



US00D757662S

(12) **United States Design Patent**
Fujii et al.

(10) **Patent No.:** **US D757,662 S**
(45) **Date of Patent:** **** May 31, 2016**

- (54) **PLATE FOR HEAT EXCHANGER**
- (71) Applicant: **Kobe Steel, Ltd.**, Kobe-shi (JP)
- (72) Inventors: **Yasuyuki Fujii**, Kobe (JP); **Akio Okamoto**, Shinagawa-ku (JP); **Yoshio Itsumi**, Takasago (JP); **Hideto Oyama**, Takasago (JP); **Keitaro Tamura**, Takasago (JP); **Kazuki Sakamoto**, Kobe (JP)
- (73) Assignee: **Kobe Steel, Ltd.**, Kobe-shi (JP)
- (**) Term: **14 Years**
- (21) Appl. No.: **29/498,571**
- (22) Filed: **Aug. 5, 2014**
- (30) **Foreign Application Priority Data**

Feb. 6, 2014 (JP) D2014-002444

- (51) **LOC (10) Cl.** **13-09**
- (52) **U.S. Cl.**
USPC **D13/179**
- (58) **Field of Classification Search**
USPC D13/179; D23/323, 330, 386;
165/104.11, 104.26, 133, 166
CPC F28F 3/00; F28F 3/02; F28F 3/025;
F28F 3/08; F28F 13/00; F28F 13/06; F28F
13/18; F28F 13/185; F28D 9/005; F28D
9/0031; F28D 15/00; F28D 15/0233
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- D316,705 S * 5/1991 Dickey D13/179
- 5,069,276 A * 12/1991 Seidel F28D 9/0037
165/166
- D384,040 S * 9/1997 Frerichs D13/179
- 5,875,838 A * 3/1999 Haselden F28D 9/0043
165/146
- 7,069,982 B2 * 7/2006 Matsuzaki B21D 53/04
165/165
- D586,763 S * 2/2009 Hua D13/179
- D657,856 S * 4/2012 Hwang D23/330

- 8,276,393 B2 * 10/2012 Critoph F25B 35/04
62/101
- 8,341,968 B2 * 1/2013 Landers F25D 3/06
62/389
- 8,353,331 B2 * 1/2013 Chang F28F 3/02
165/109.1
- D676,118 S * 2/2013 Hansen D23/330
- D679,788 S * 4/2013 Hoberg D23/323
- 8,490,683 B2 * 7/2013 Moon F28D 15/0233
165/104.26
- 8,550,153 B2 * 10/2013 Yin F22B 27/00
165/146
- 8,875,780 B2 * 11/2014 Smith F28F 1/325
165/133
- 9,007,771 B2 * 4/2015 Agostini F28D 1/0435
361/689
- 9,091,494 B2 * 7/2015 Dahlberg F28D 9/005
- D735,842 S * 8/2015 Cole D23/323
- 9,163,882 B2 * 10/2015 Crawford F28D 9/005

(Continued)

FOREIGN PATENT DOCUMENTS

JP D1465216 3/2013

Primary Examiner — Selina Sikder

(74) *Attorney, Agent, or Firm* — Oblon, McClelland, Maier & Neustadt, L.L.P.

(57) **CLAIM**

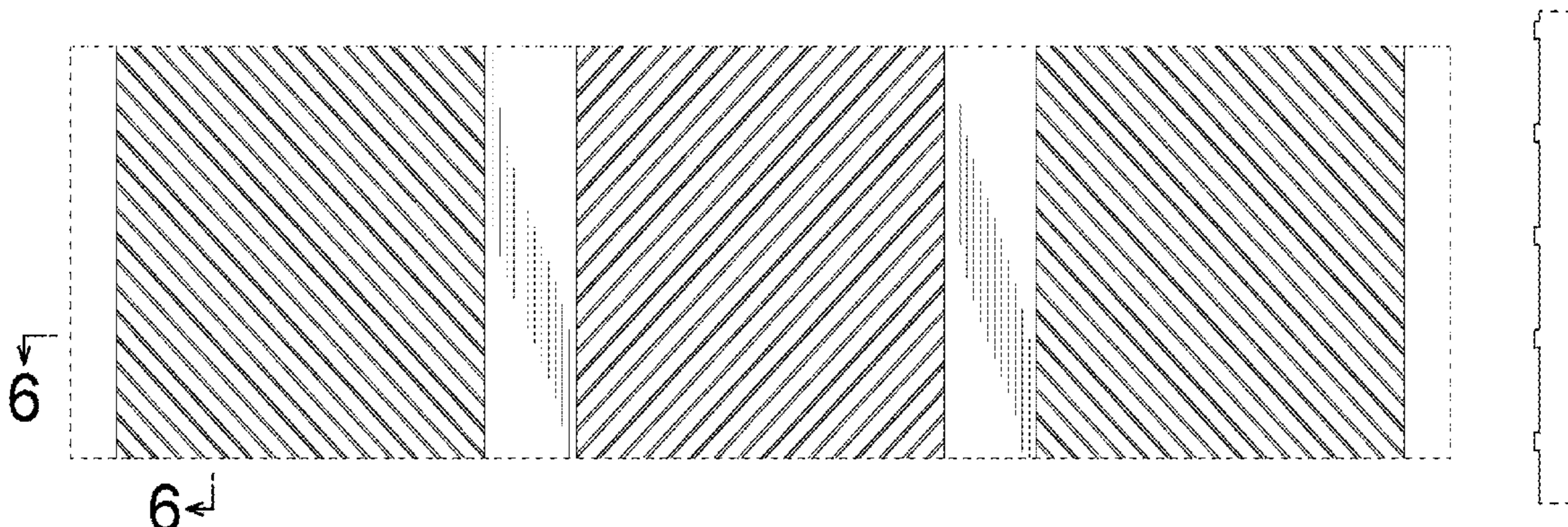
The ornamental design for a plate for heat exchanger, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a plate for heat exchanger; FIG. 2 is a left side view thereof; FIG. 3 is a right side view thereof; FIG. 4 is a top view thereof; FIG. 5 is a bottom view thereof; FIG. 6 is an enlarged view of part 6-6 in FIG. 1 thereof; and, FIG. 7 is an elevational view taken along line 7-7 end in FIG. 6 thereof.

The portion shown by broken lines is for illustrative purposes only and forms no part of the claimed design.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2004/0226704	A1*	11/2004	Sella	F28D 9/005 165/167	2011/0112348	A1*	5/2011	Tonkovich	B01F 5/0475 585/435
2006/0090887	A1*	5/2006	Kato	F28D 9/005 165/166	2014/0026577	A1*	1/2014	Reinke	F01N 3/0205 60/670
2010/0051248	A1*	3/2010	Inatomi	F28F 3/04 165/166	2014/0352934	A1*	12/2014	Barone	B23P 15/26 165/166
2010/0315781	A1*	12/2010	Agostini	F28D 15/0233 361/700	2015/0184946	A1*	7/2015	Barwig	F02B 29/045 123/542
					2015/0219410	A1*	8/2015	Lin	F28F 13/18 165/133

* cited by examiner

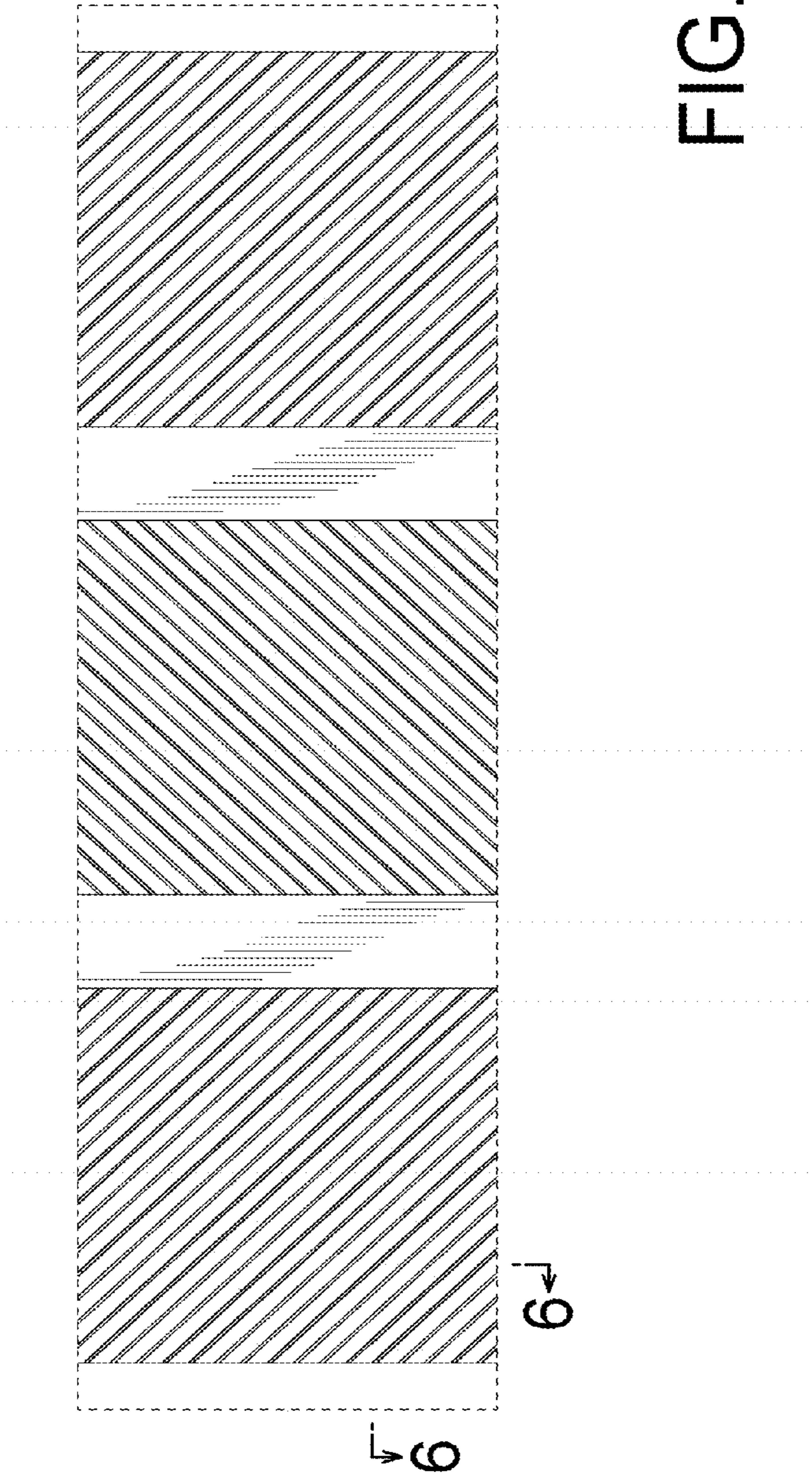


FIG. 1

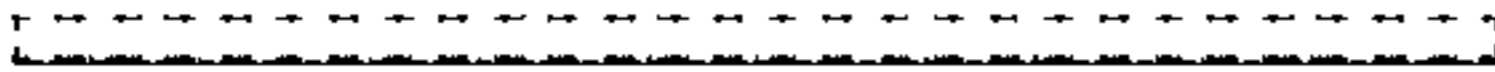


FIG.2

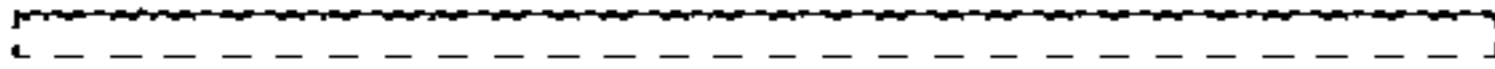


FIG.3



FIG.4



FIG.5

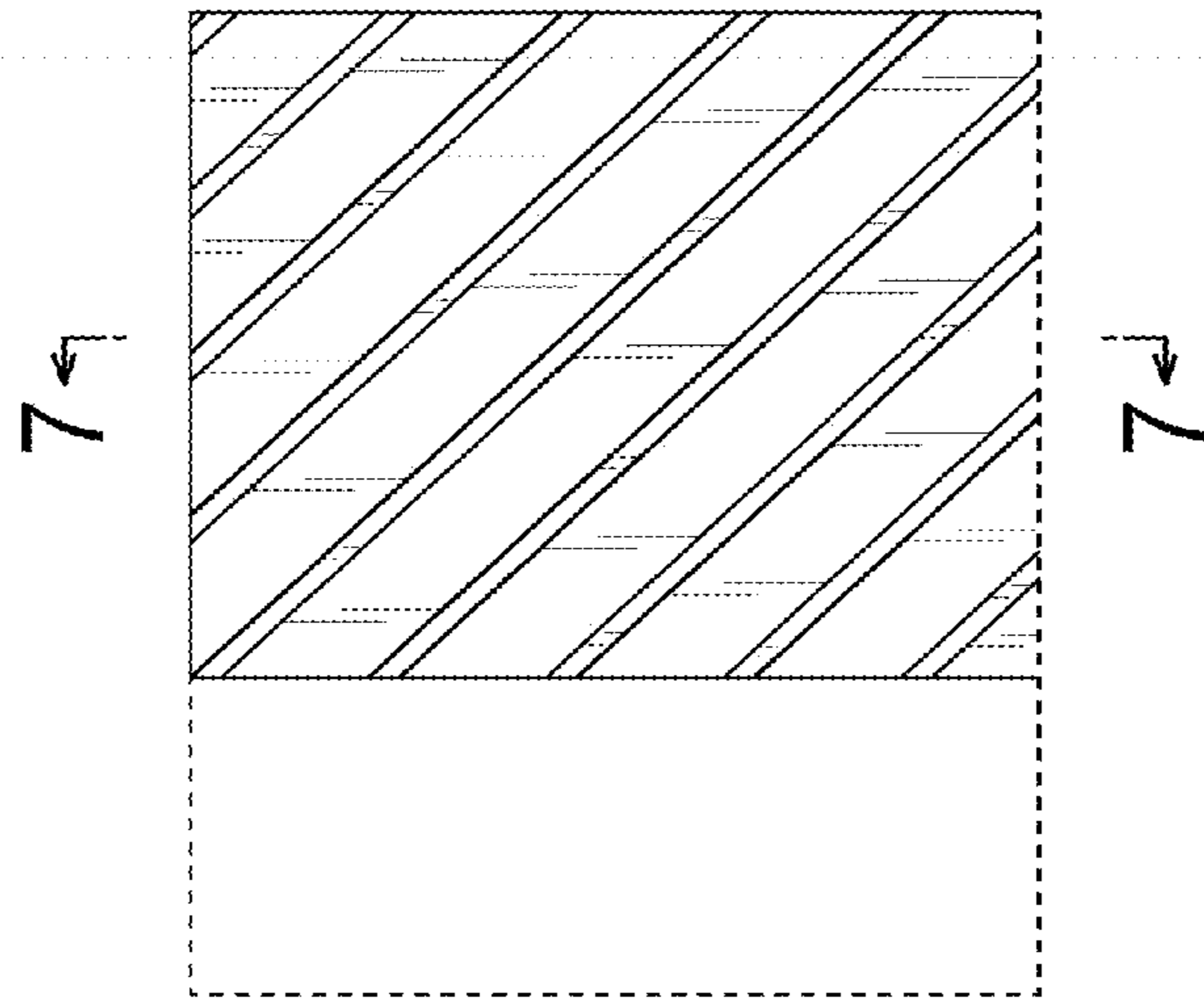


FIG. 6



FIG. 7