



US00D998923S

(12)

United States Design Patent

Qiu et al.

(10)

Patent No.:

US D998,923 S

(45)

Date of Patent:

** Sep. 12, 2023

(54) DUST FILTER FOR CLEANING ROBOT

OTHER PUBLICATIONS

(71) Applicant: **Beijing Roborock Technology Co., Ltd.**, Beijing (CN)

(72) Inventors: **Shuaibing Qiu**, Beijing (CN); **Zhibin Zhang**, Beijing (CN); **Lingxing Zeng**, Beijing (CN)

(73) Assignee: **BEIJING ROBOROCK TECHNOLOGY CO., LTD.**, Beijing (CN)

Notice of Allowance issued in counterpart Taiwanese Patent Application No. 111302427 dated Sep. 28, 2022.

Primary Examiner — Kimberly Barnes

(74) *Attorney, Agent, or Firm* — Morgan, Lewis & Bockius LLP

(**) Term: 15 Years

(21) Appl. No.: 35/514,270

(22) Filed: Apr. 26, 2022

(80) Hague Agreement Data

Int. Filing Date: Apr. 26, 2022

Int. Reg. No.: DM/220552

Int. Reg. Date: Apr. 26, 2022

Int. Reg. Pub. Date: May 13, 2022

(30) Foreign Application Priority Data

Jan. 11, 2022 (CN) 202230016076.9

(51) LOC (14) Cl. 15-05

(52) U.S. Cl. D32/31

(58) Field of Classification Search

USPC D32/25, 30, 31

(Continued)

(56) References Cited

U.S. PATENT DOCUMENTS

3,246,457 A * 4/1966 De Baun F24F 13/28 210/488

5,509,950 A * 4/1996 van de Graaf F02M 35/024 55/497

(Continued)

(57) CLAIM

The ornamental design for a dust filter for a cleaning robot, as shown and described.

DESCRIPTION

1.1 is a front view of a dust filter for cleaning robot showing a first embodiment of our new design;

1.2 is a cross-sectional view taken along line A-A in 1.1;

1.3 is a cross-sectional view taken along line B-B in 1.1;

1.4 is a back view thereof;

1.5 is a left view thereof;

1.6 is a right view thereof;

1.7 is a top view thereof;

1.8 is an enlarged top view thereof;

1.9 is a bottom view thereof;

1.10 is an enlarged bottom view thereof;

1.11 is a front perspective view thereof;

1.12 is a front, top perspective view thereof;

1.13 is an enlarged view of part C marked in 1.12;

1.14 is a front, bottom perspective view thereof;

1.15 is an enlarged view of part D marked in 1.14;

1.16 is a back, left perspective view thereof;

2.1 is a front view of a dust filter for cleaning robot showing a second embodiment;

2.2 is a back view thereof;

2.3 is a left view thereof;

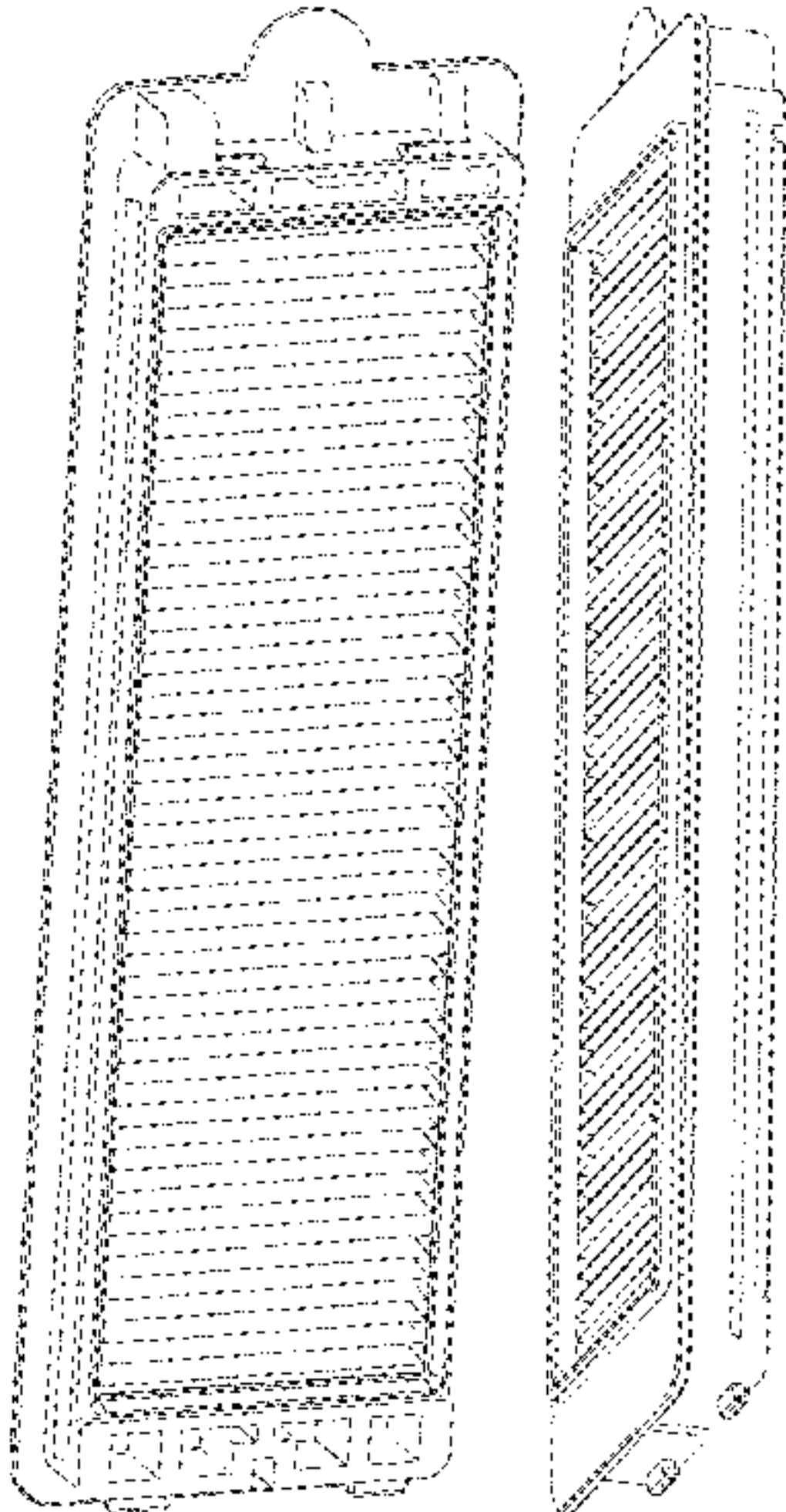
2.4 is a right view thereof;

2.5 is a top view thereof;

2.6 is a bottom view thereof;

2.7 is a front perspective view thereof;

(Continued)



2.8 is a front, top perspective view thereof;
2.9 is a front, bottom perspective view thereof; and
2.10 is a back, left perspective view thereof.

1 Claim, 26 Drawing Sheets

(58) **Field of Classification Search**
CPC . A47L 9/16; A47L 9/1683; A47L 9/12; A47L
9/122; A47L 9/10; A47L 9/102; A47L
9/106; A47L 9/108
See application file for complete search history.

(56) **References Cited**

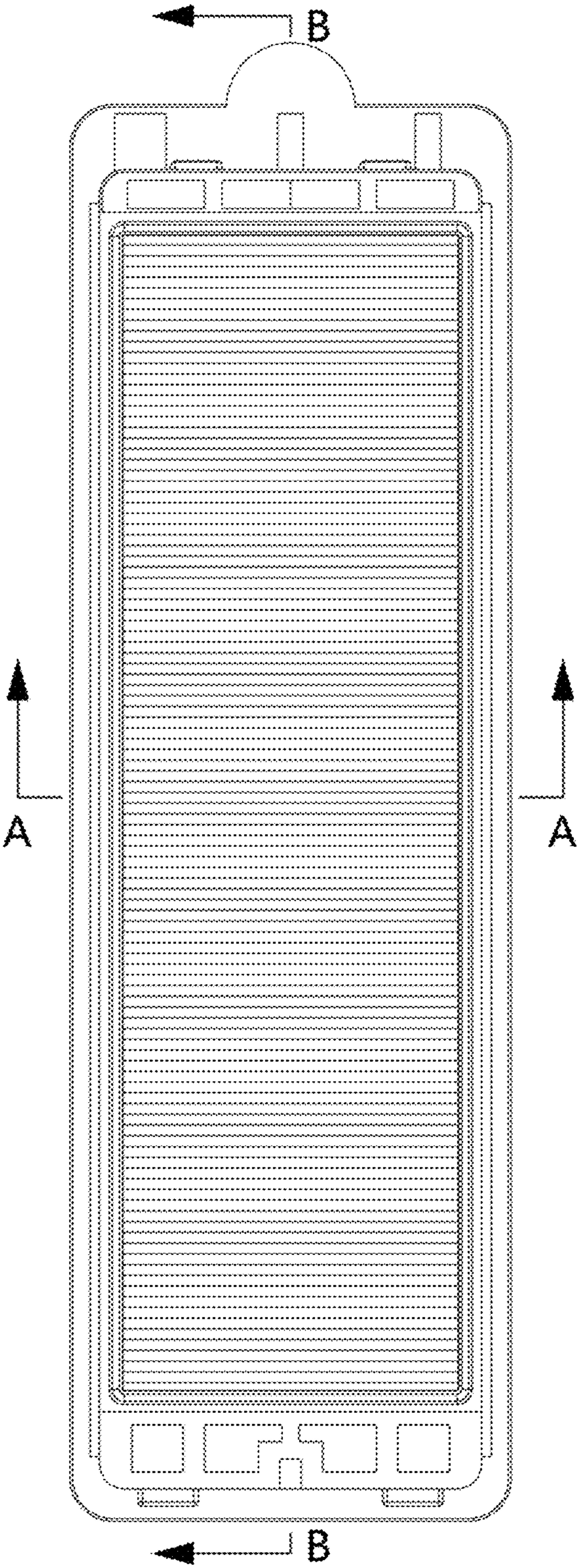
U.S. PATENT DOCUMENTS

5,525,145 A * 6/1996 Hodge B01D 46/10
55/516
6,033,453 A * 3/2000 Weddell, III B01D 46/10
55/497
6,740,136 B2 * 5/2004 Duffy B01D 29/031
55/497

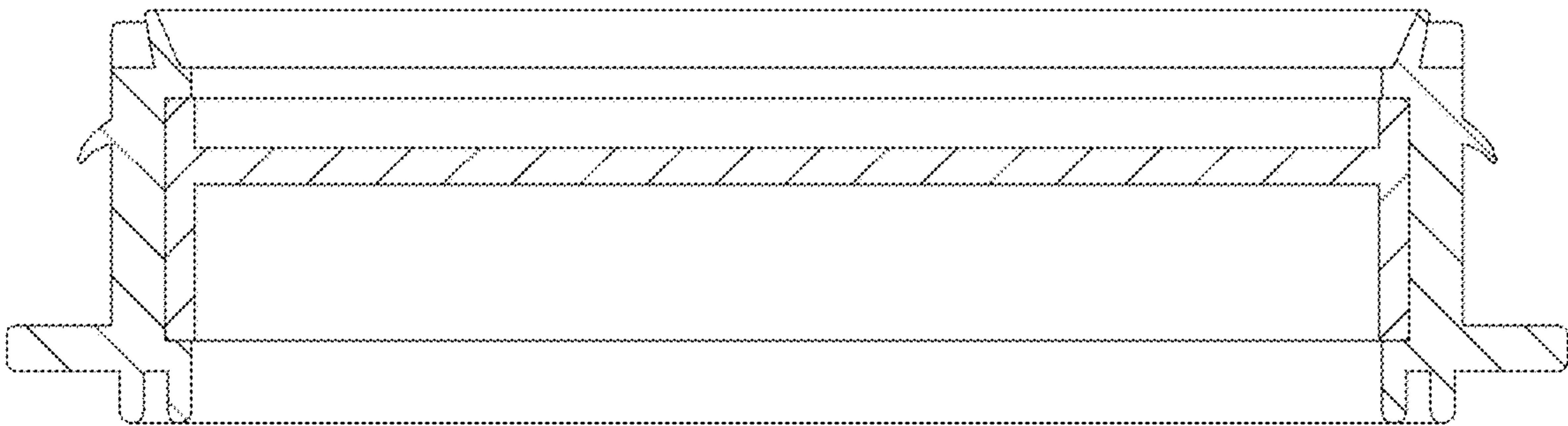
6,814,660 B1 * 11/2004 Cavett B01D 46/10
454/284
6,875,255 B2 * 4/2005 Alford A47L 9/122
55/486
7,070,641 B1 * 7/2006 Gunderson B01J 20/20
55/497
D538,418 S * 3/2007 Pippel D23/209
D568,014 S * 4/2008 Fester D32/31
7,797,791 B2 * 9/2010 White A47L 9/122
15/352
8,187,355 B2 * 5/2012 Kim B01D 46/10
55/497
D747,576 S * 1/2016 Fjellman D32/30
D809,115 S 1/2018 Morin
10,155,431 B2 * 12/2018 Luley B01D 46/521
D862,017 S 10/2019 Dou et al.
D898,177 S * 10/2020 Guo D23/365
D947,347 S * 3/2022 Lim D23/365
2004/0194249 A1 * 10/2004 Lee A47L 9/122
15/347
2005/0022490 A1 * 2/2005 Huang B01D 46/10
55/497

* cited by examiner

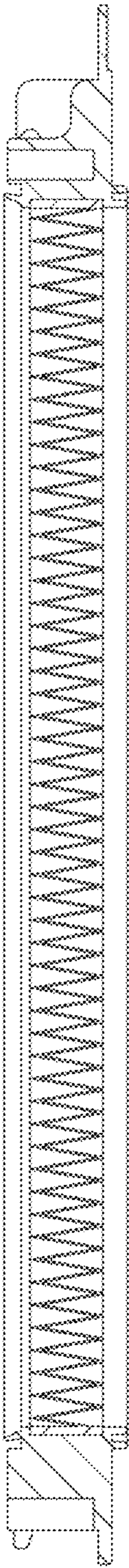
1.1



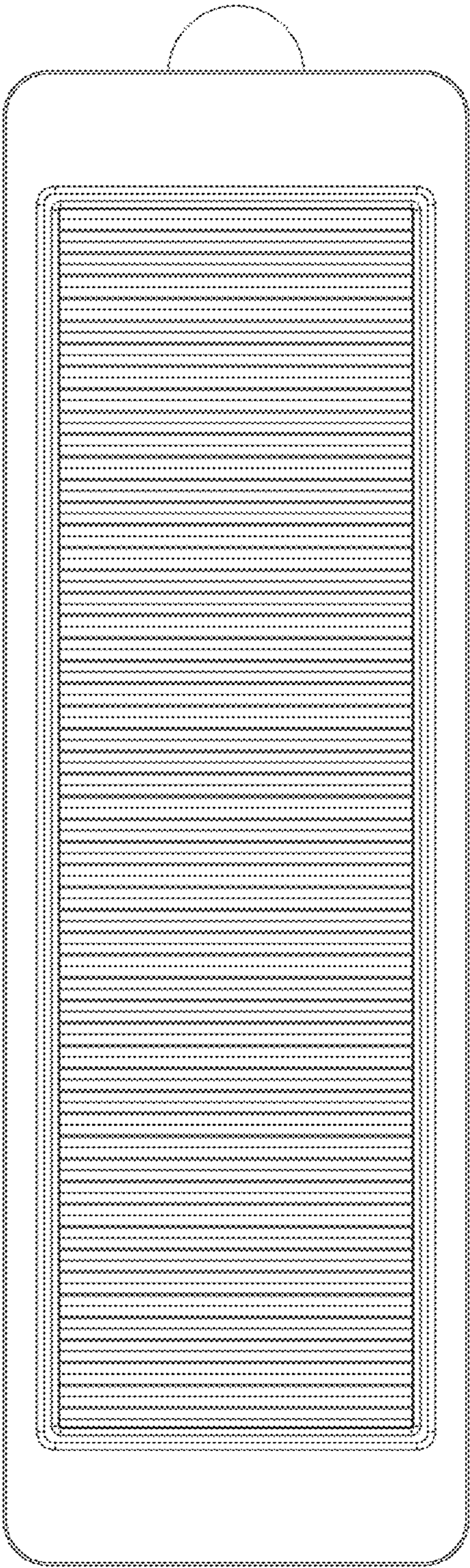
1.2



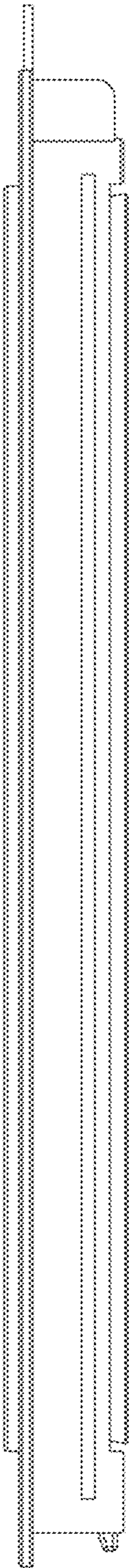
1.3



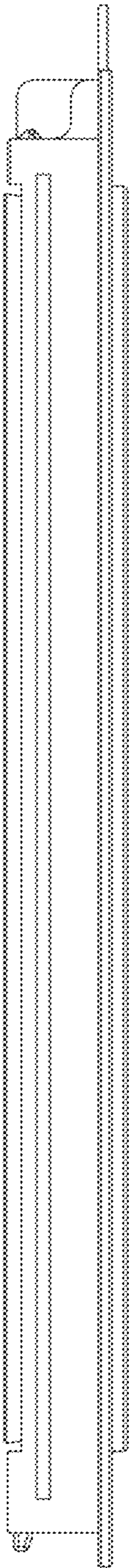
1.4



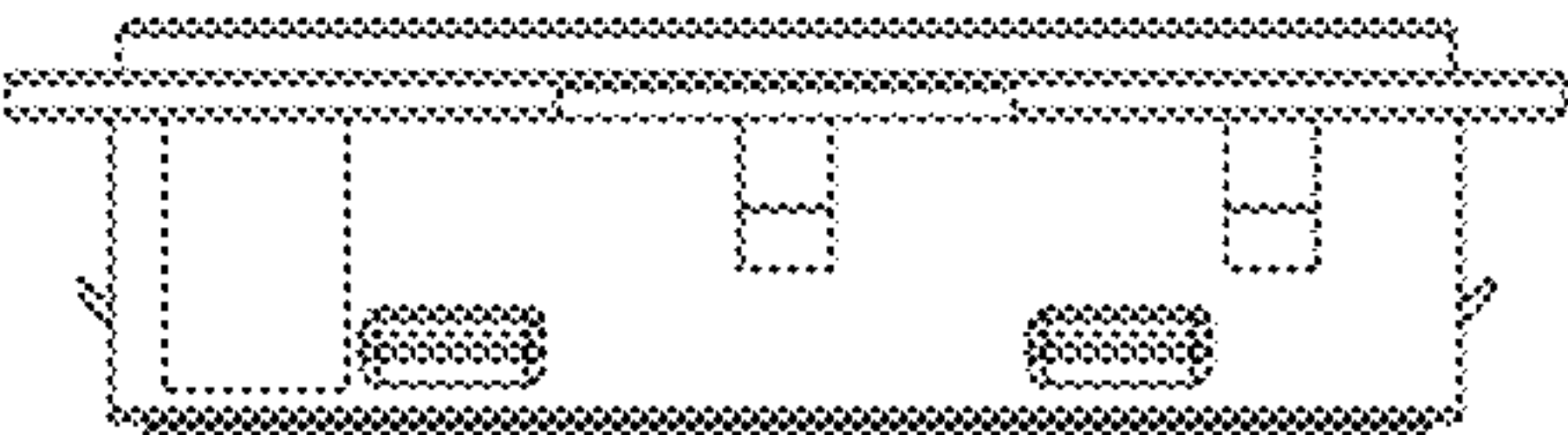
1.5



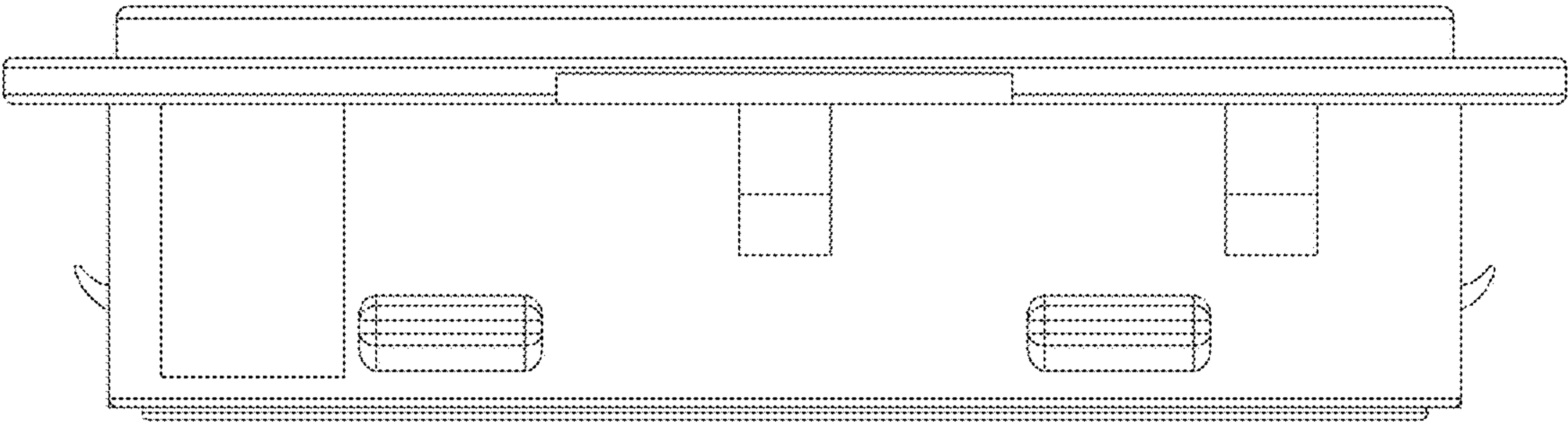
1.6



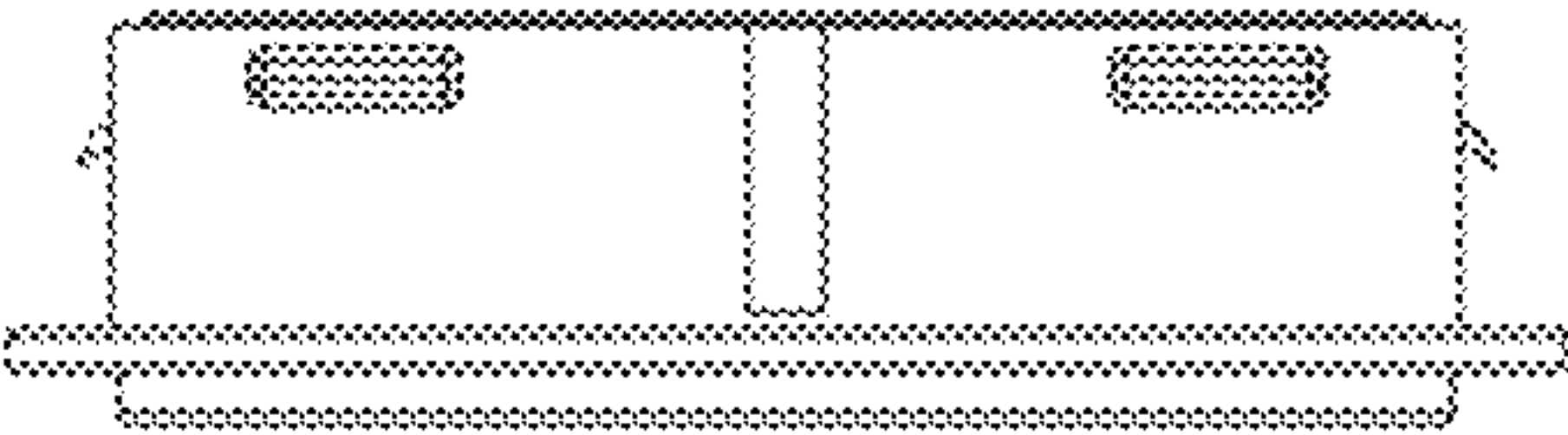
1.7



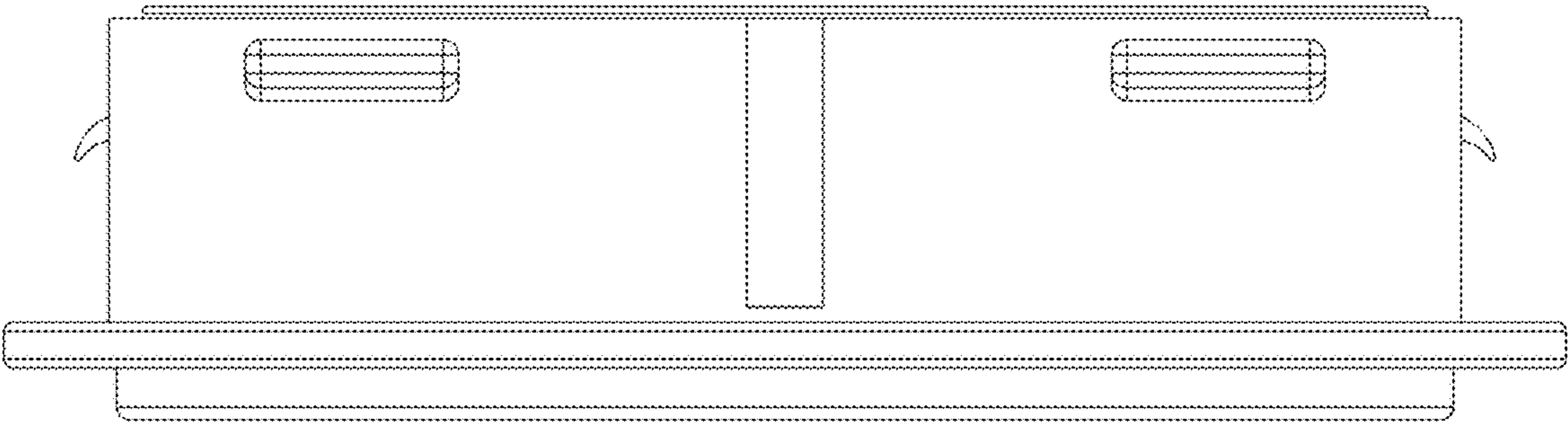
1.8



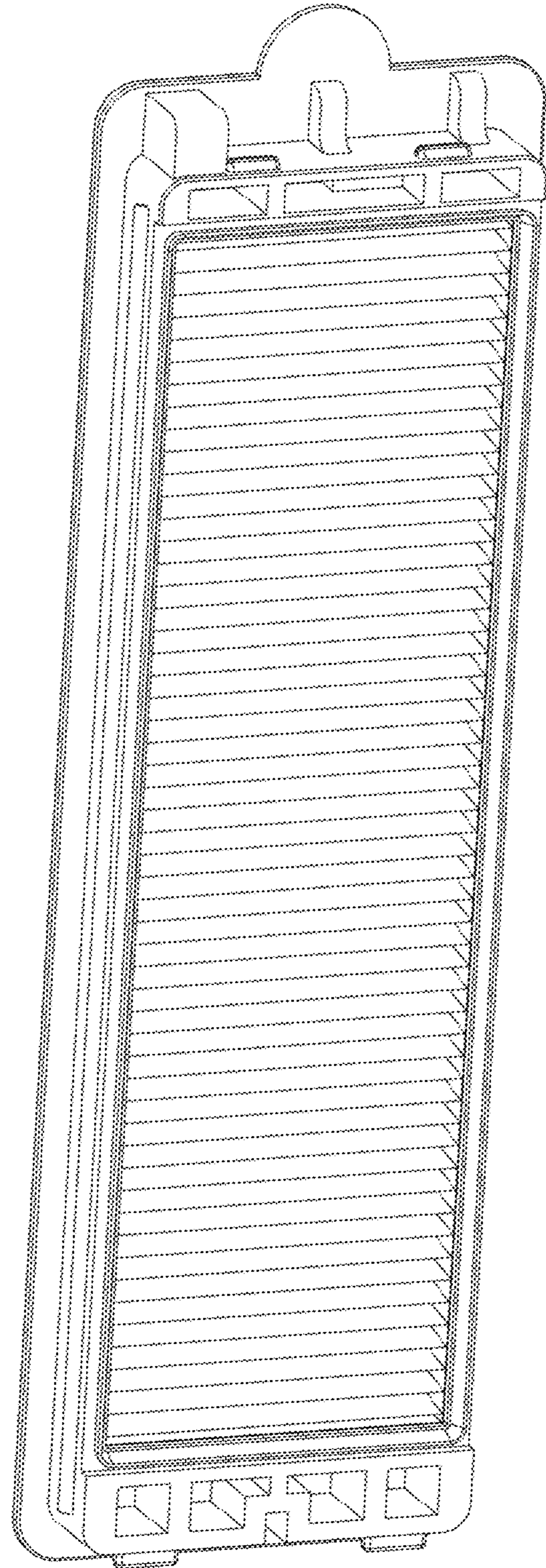
1.9



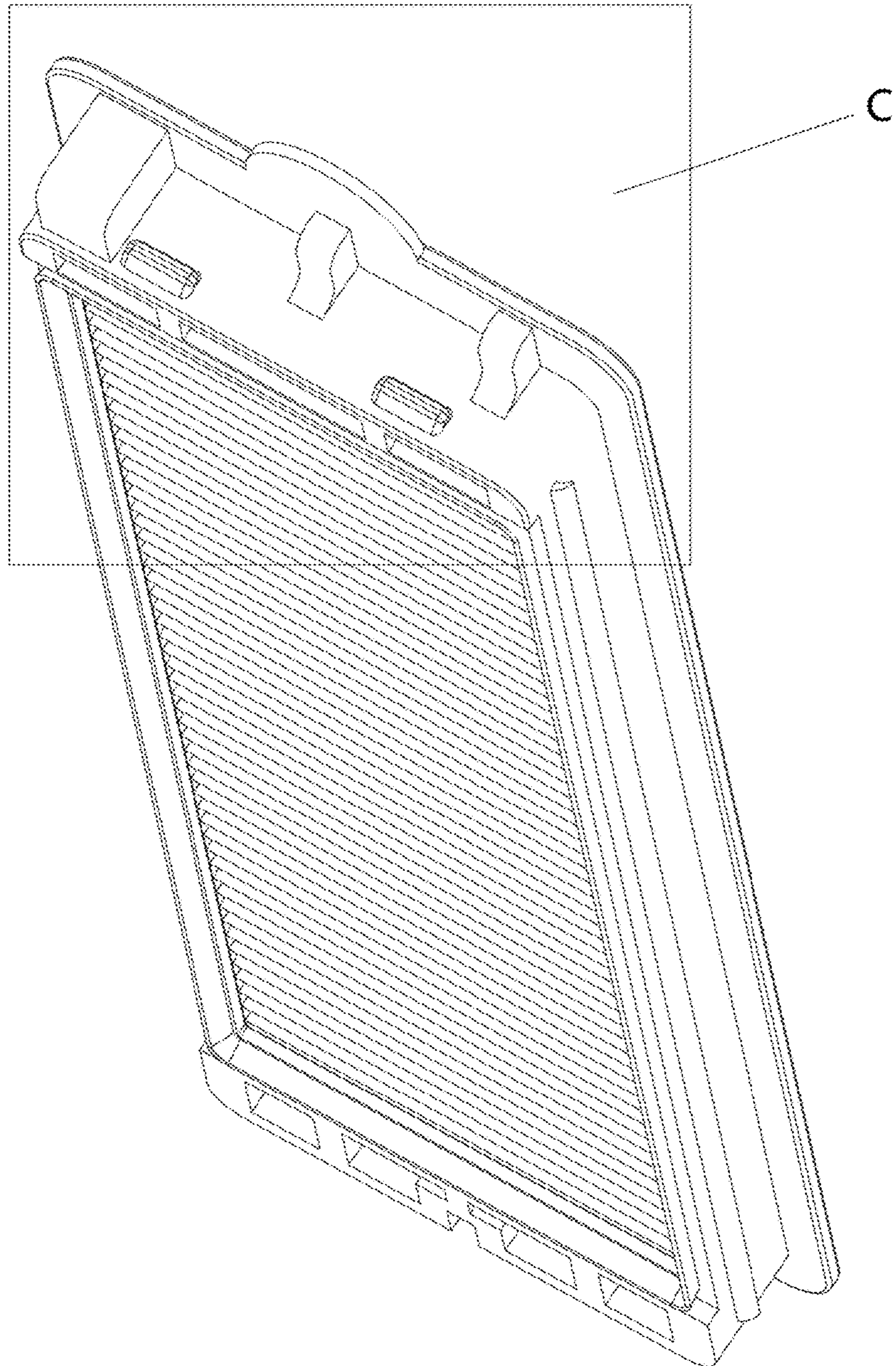
1.10



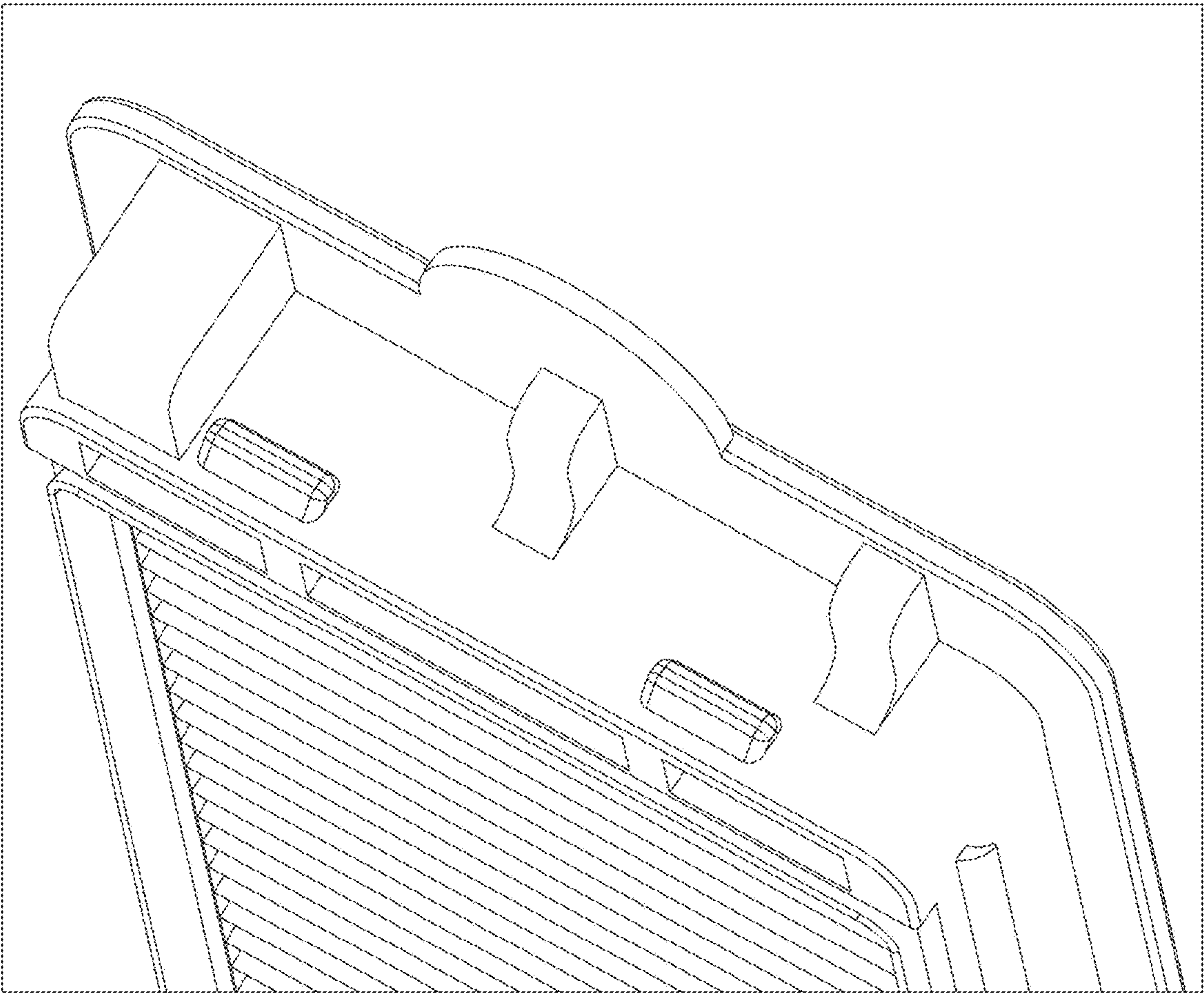
1.11



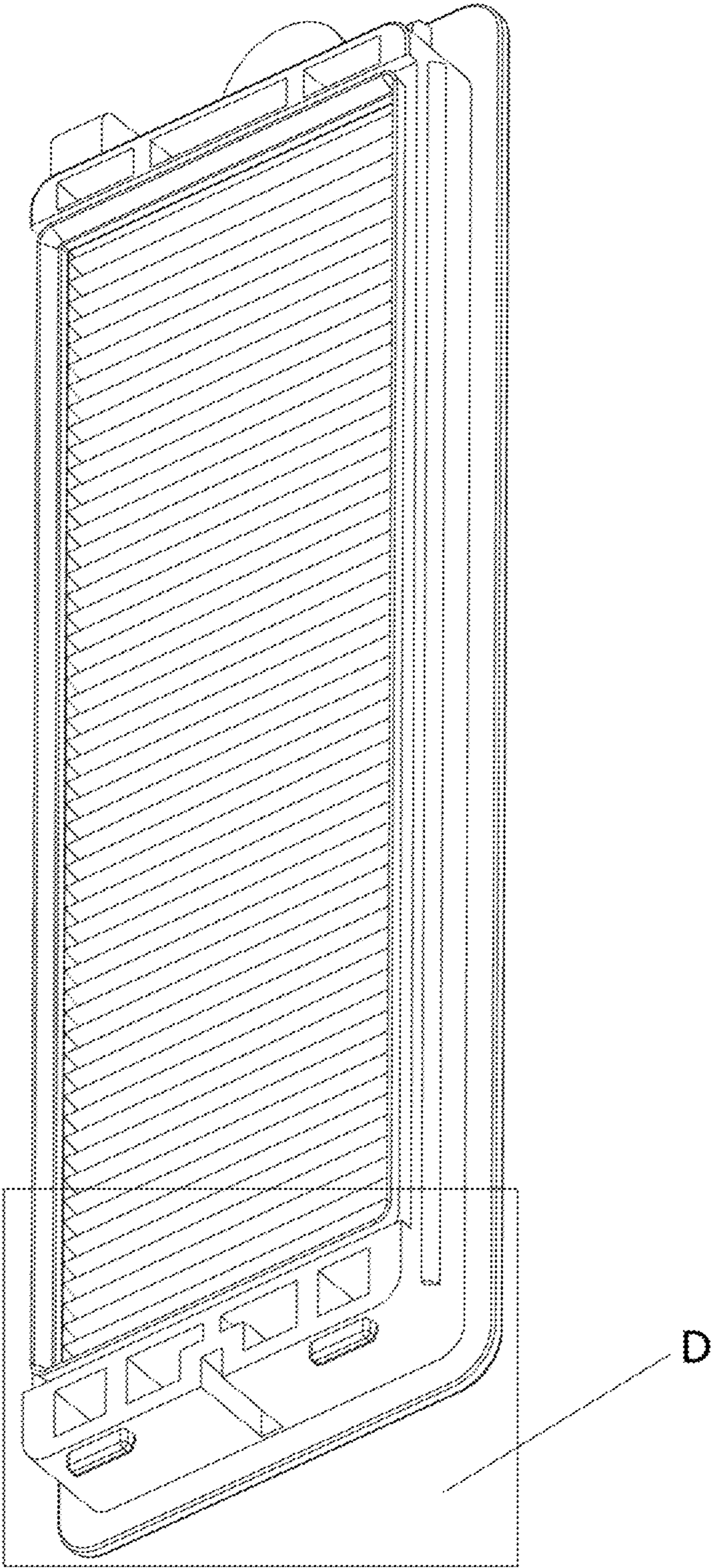
1.12



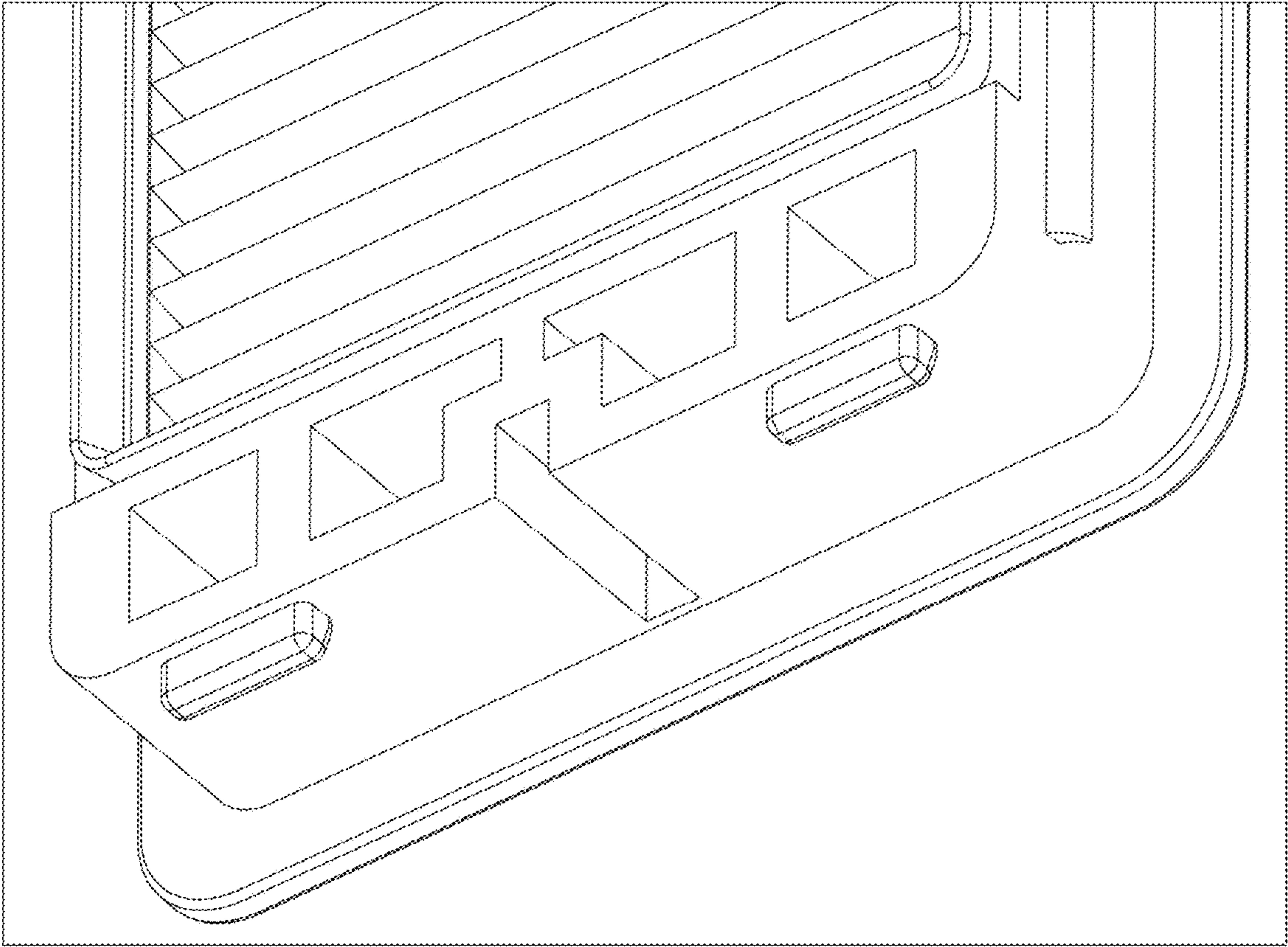
1.13



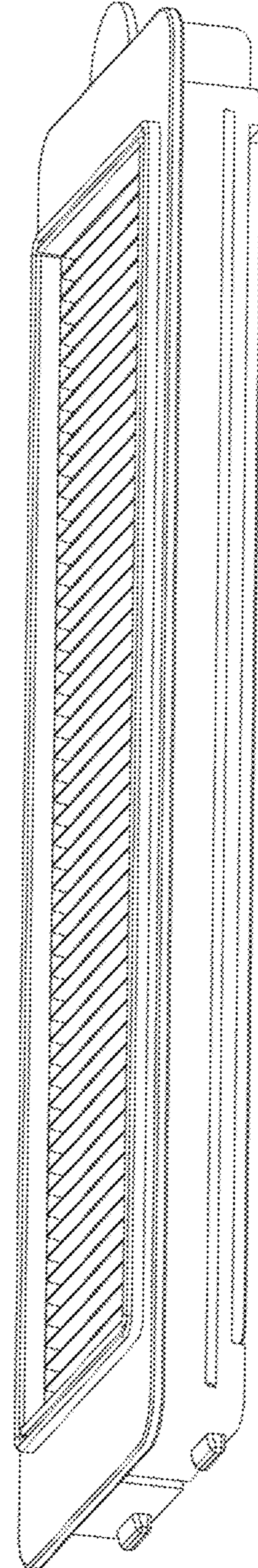
1.14



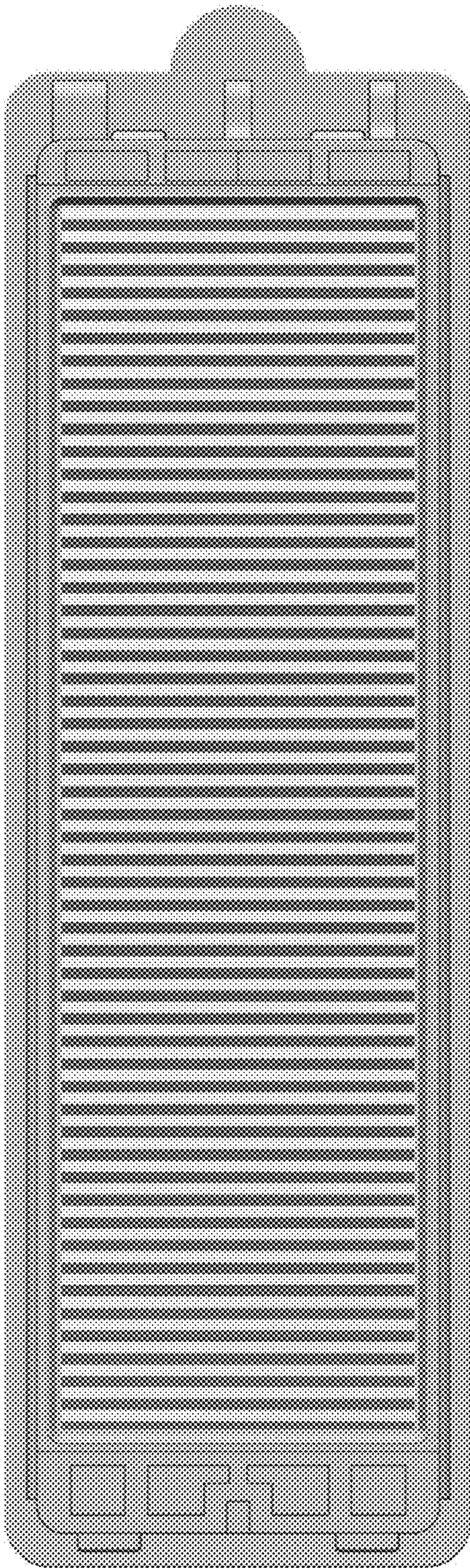
1.15



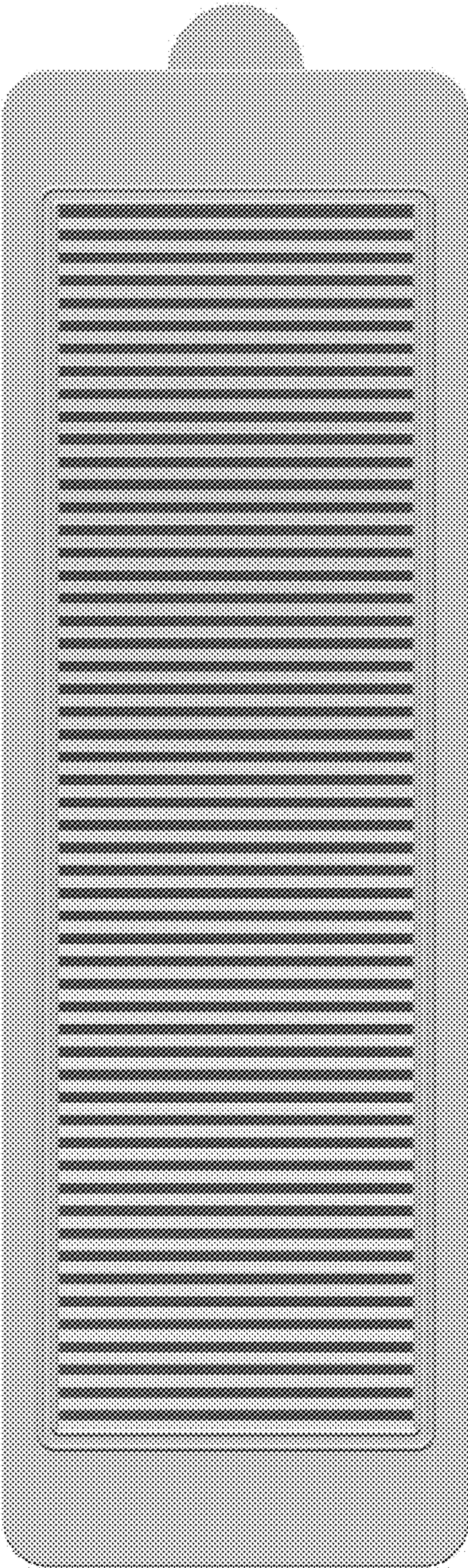
1.16



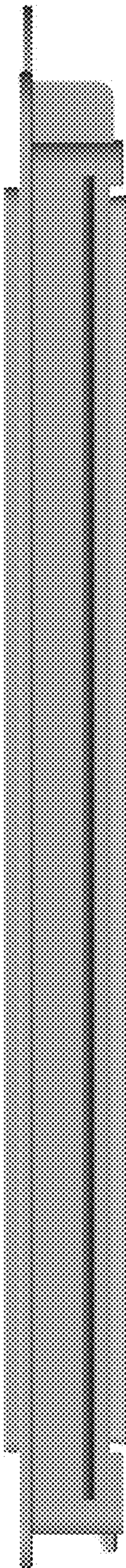
2.1



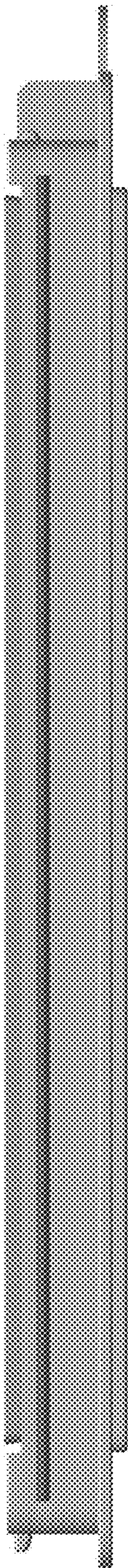
2.2



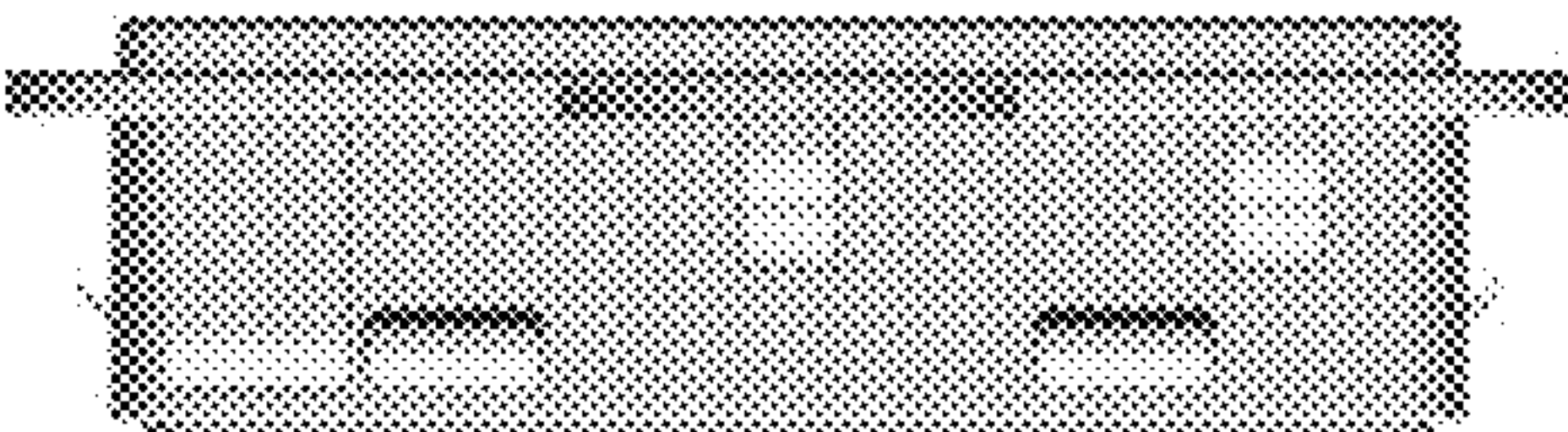
2.3



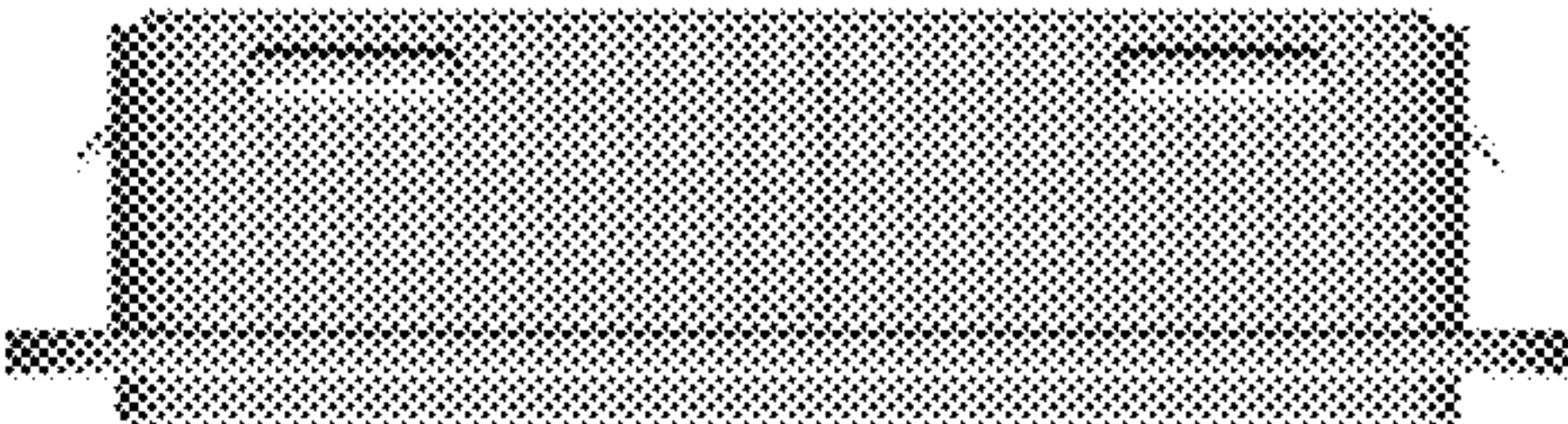
2.4



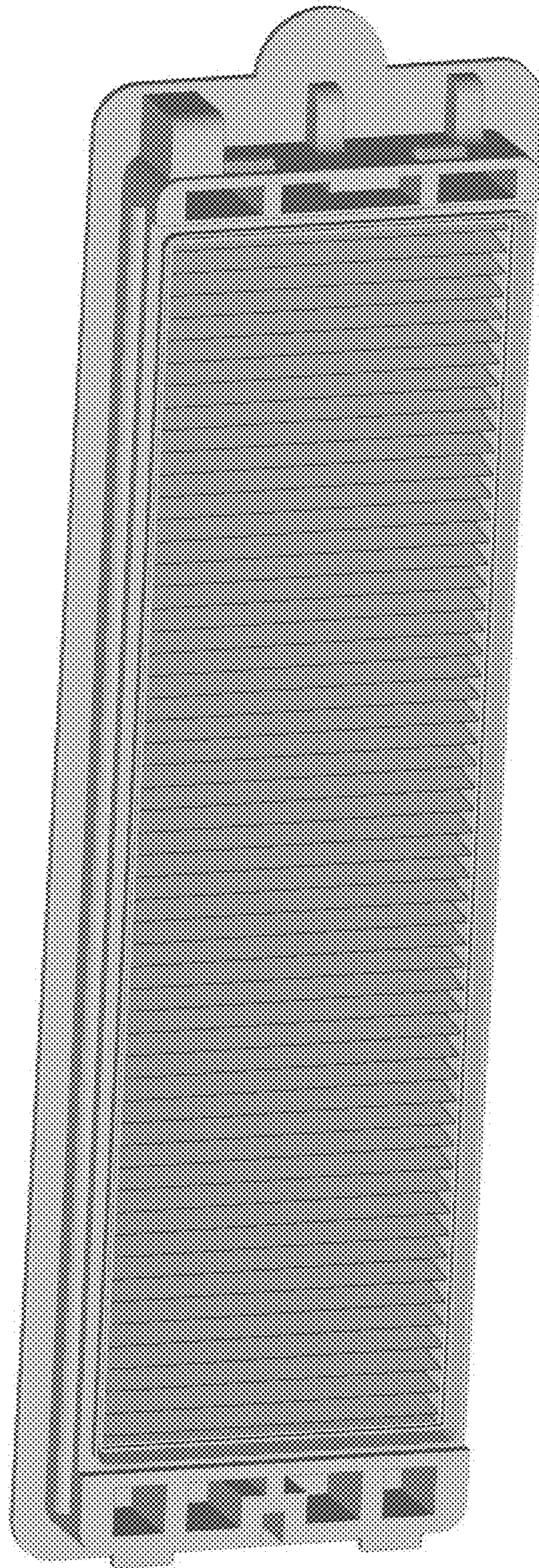
2.5



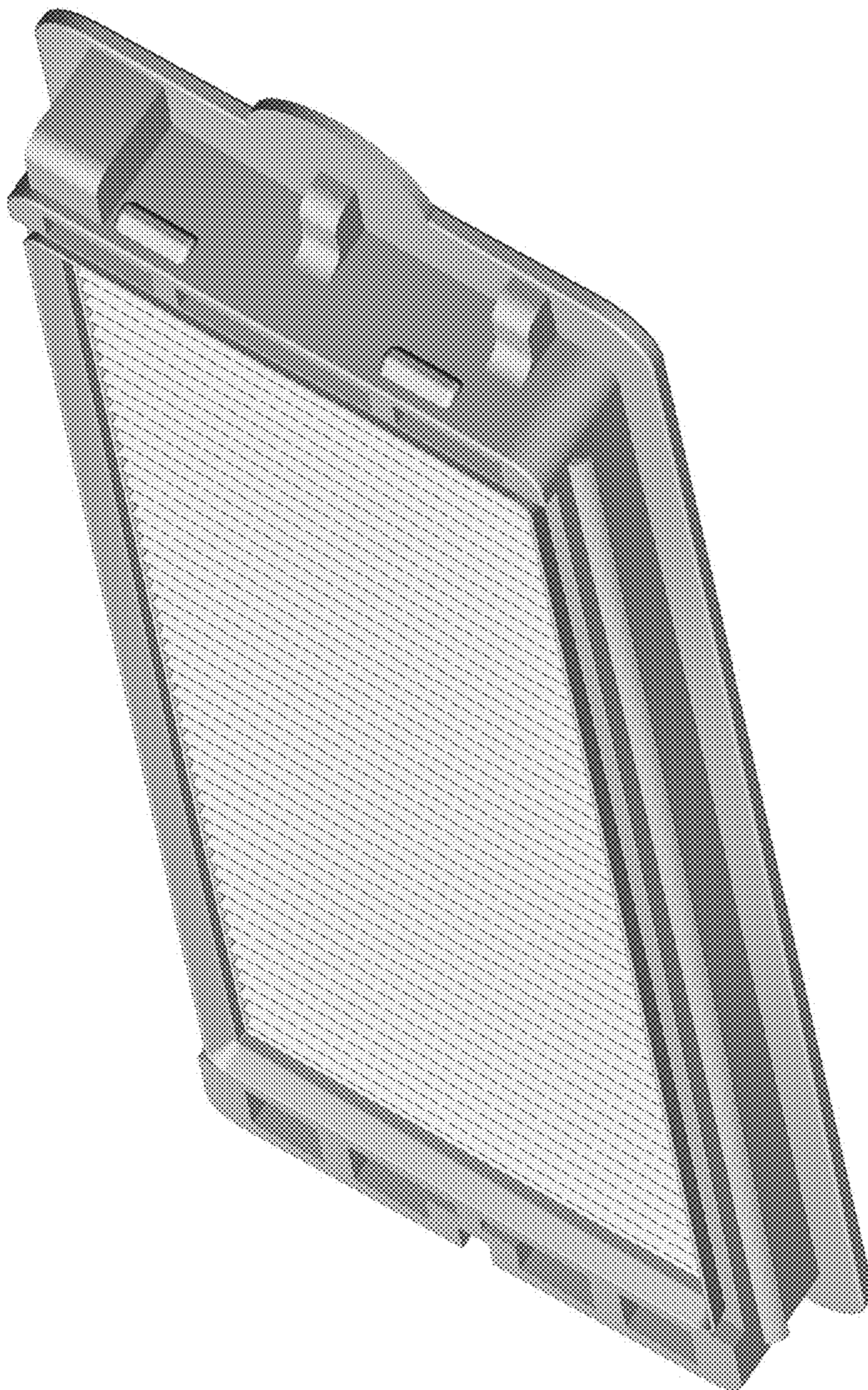
2.6



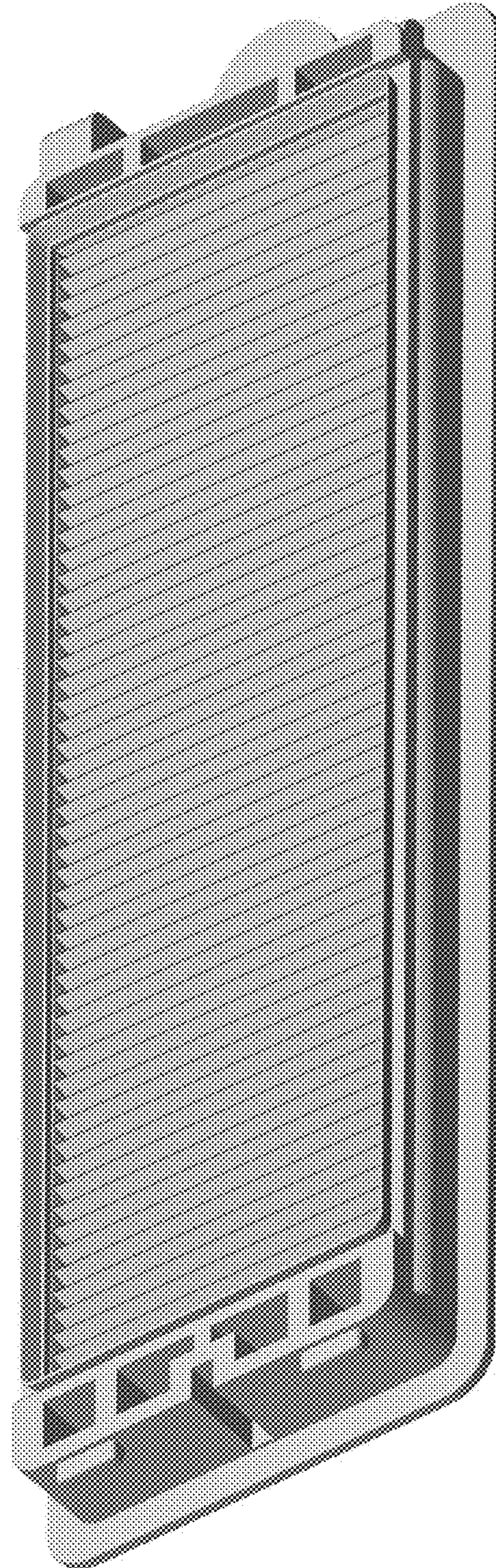
2.7



2.8



2.9



2.10

