 (JP) 2020-015679 D

(51) **LOC (13) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D23/266**

(58) **Field of Classification Search**
USPC D23/259, 262–266
CPC .. F16L 11/00; F16L 11/02; F16L 11/04; F16L 11/10; F16L 11/12; F16L 11/15; F16L 35/00

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D323,207 S * 1/1992 Cole D23/266
D360,457 S * 7/1995 Levisay D23/266
D397,765 S * 9/1998 Wintering D23/266
D399,916 S * 10/1998 Wintering D23/266

(57) **CLAIM**

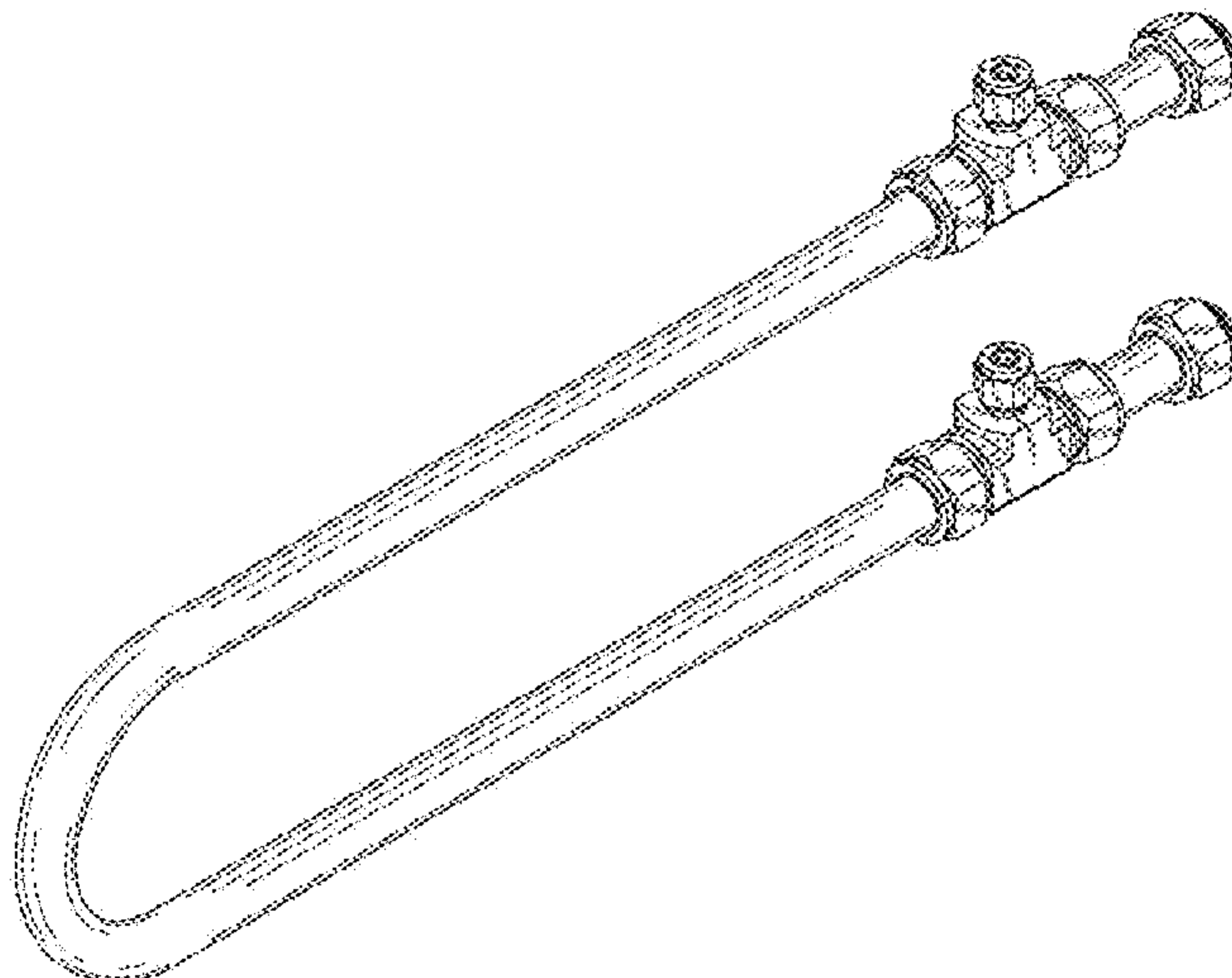
The ornamental design for a hollow fiber membrane module, as shown and described.

DESCRIPTION

- 1. Hollow fiber membrane module
- 1.1 : Front
- 1.2 : Back
- 1.3 : Right
- 1.4 : Left
- 1.5 : Top
- 1.6 : Bottom
- 1.7 : Perspective

Fig. 1.1 is a front view of the hollow fiber membrane module showing our new design; fig. 1.2 is a rear view thereof; fig. 1.3 is a right side view thereof; fig. 1.4 is a left side view thereof; fig. 1.5 is a top view thereof; fig. 1.6 is a bottom view thereof; and fig. 1.7 is a perspective view thereof.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

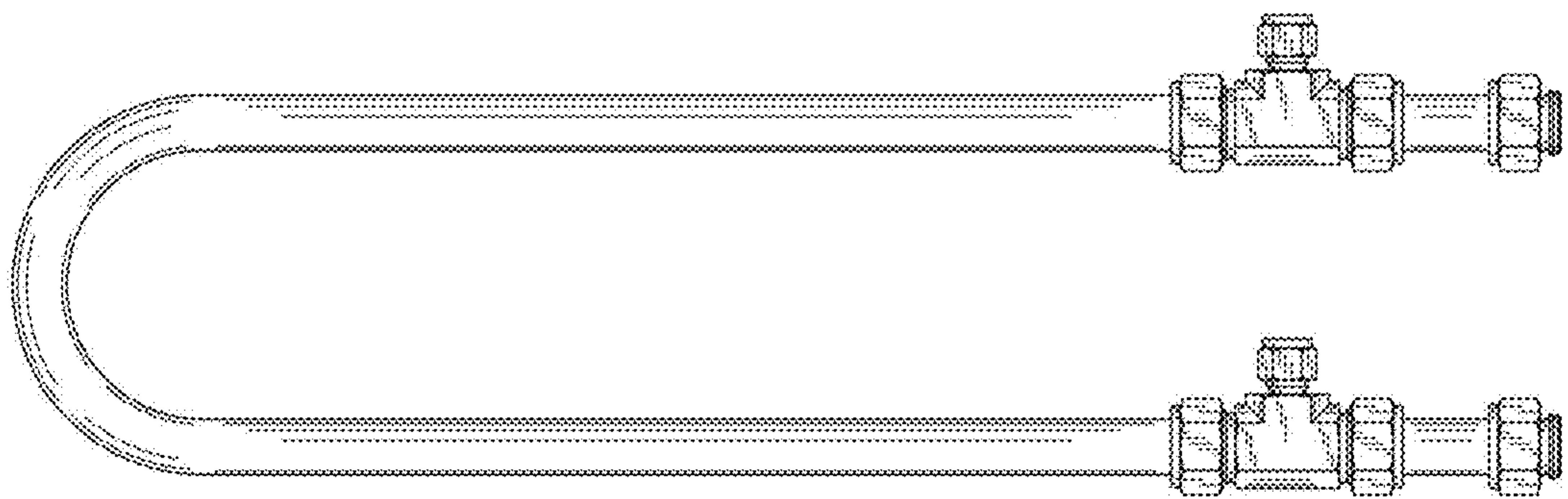
D937,992 S * 12/2021 Liu F16L 11/10
D23/266
2008/0121303 A1* 5/2008 Leggitt F16L 11/10
138/109
2008/0190506 A1* 8/2008 Cleveland F16L 57/04
138/109

OTHER PUBLICATIONS

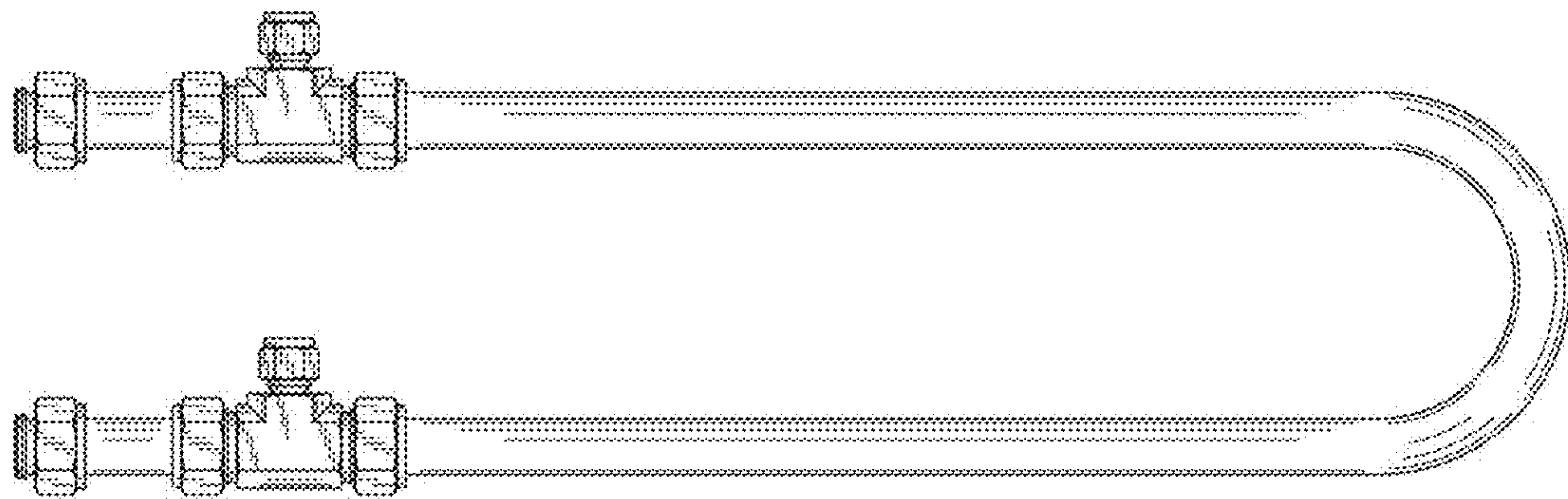
Office Action dated Jul. 21, 2021, issued in counterpart TW Application No. 110300510, with English translation. (5 pages).

* cited by examiner

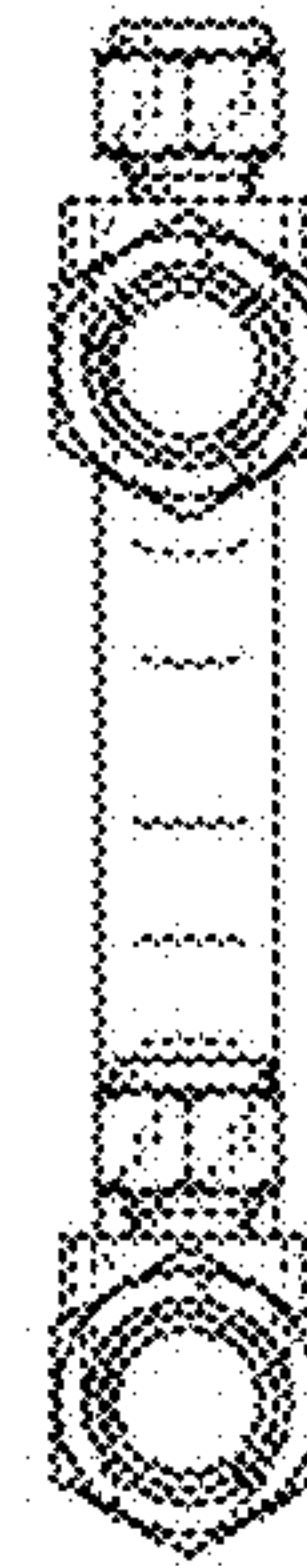
1.1



1.2



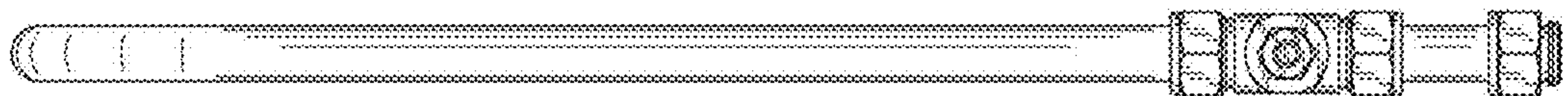
1.3



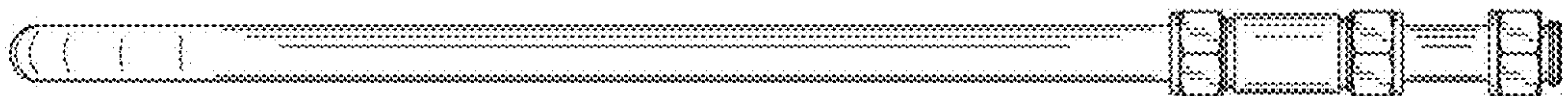
1.4



1.5



1.6



1.7

