



US00D977530S

(12) **United States Design Patent** (10) **Patent No.:** **US D977,530 S**
Adjabeng et al. (45) **Date of Patent:** **** Feb. 7, 2023**

(54) **LARGE SCALE CHILLER** 4,181,577 A 1/1980 Foley
4,369,097 A 1/1983 Nezu et al.
(71) Applicant: **Ecodyst, Inc.**, Apex, NC (US) 5,110,508 A 5/1992 Buettgen et al.
D328,995 S * 9/1992 Verheijen D7/307
(72) Inventors: **George Adjabeng**, Apex, NC (US); 5,164,049 A 11/1992 Clark et al.
Kwabena Williams, Durham, NC (US) 5,176,799 A 1/1993 Roe et al.
D344,527 S * 2/1994 Drago D15/79
(73) Assignee: **Ecodyst, Inc.**, Apex, NC (US) (Continued)

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

(21) Appl. No.: **29/760,232**

(22) Filed: **Nov. 30, 2020**

Related U.S. Application Data

(62) Division of application No. 29/637,487, filed on Feb. 19, 2018, now Pat. No. Des. 903,727.
(51) **LOC (14) Cl.** **15-07**
(52) **U.S. Cl.**
USPC **D15/79**
(58) **Field of Classification Search**
USPC D15/79-91; D7/368, 669, 603, 605, 300
CPC .. F25J 2220/02; F25J 2270/902; F25J 3/0209;
F25J 3/061; F25J 1/0065; F25J 1/0245;
F25J 1/0269; F25J 1/0294; F25J 1/0298;
F25J 2270/912; F25D 17/02; F25D
19/006; F25D 19/00; F25D 2201/12;
F25D 2317/063; F25D 23/028; F25D
23/069; F25D 23/087; F25D 25/02
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D83,687 S * 3/1931 Macready D7/306
2,128,784 A * 8/1938 Tull F25D 17/02
62/376
2,566,865 A * 9/1951 Wingerter F25D 15/00
62/201
3,219,551 A 11/1965 Carel et al.
3,607,662 A 9/1971 Glover

FOREIGN PATENT DOCUMENTS

JP S57-065304 4/1982
JP H08-119608 5/1996
(Continued)

OTHER PUBLICATIONS

Office Action corresponding to European Patent Application No. 18781689.7-1101 dated Mar. 25, 2021.
(Continued)

Primary Examiner — Khawaja Anwar
(74) *Attorney, Agent, or Firm* — Jenkins, Wilson, Taylor & Hunt, P.A.

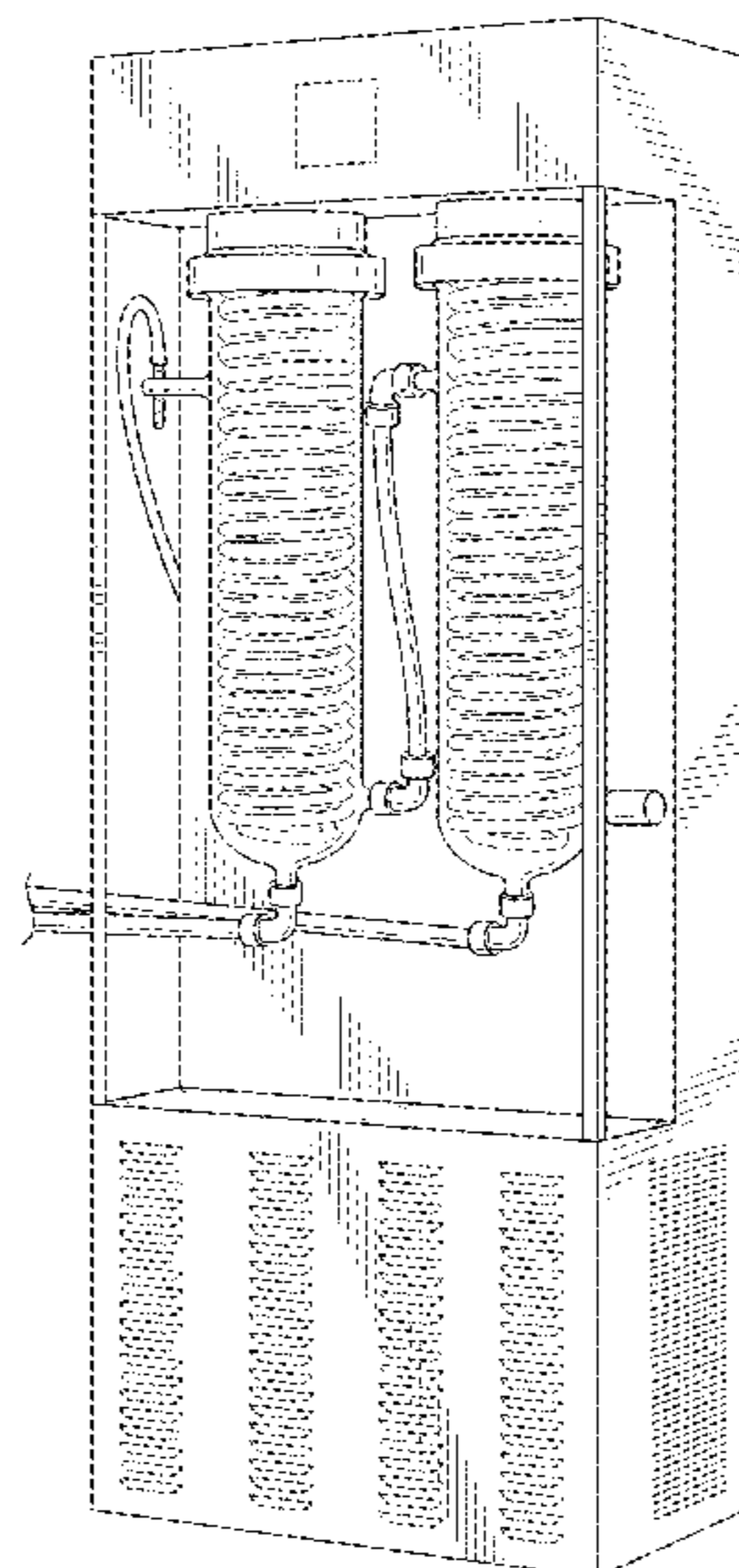
(57) **CLAIM**

The ornamental design for a large scale chiller, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of the large scale chiller showing our design;
FIG. 2 is a front elevation view of the chiller of FIG. 1;
FIG. 3 is a right side view of the chiller of FIG. 1;
FIG. 4 is a left side view of the chiller of FIG. 1;
FIG. 5 is a rear elevation view of the chiller of FIG. 1;
FIG. 6 is a top plan view of the chiller of FIG. 1; and,
FIG. 7 is a bottom plan view of the chiller of FIG. 1.
The broken lines as shown in the drawings represent environment and form no parts of the claimed design.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,340,444 A * 8/1994 van der Heijden B01D 3/10
202/183
5,354,428 A 10/1994 Clark et al.
D358,290 S * 5/1995 Schroeder D7/309
5,916,351 A * 6/1999 Sintchak A47J 31/4403
99/279
6,419,796 B1 7/2002 Kitamura et al.
D600,492 S * 9/2009 Hammad D7/306
D669,154 S * 10/2012 Choi D23/207
8,563,844 B2 10/2013 Gray et al.
8,564,129 B2 10/2013 Therrien et al.
8,893,513 B2 11/2014 June et al.
8,901,612 B2 12/2014 Gray et al.
8,991,194 B2 3/2015 Edwards et al.
9,005,403 B2 4/2015 Adjabeng
D735,527 S * 8/2015 Palermo D7/309
D750,209 S * 2/2016 Satou D23/364
D760,305 S * 6/2016 Salin D15/82
D803,276 S * 11/2017 Adjabeng D15/79
10,221,079 B2 3/2019 Ahmed et al.
10,307,688 B2 * 6/2019 Adjabeng B01D 3/085
D860,268 S * 9/2019 Jakobsen D15/81
D903,727 S * 12/2020 Adjabeng D15/79
11,400,388 B2 * 8/2022 Adjabeng B01D 5/0006
2006/0231378 A1 10/2006 Wolfgang et al.
2011/0073459 A1 3/2011 Adjabeng
2012/0085635 A1 4/2012 Haynes
2014/0144767 A1 5/2014 Jost et al.
2016/0146519 A1 * 5/2016 Ito F28D 1/05383
62/498
2020/0016506 A1 1/2020 Adjabeng

FOREIGN PATENT DOCUMENTS

JP 2009-172468 8/2009
JP 2009-540095 11/2009
WO WO 2007/144615 A1 12/2007
WO WO 2011/151484 A1 12/2011
WO WO 2016/086101 6/2016
WO WO 2016/201223 A1 12/2016
WO WO 2018/187276 A1 10/2018

OTHER PUBLICATIONS

Office Action corresponding to Chinese Patent Application No. 201880036457.4 dated Apr. 14, 2021.

Office Action corresponding to U.S. Appl. No. 16/489,603 dated Jan. 28, 2021.
Communication Pursuant to Article 94(3) EPC corresponding to European Patent Application No. 18781689.7 dated May 18, 2022.
Decision of Refusal corresponding to Japanese Patent Application No. 2020-502543 dated May 31, 2022.
Supplemental Notice of Allowability corresponding to U.S. Appl. No. 16/489,603 dated Jul. 8, 2022.
Hearing Notice corresponding to Indian Patent Application No. 201947044500 dated Jul. 1, 2021.
International Search Report and Written Opinion for Application No. PCT/US2018/025812 dated Jun. 11, 2018.
Notice of Publication corresponding to European Patent Application No. 18781689.7 dated Jan. 15, 2020.
Notice of Publication corresponding to U.S. Appl. No. 16/489,603 dated Jan. 16, 2020.
Notice of Allowance corresponding to U.S. Appl. No. 29/637,487 dated Jul. 31, 2020.
Office Action corresponding to U.S. Appl. No. 29/637,487 dated Mar. 12, 2020.
Office Action (Restriction Requirement) corresponding to U.S. Appl. No. 16/489,603 dated May 13, 2020.
Office Action corresponding to U.S. Appl. No. 16/489,603 dated Jul. 7, 2020.
European Search Report corresponding to European Patent Application No. 18781689.7 dated Jul. 15, 2020.
Notice of Allowance corresponding to U.S. Appl. No. 16/489,603 dated Mar. 29, 2022.
Office Action corresponding to European Patent Application No. 18781689.7-1101 dated Nov. 23, 2021.
Office Action corresponding to Japanese Patent Application No. JP 2020-502543 dated Aug. 3, 2021.
Office Action corresponding to U.S. Appl. No. 16/489,603 dated Aug. 23, 2021.
Patent Certificate Corresponding to Indian Patent Application No. 201947044500 dated Oct. 20, 2021.
Office Action corresponding to Chinese Patent Application No. 201880036457.4 dated Oct. 19, 2021.
Rejection Decision corresponding to Chinese Patent Application No. 201880036457.4 dated Mar. 23, 2022.
Office Action corresponding to Indian Patent Application No. 201947044500 dated Dec. 21, 2020.
Office Action corresponding to Canadian Patent Application No. 3,053,136 dated Oct. 28, 2022.
Office Action corresponding to European Patent Application No. 18781689.7-1101 dated Nov. 29, 2022.

* cited by examiner

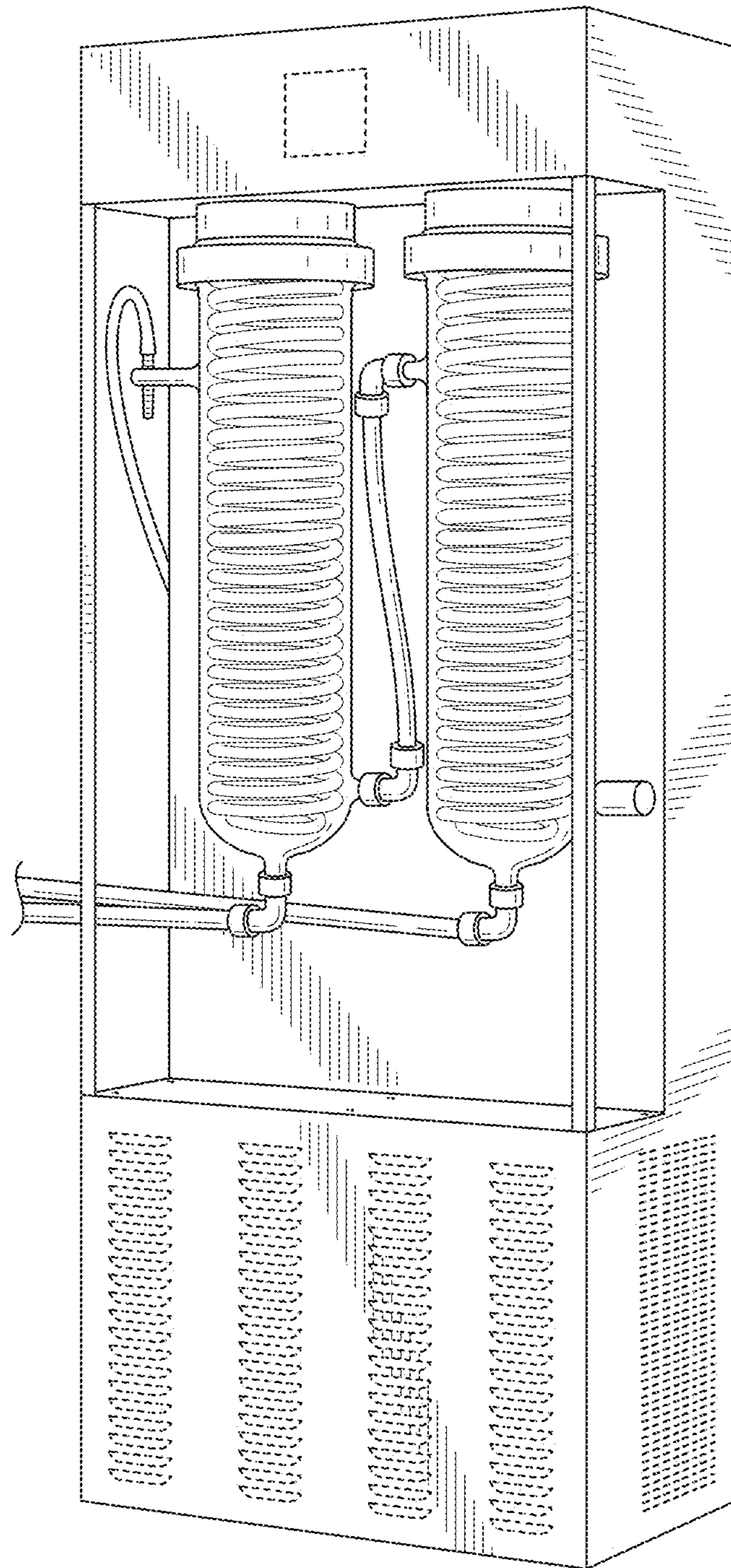


FIG. 1

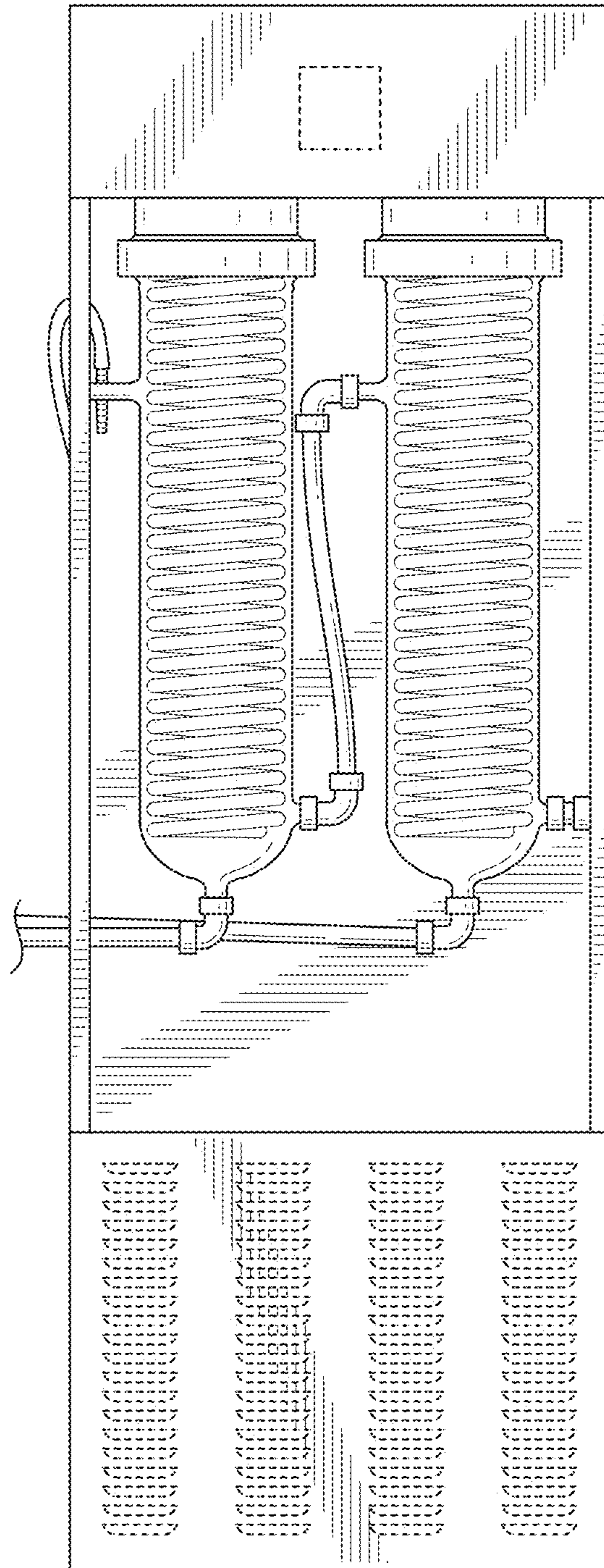


FIG. 2

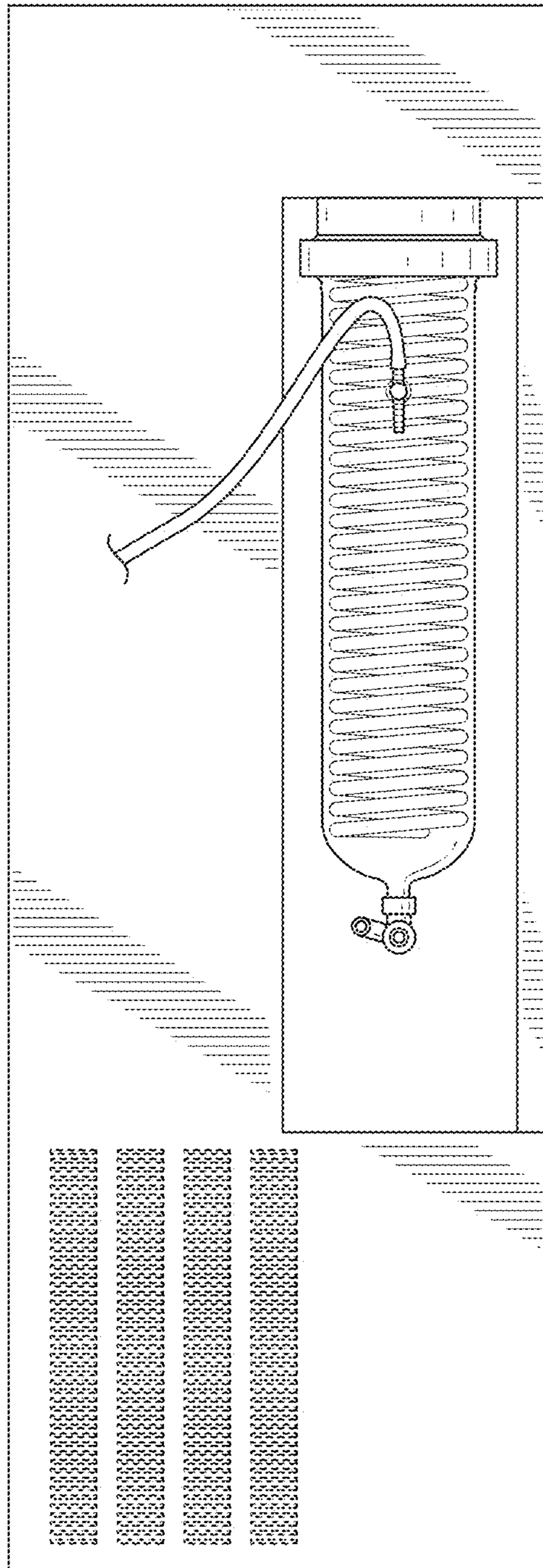


FIG. 3

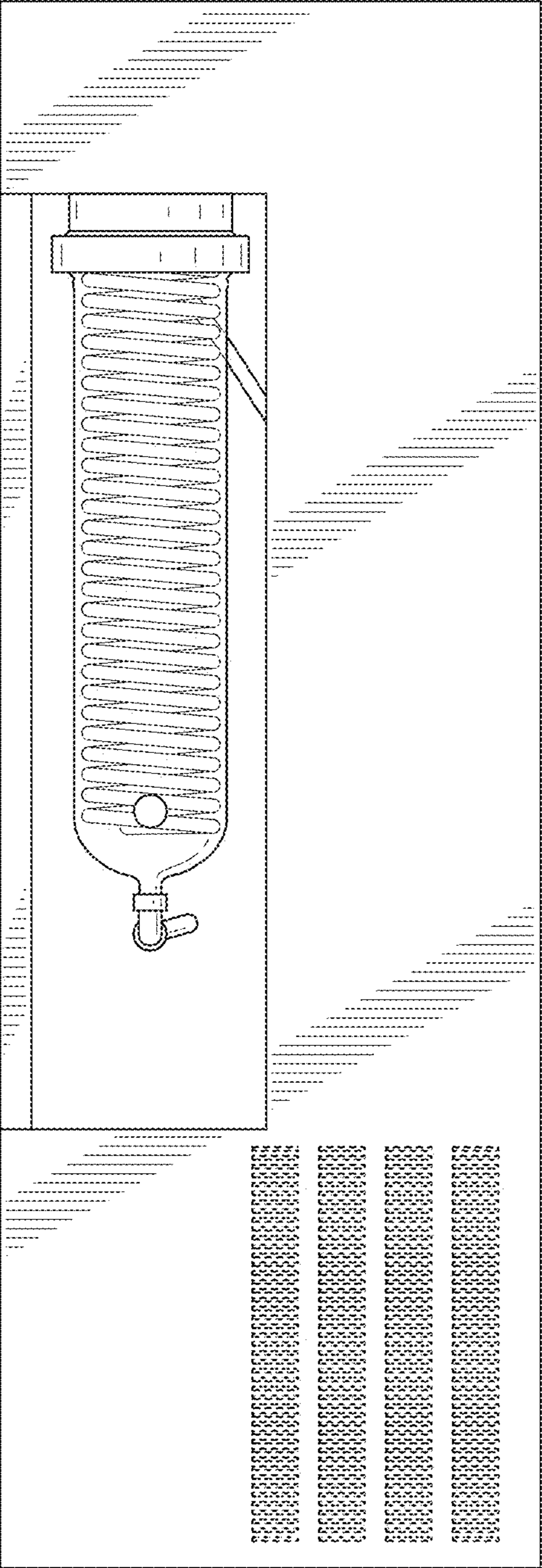


FIG. 4

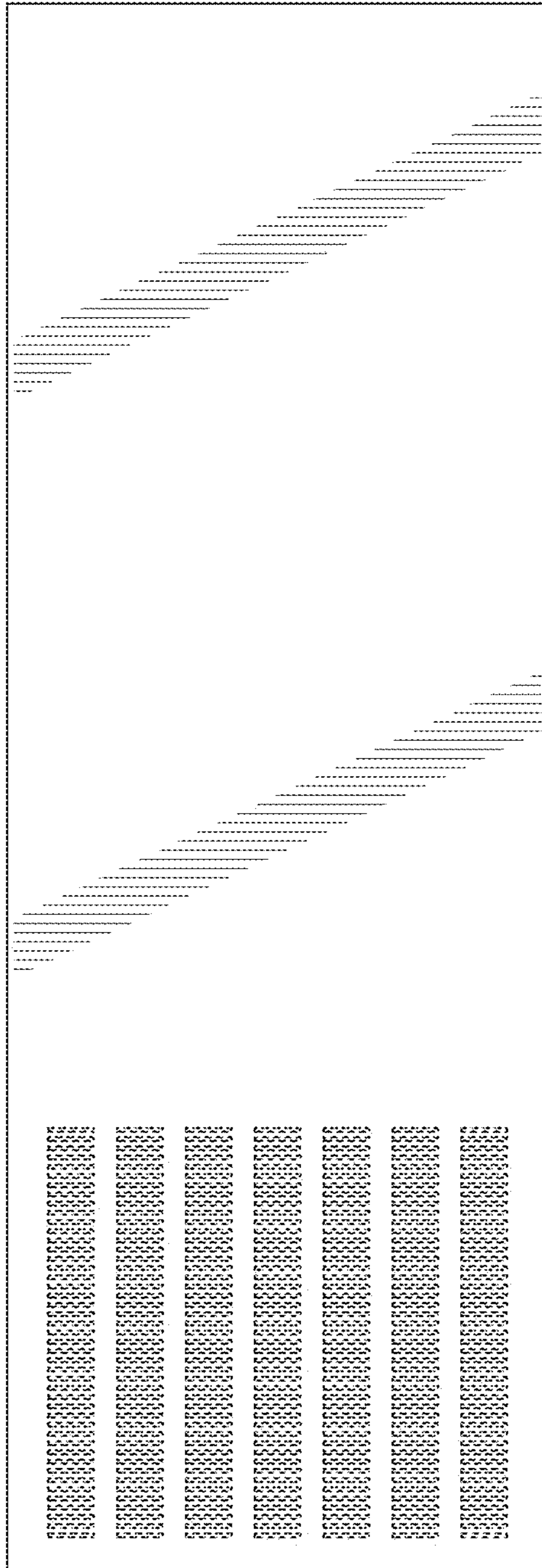


FIG. 5

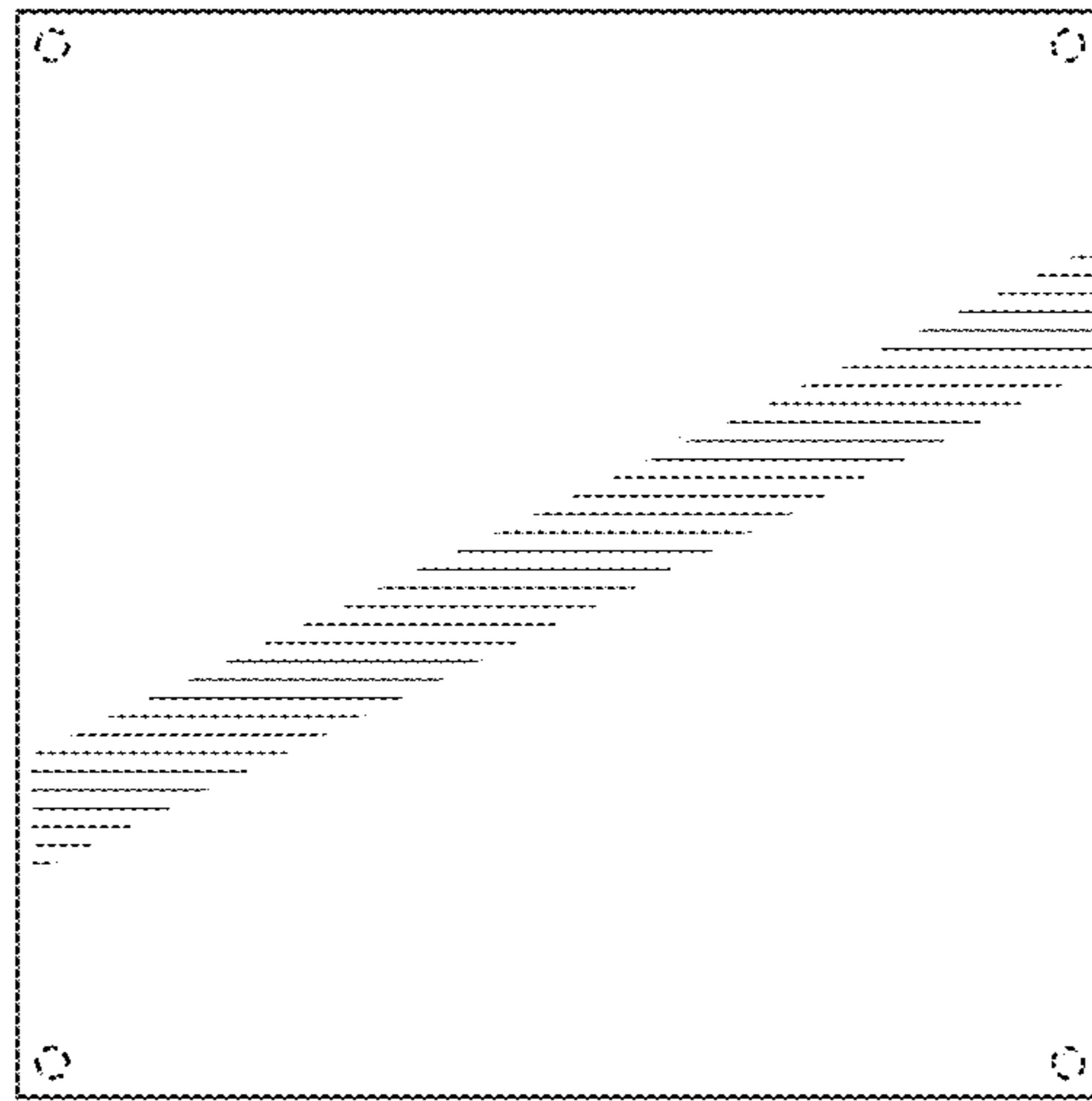


FIG. 6

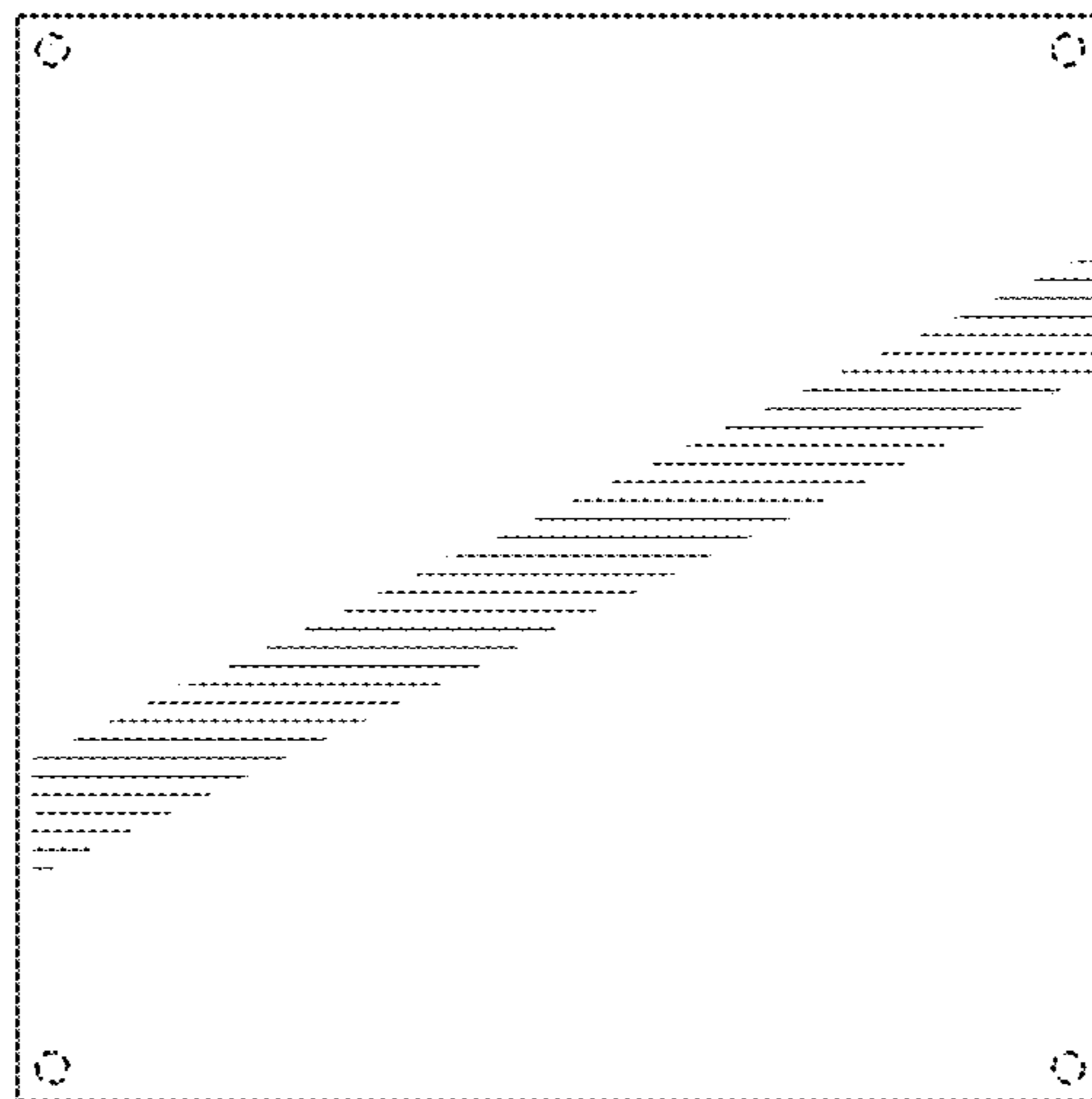


FIG. 7