



US00D847746S

(12) **United States Design Patent** (10) **Patent No.:** **US D847,746 S**  
**Miller et al.** (45) **Date of Patent:** **\*\* May 7, 2019**

(54) **BATTERY SEPARATOR**  
(71) Applicant: **Daramic, LLC**, Charlotte, NC (US)  
(72) Inventors: **Eric H. Miller**, Philpot, KY (US); **M. Neal Golovin**, Owensboro, KY (US); **Ahila Krishnamoorthy**, Karnataka (IN); **James P. Perry**, Utica, KY (US); **J. Kevin Whear**, Utica, KY (US)  
(73) Assignee: **Daramic, LLC**, Charlotte, NC (US)  
(\*\*) Term: **15 Years**  
(21) Appl. No.: **29/580,376**  
(22) Filed: **Oct. 7, 2016**  
(51) **LOC (11) Cl.** ..... **13-02**  
(52) **U.S. Cl.**  
USPC ..... **D13/119**  
(58) **Field of Classification Search**  
USPC ..... D13/103, 104, 110, 107, 119, 120, 156;  
429/175, 151  
CPC ..... H01R 13/641; H01M 2/1027; H01M  
2/1022; H01M 2/1072; H01M 2/105;  
H01M 2/1077  
See application file for complete search history.

5,949,637 A \* 9/1999 Iwaida ..... H01G 9/155  
361/502  
D456,533 S \* 4/2002 Moller, Jr. .... D25/163  
D462,938 S \* 9/2002 Revak ..... D13/119  
D609,884 S \* 2/2010 Cho ..... D2/891  
D615,927 S \* 5/2010 Kuriki ..... D13/133  
8,530,081 B2 \* 9/2013 Hayashida ..... H01M 4/0404  
429/122  
D696,029 S \* 12/2013 Seyler ..... D5/1  
D725,916 S \* 4/2015 Haverfield ..... D5/60  
D732,826 S \* 6/2015 Greene ..... D3/304  
D758,728 S \* 6/2016 Young ..... D3/269  
D763,192 S \* 8/2016 Tyler ..... D13/119  
9,796,337 B2 \* 10/2017 Helmuth ..... B60R 3/02  
9,812,693 B2 \* 11/2017 DeKeuster ..... H01M 2/305  
2006/0110662 A1 \* 5/2006 Konishiike ..... H01M 4/134  
429/233  
2006/0216594 A1 \* 9/2006 You ..... H01M 2/021  
429/180  
2011/0052105 A1 \* 3/2011 Wilcoxon ..... B65D 33/28  
383/75

(Continued)

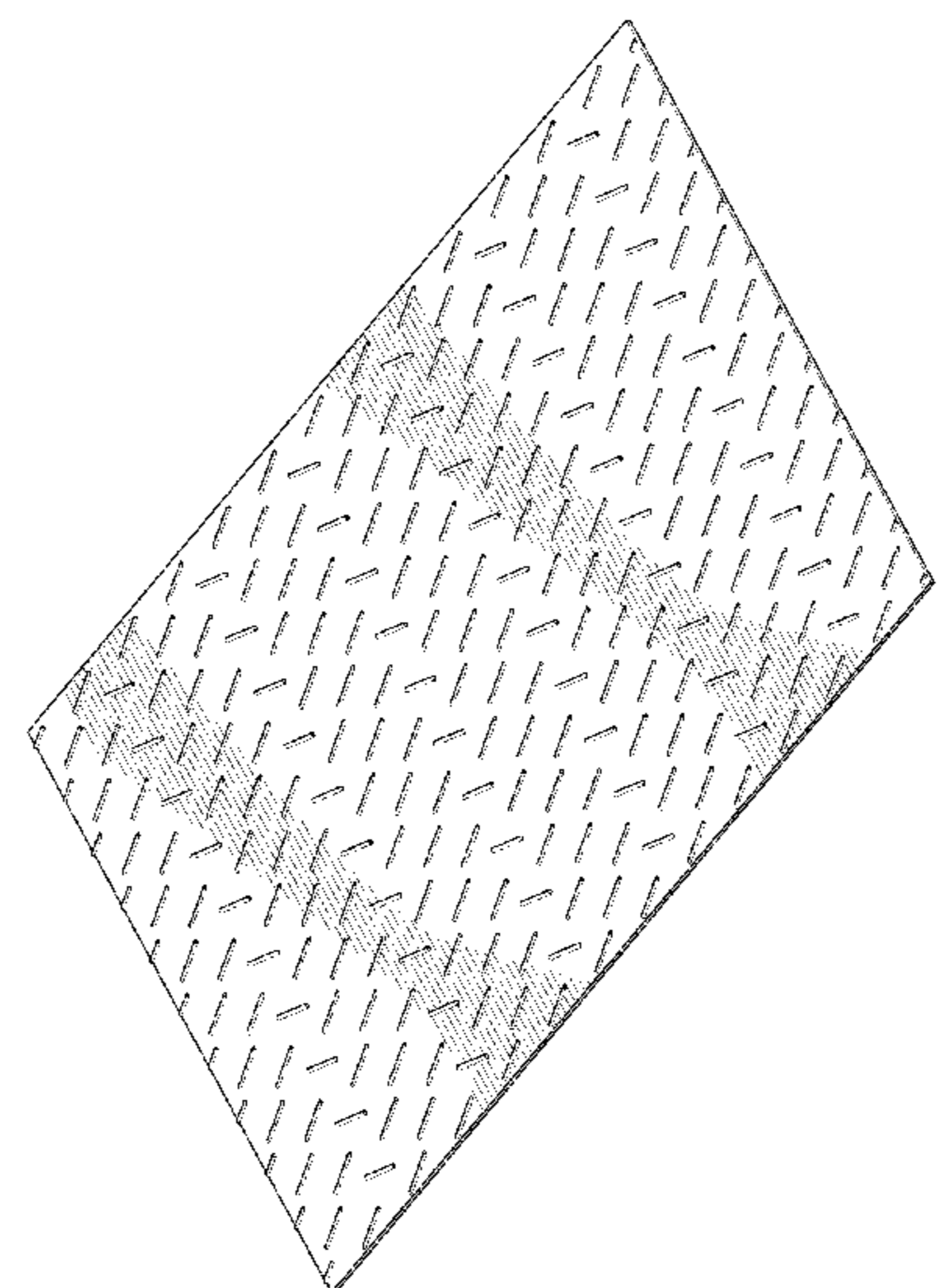
*Primary Examiner* — Derrick E Holland  
*Assistant Examiner* — Jennifer O King  
(74) *Attorney, Agent, or Firm* — Hammer & Associates, P.C.

(57) **CLAIM**  
The ornamental design for a battery separator, as shown and described.

(56) **References Cited**  
U.S. PATENT DOCUMENTS  
D10,962 S \* 12/1878 Webb ..... D5/47  
3,375,136 A \* 3/1968 Biggar ..... H01M 2/021  
205/160  
4,142,334 A \* 3/1979 Kirsch ..... A47L 13/16  
451/539  
4,237,558 A \* 12/1980 Mackenroth, III .... A42B 3/285  
2/181  
D311,898 S \* 11/1990 Luzader ..... D13/119  
5,716,735 A \* 2/1998 Muffoletto ..... H01M 2/266  
29/623.4

**DESCRIPTION**  
FIG. 1 is a perspective view of a battery separator showing our new design;  
FIG. 2 is a front view of the design shown in FIG. 1;  
FIG. 3 is a rear view of the design shown in FIG. 1;  
FIG. 4 is a top view of the design shown in FIG. 1;  
FIG. 5 is a bottom view of the design shown in FIG. 1;  
FIG. 6 is a left side view of the design shown in FIG. 1; and,  
FIG. 7 is a right side view of the design shown in FIG. 1.

**1 Claim, 5 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

2012/0025420 A1\* 2/2012 Utashiro ..... B29C 43/021  
264/293  
2015/0228935 A1\* 8/2015 Seong ..... H01M 2/0404  
429/178  
2017/0279089 A1\* 9/2017 Nishino ..... H01M 2/08

\* cited by examiner

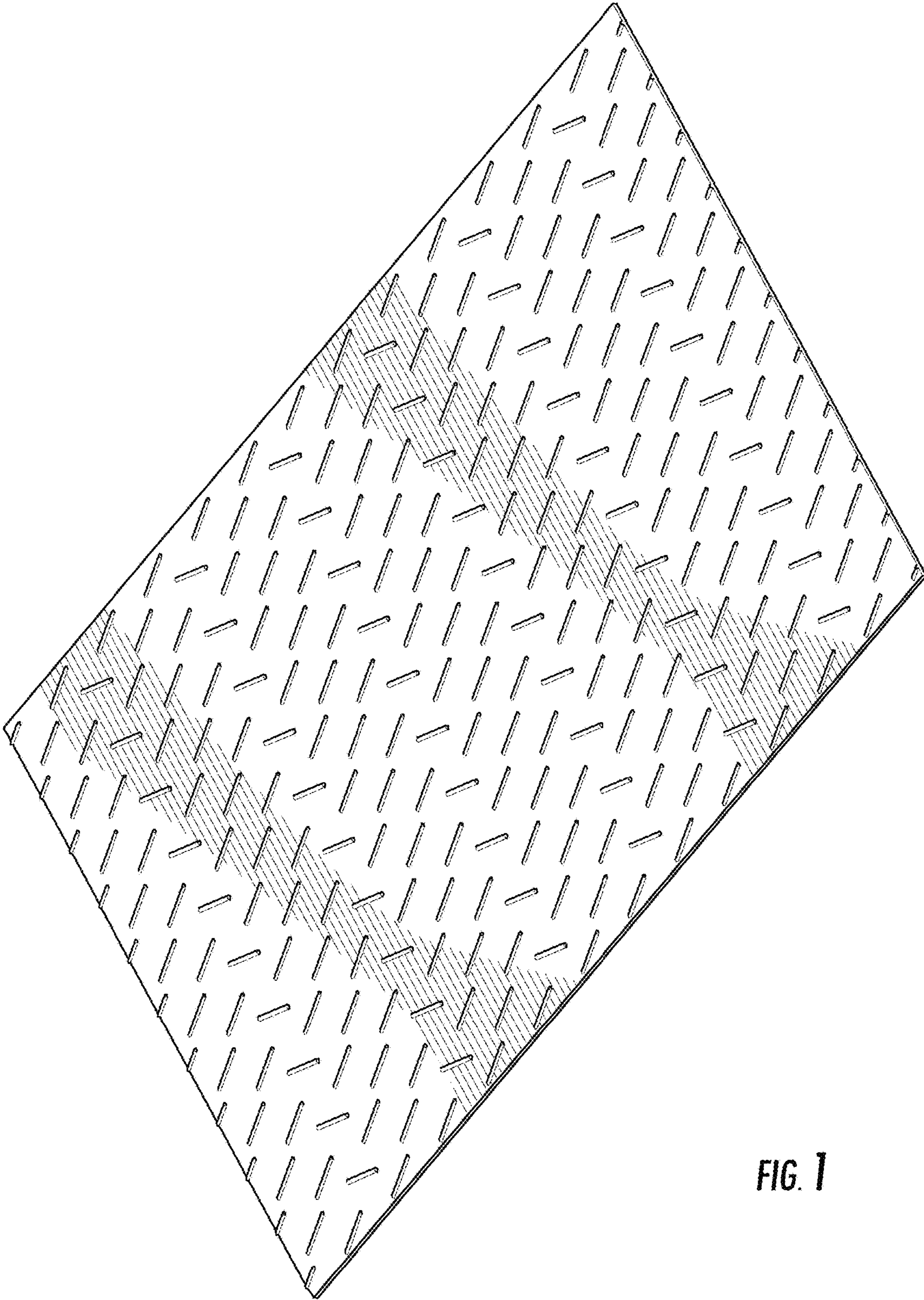


FIG. 1

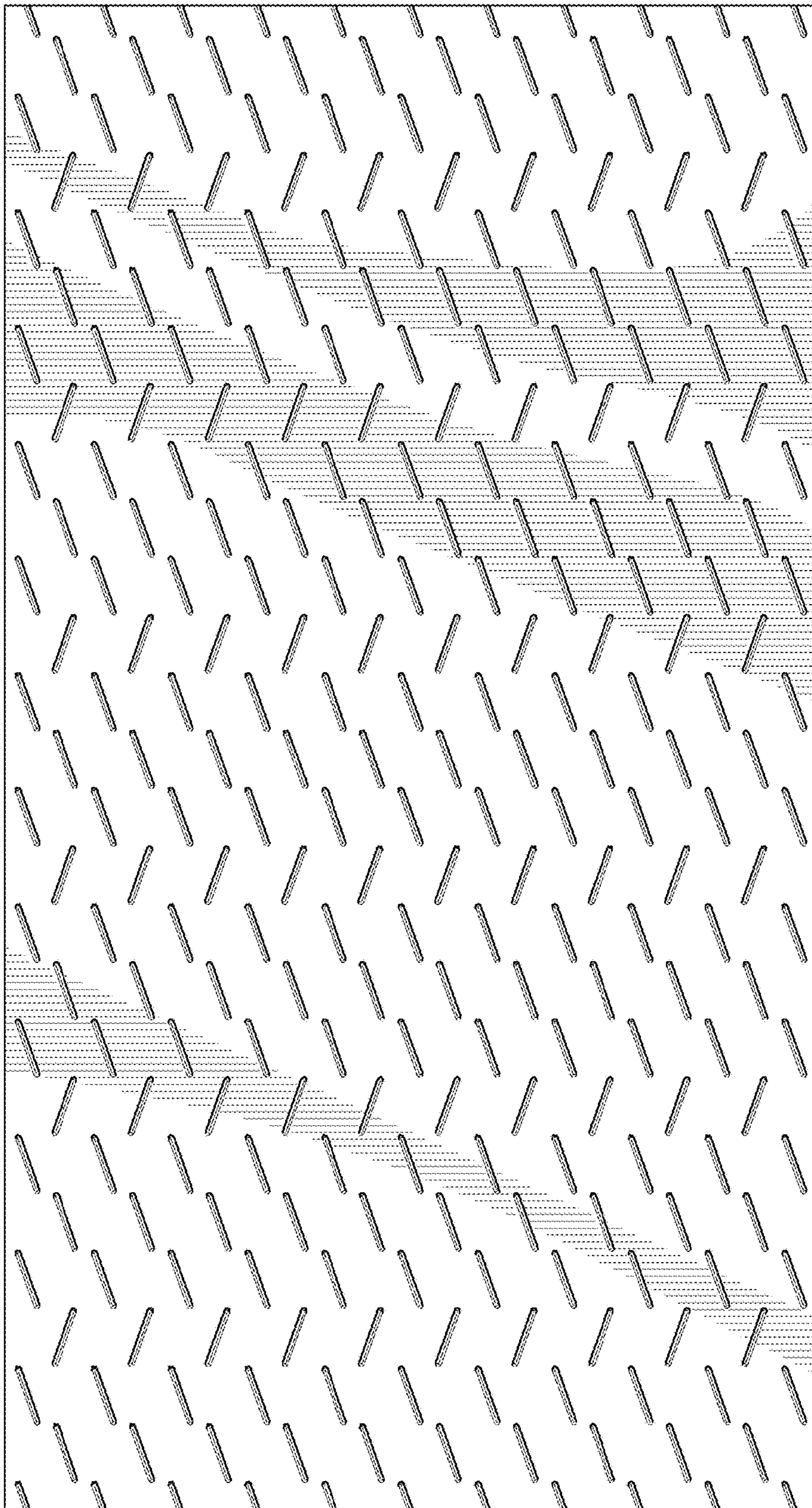


FIG. 2

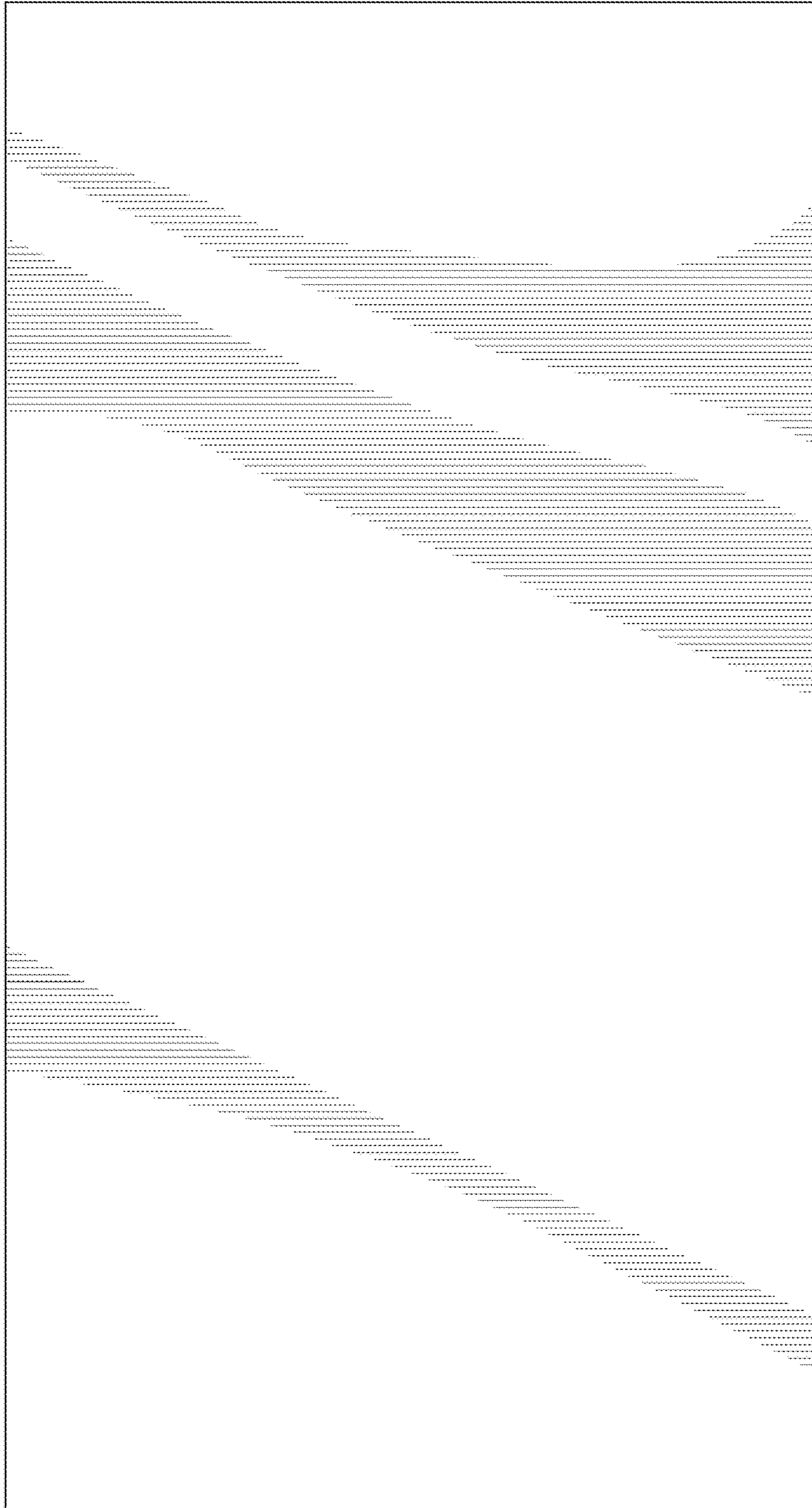
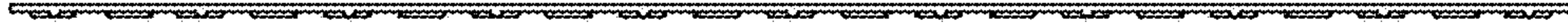


FIG. 3



*FIG. 4*



*FIG. 5*



**FIG. 6**



**FIG. 7**