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(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**
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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

(Continued)

FOREIGN PATENT DOCUMENTS

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

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).*

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(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

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

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(30) **Foreign Application Priority Data**

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

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

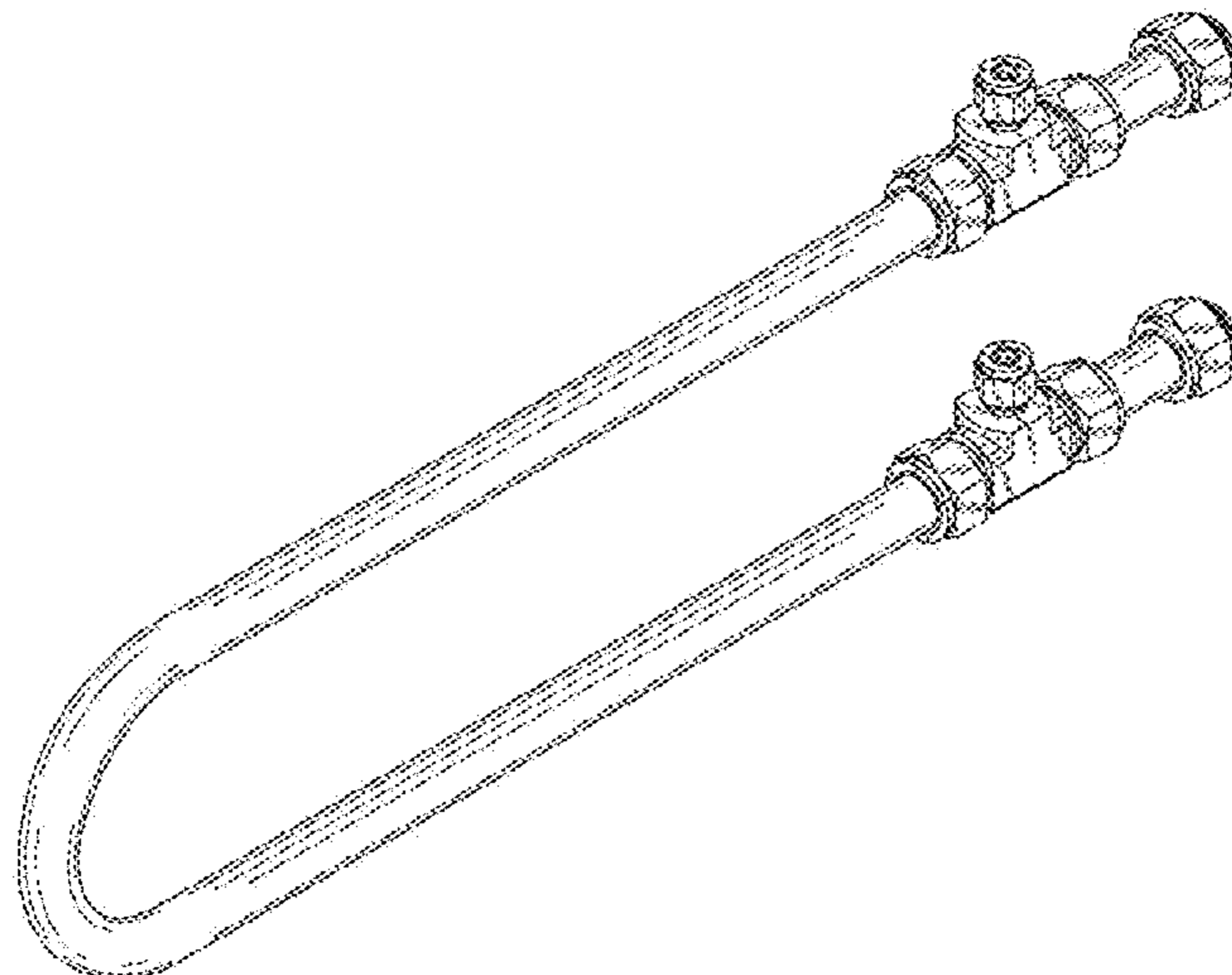
(58) **Field of Classification Search**
USPC D23/259, 262–266
CPC .. F16L 11/00; F16L 11/02; F16L 11/04; F16L 11/10; F16L 11/12; F16L 11/15; F16L 35/00

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



(56)

References Cited

U.S. PATENT DOCUMENTS

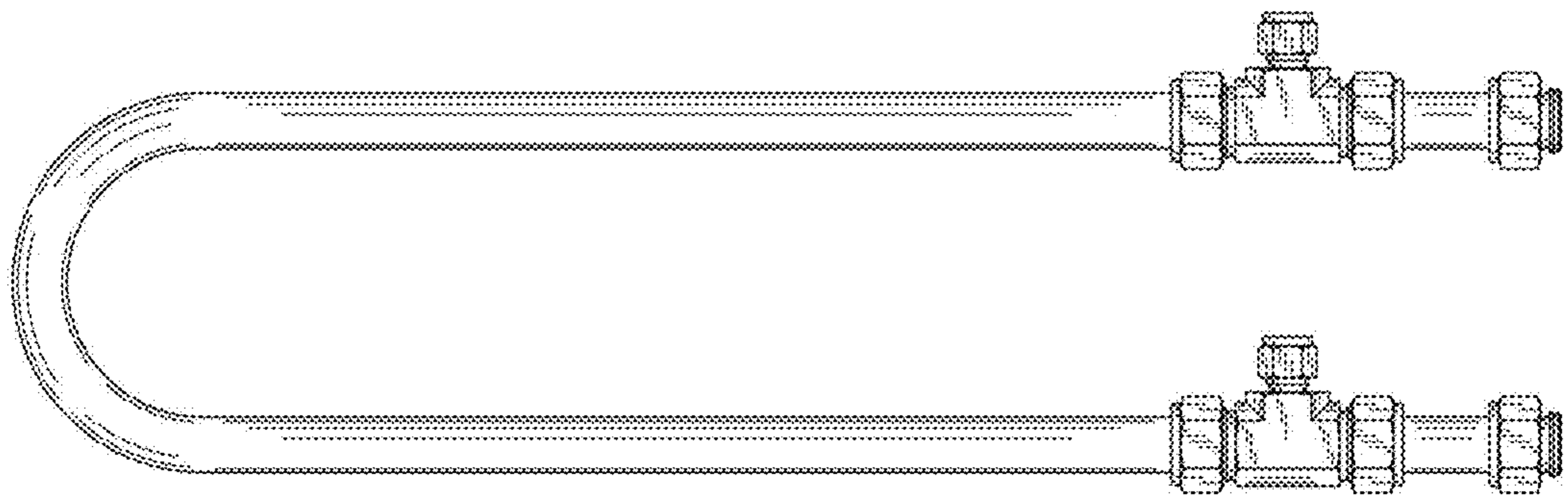
D937,992 S * 12/2021 Liu F16L 11/10
D23/266
2008/0121303 A1* 5/2008 Leggitt F16L 11/10
138/109
2008/0190506 A1* 8/2008 Cleveland F16L 57/04
138/109

OTHER PUBLICATIONS

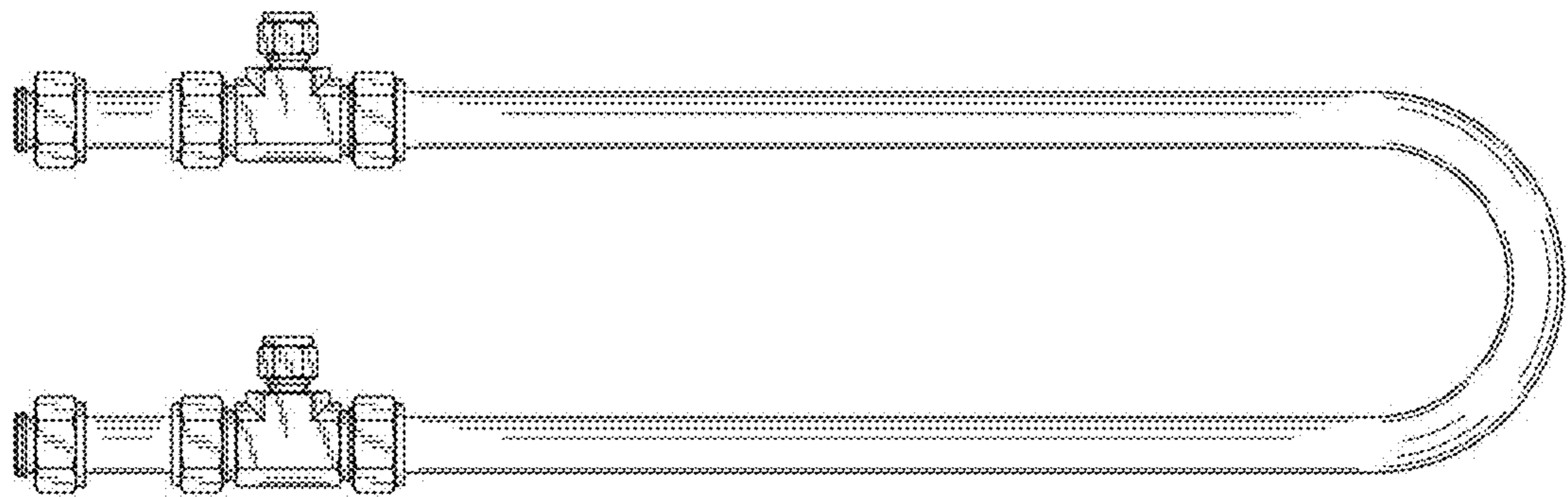
Office Action dated Jul. 21, 2021, issued in counterpart TW Appli-
cation No. 110300510, with English translation. (5 pages).

* cited by examiner

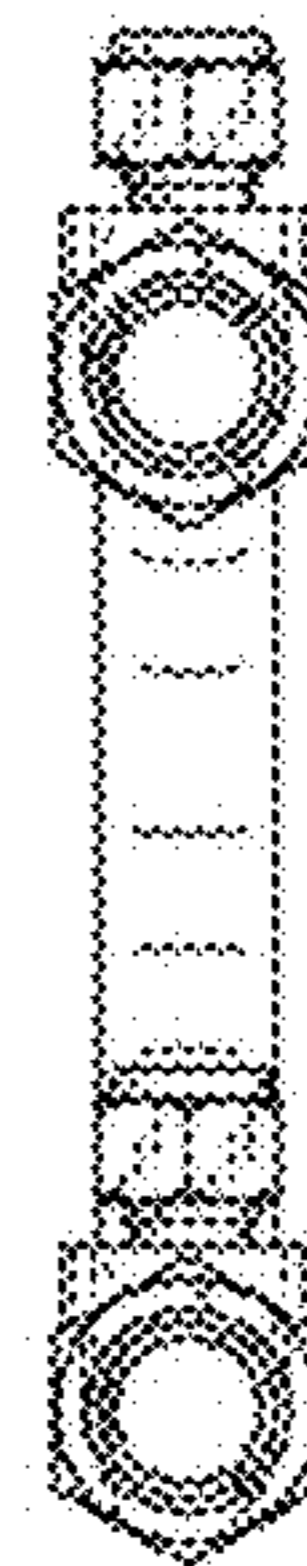
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1.2



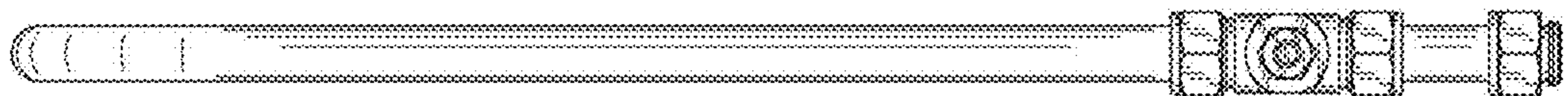
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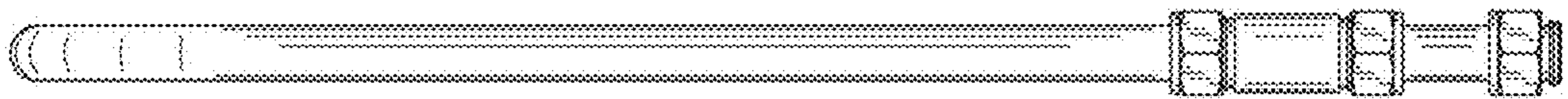
1.4



1.5



1.6



1.7

