



US00D950482S

(12) **United States Design Patent** (10) **Patent No.:** **US D950,482 S**
Perkins et al. (45) **Date of Patent:** **** May 3, 2022**

(54) **SOLAR ROOFING SYSTEM**

(71) Applicant: **GAF Energy LLC**, Parsippany, NJ (US)

(72) Inventors: **Richard Perkins**, San Jose, CA (US);
Matthew Peterson Grigsby, San Francisco, CA (US)

(73) Assignee: **GAF Energy LLC**, Parsippany, NJ (US)

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

(21) Appl. No.: **29/753,865**

(22) Filed: **Oct. 2, 2020**

(51) **LOC (13) Cl.** **13-04**

(52) **U.S. Cl.**
USPC **D13/102**

(58) **Field of Classification Search**
USPC D10/104.1; D13/101, 102, 103, 107,
D13/109, 118, 119, 184, 199; D14/371,
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,336,304 B1 1/2002 Mimura et al.
7,587,864 B2 9/2009 McCaskill et al.
(Continued)

FOREIGN PATENT DOCUMENTS

CA 2829440 A1 4/2014
WO 2011/049944 A1 4/2011

OTHER PUBLICATIONS

Solar Shingles. (Design—© Questel) orbit.com. [Online PDF compilation of references] 21 pgs. Print Dates Range May 17, 2018-Apr. 28, 2016 [Retrieved Jan. 5, 2022].*

(Continued)

Primary Examiner — Manpreet S Matharu

Assistant Examiner — Suzanne E Tisdell

(74) *Attorney, Agent, or Firm* — Greenberg Traurig, LLP

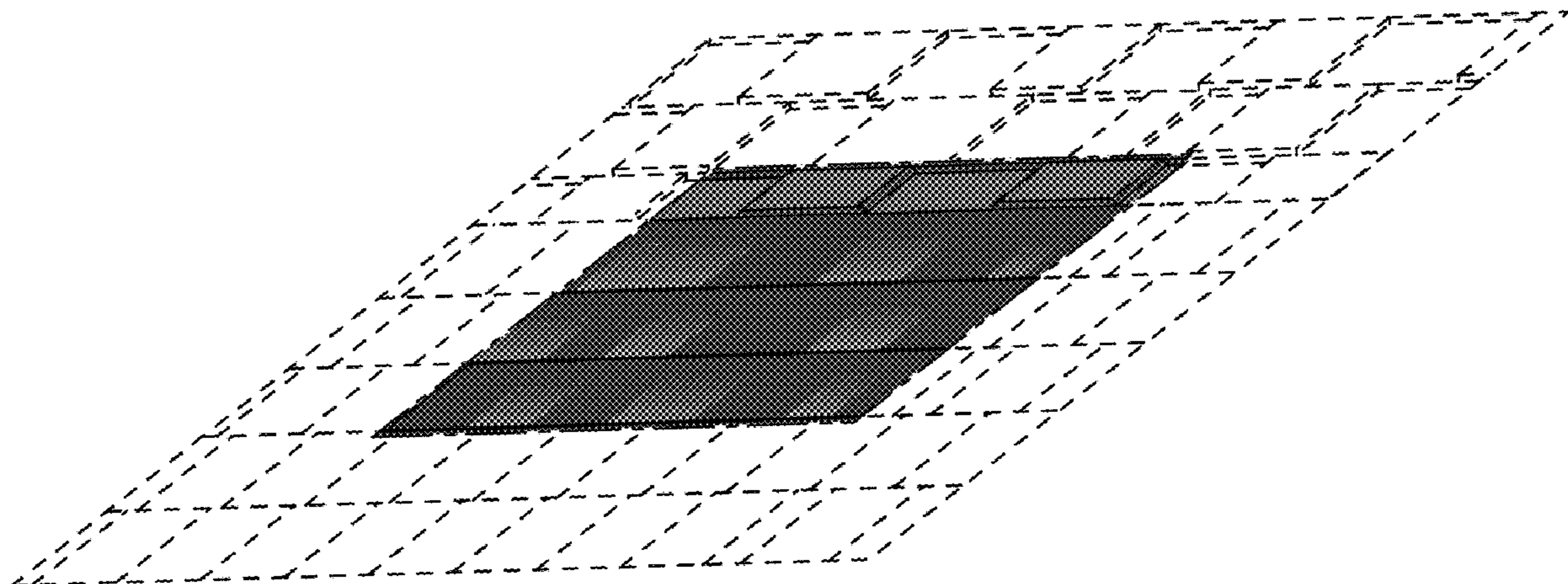
(57) **CLAIM**

The ornamental design for a solar roofing system, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of an embodiment of a solar roofing system showing our new design;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a rear elevational view thereof;
FIG. 4 is a left side elevational view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom plan view thereof;
FIG. 8 is a perspective view of an embodiment of a solar roofing system showing our new design;
FIG. 9 is a front elevational view thereof;
FIG. 10 is a rear elevational view thereof;
FIG. 11 is a left side elevational view thereof;
FIG. 12 is a right side elevational view thereof;
FIG. 13 is a top plan view thereof;
FIG. 14 is a bottom plan view thereof;
FIG. 15 is a perspective view of an embodiment of a solar roofing system showing our new design;
FIG. 16 is a front elevational view thereof;
FIG. 17 is a rear elevational view thereof;
FIG. 18 is a left side elevational view thereof;
FIG. 19 is a right side elevational view thereof;
FIG. 20 is a top plan view thereof;
FIG. 21 is a bottom plan view thereof;
FIG. 22 is a perspective view of an embodiment of a solar roofing system showing our new design;
FIG. 23 is a front elevational view thereof;
FIG. 24 is a rear elevational view thereof;
FIG. 25 is a left side elevational view thereof;
FIG. 26 is a right side elevational view thereof;
FIG. 27 is a top plan view thereof; and,
FIG. 28 is a bottom plan view thereof.

1 Claim, 20 Drawing Sheets



(58) **Field of Classification Search**
 USPC D14/432, 439, 441, 447, 451; D21/480,
 D21/484; D25/109, 140, 144
 CPC .. F21S 8/086; F21S 8/088; F21S 9/032; F21S
 9/035; H01L 31/042; H01L 31/022425;
 H01L 31/18
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,666,491	B2	2/2010	Yang et al.	
7,678,990	B2	3/2010	McCaskill et al.	
7,678,991	B2	3/2010	McCaskill et al.	
7,819,114	B2	10/2010	Augenbraun et al.	
7,824,191	B1	11/2010	Browder	
7,832,176	B2	11/2010	McCaskill et al.	
8,371,076	B2	2/2013	Jones et al.	
8,468,754	B2	6/2013	Railkar et al.	
8,505,249	B2	8/2013	Geary	
8,512,866	B2	8/2013	Taylor	
8,623,499	B2	1/2014	Viasnoff	
8,713,860	B2	5/2014	Railkar et al.	
8,925,262	B2	1/2015	Railkar et al.	
8,994,224	B2	3/2015	Mehta et al.	
9,145,498	B2	9/2015	Ultsch	
9,169,646	B2	10/2015	Rodrigues et al.	
9,171,991	B2	10/2015	Pearce	
9,273,885	B2	3/2016	Rodrigues et al.	
9,670,353	B2	6/2017	Peng et al.	
9,711,672	B2	7/2017	Wang	
9,912,284	B2	3/2018	Svec	
9,920,515	B2	3/2018	Xing et al.	
9,923,515	B2	3/2018	Rodrigues et al.	
D814,399	S *	4/2018	Atchley	H02S 20/23 D13/102
9,987,786	B2	6/2018	Stoiljkovic et al.	
9,991,412	B2	6/2018	Gonzalez et al.	
10,015,933	B2	7/2018	Boldrin	
10,027,273	B2	7/2018	West et al.	
10,115,850	B2	10/2018	Rodrigues et al.	
10,179,852	B2	1/2019	Gossi et al.	
10,187,005	B2	1/2019	Rodrigues et al.	
10,256,765	B2	4/2019	Rodrigues et al.	
10,480,192	B2	11/2019	Xing et al.	
D879,031	S *	3/2020	Lance	D13/102
D887,963	S *	6/2020	Yang	D13/102
D888,655	S *	6/2020	Yang	D13/102
10,669,414	B2	6/2020	Li et al.	
D900,017	S *	10/2020	Aiken	D13/102
D901,376	S *	11/2020	Lu	D13/102
D904,289	S *	12/2020	Lance	D13/102
D911,263	S *	2/2021	Badilla	D13/102
10,907,355	B2	2/2021	Hubbard et al.	
10,914,063	B2	2/2021	Lee et al.	
D917,380	S *	4/2021	Gao	D13/102
RE48,555	E	5/2021	Cancio et al.	

11,015,085	B2	5/2021	Bruns et al.	
D926,117	S *	7/2021	Silva	D13/102
11,065,849	B2	7/2021	Ackermann et al.	
D928,079	S *	8/2021	Lance	D13/102
D931,796	S *	9/2021	Huang	D13/102
D938,901	S *	12/2021	McDonald	D13/102
2002/0053360	A1	5/2002	Kinoshita et al.	
2002/0102422	A1	8/2002	Hubbard et al.	
2002/0129849	A1	9/2002	Heckerroth	
2003/0217768	A1	11/2003	Guha	
2005/0115603	A1	6/2005	Yoshida et al.	
2006/0042683	A1	3/2006	Gangemi	
2008/0006323	A1	1/2008	Kalkanoglu et al.	
2009/0114261	A1	5/2009	Stancel et al.	
2009/0159118	A1	6/2009	Kalkanoglu	
2009/0229652	A1	9/2009	Mapel et al.	
2010/0101634	A1	4/2010	Frank et al.	
2010/0326488	A1	12/2010	Aue et al.	
2011/0030761	A1	2/2011	Kalkanoglu et al.	
2011/0036386	A1	2/2011	Browder	
2011/0048507	A1	3/2011	Livsey et al.	
2011/0058337	A1	3/2011	Han	
2011/0132427	A1	6/2011	Kalkanoglu et al.	
2011/0302859	A1	12/2011	Crasnianski	
2012/0212065	A1	8/2012	Cheng et al.	
2012/0233940	A1	9/2012	Perkins	
2012/0240490	A1	9/2012	Gangemi	
2013/0014455	A1	1/2013	Grieco	
2015/0024159	A1	1/2015	Bess et al.	
2016/0359451	A1	12/2016	Mao et al.	
2017/0159292	A1	6/2017	Chihlas et al.	
2017/0203555	A1	7/2017	Wang et al.	
2018/0094438	A1	4/2018	Wu et al.	
2018/0094439	A1	4/2018	Wang et al.	
2018/0281347	A1	10/2018	Gossi	
2020/0020819	A1	1/2020	Farhangi	
2020/0224419	A1	7/2020	Boss et al.	
2020/0313499	A1	10/2020	Spierling	
2021/0002898	A1	1/2021	Knebel et al.	
2021/0095474	A1	4/2021	Yang et al.	
2021/0113970	A1	4/2021	Stainer et al.	
2021/0171808	A1	6/2021	Ackermann et al.	
2021/0172174	A1	6/2021	Ackermann et al.	

OTHER PUBLICATIONS

Will Tesla Tiles Finally Give Solar Shingles Their Day in the Sun? May 18, 2017. Scientific American. <https://www.scientificamerican.com/article/will-tesla-rsquo-s-tiles-finally-give-solar-shingles-their-day-in-the-sun/>.*

Solar Shingles What you Need to Know. Sep. 28, 2018. Roofing Compare. <https://www.roofingcompare.com/materials/solar-shingles.html>.*

Why Solar Panels And Metal Roofs Are The Perfect Match Aug. 7, 2019. Middle South Systems. <https://neworleansmetalroofing.com/why-solar-panels-and-metal-roofs-are-the-perfect-match/>.*

* cited by examiner

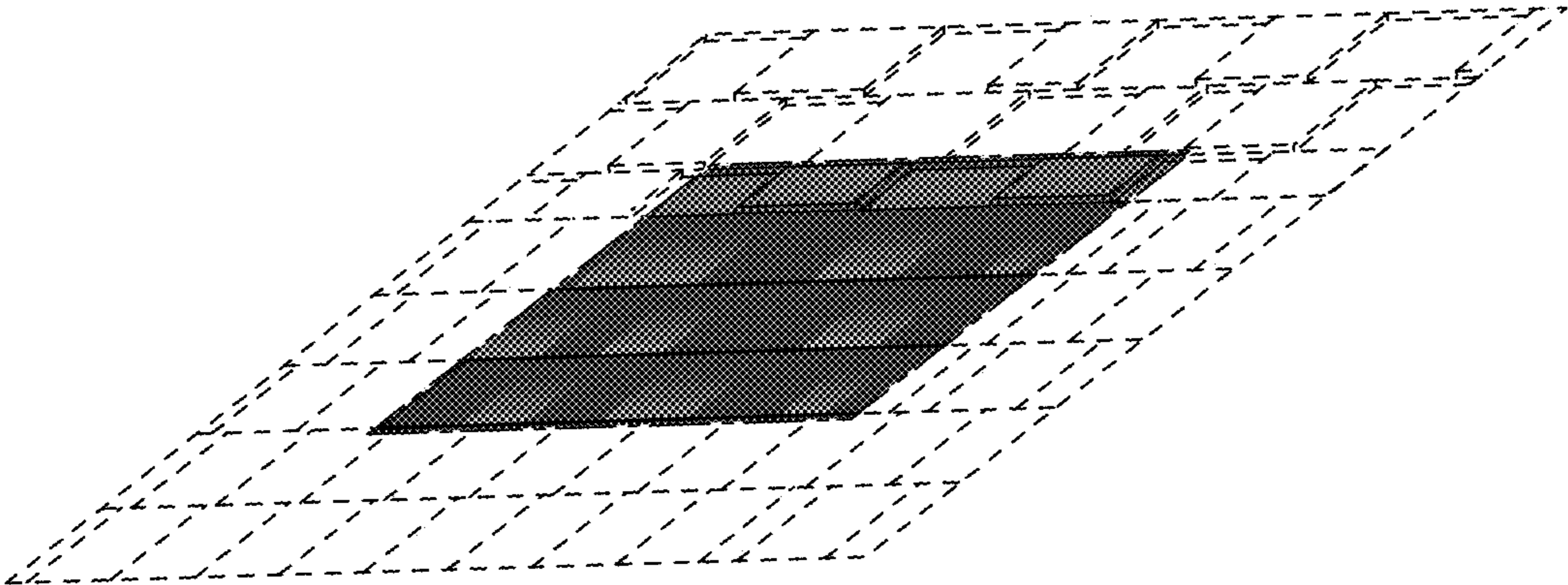


FIG. 1

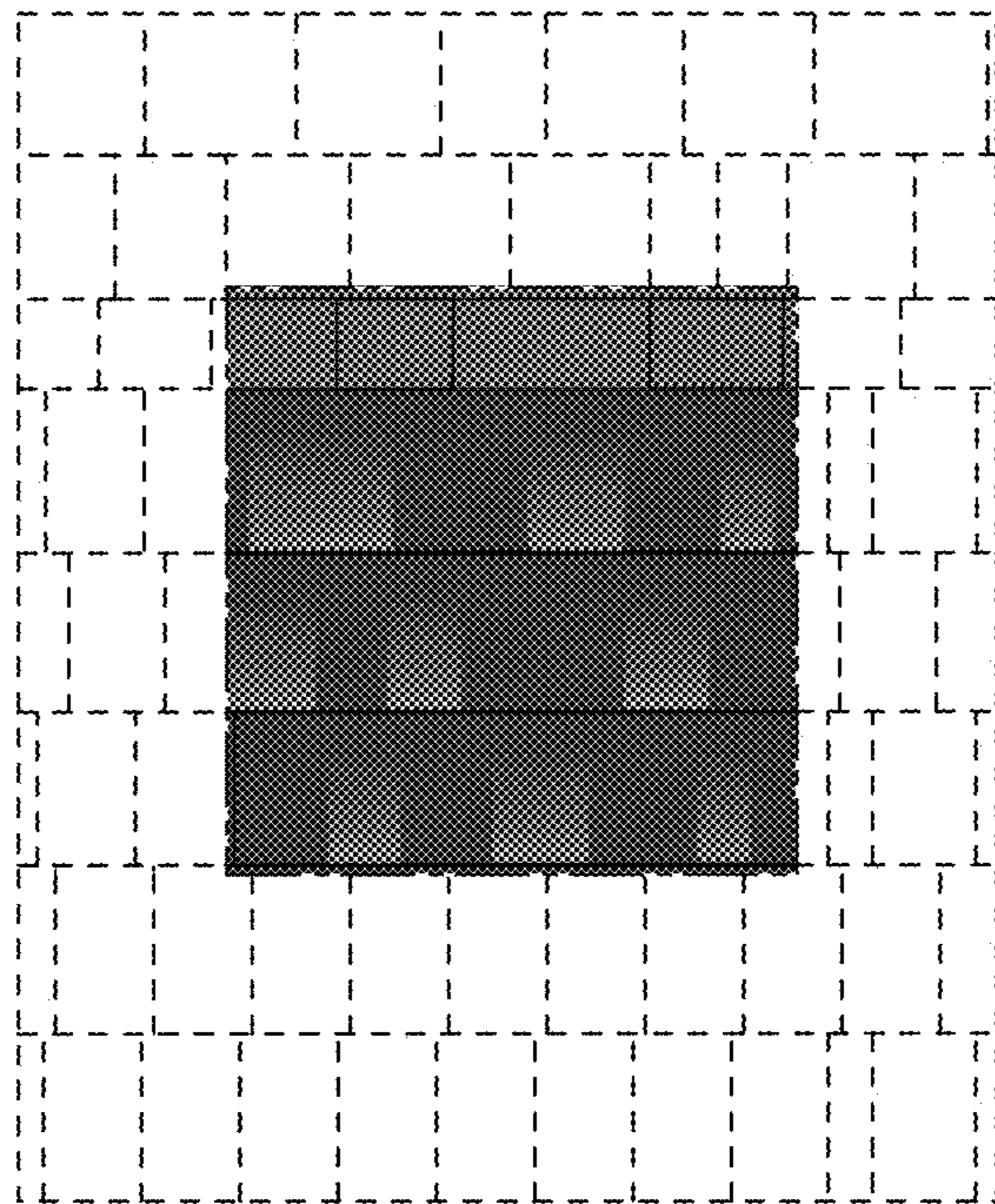


FIG. 2



FIG. 3

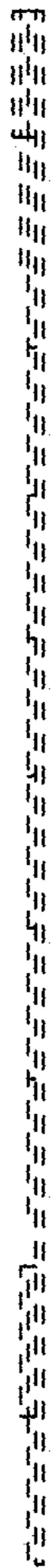


FIG. 4

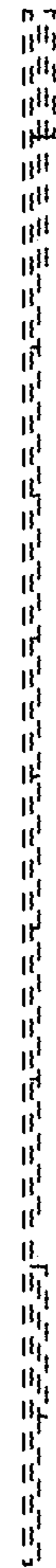


FIG. 5

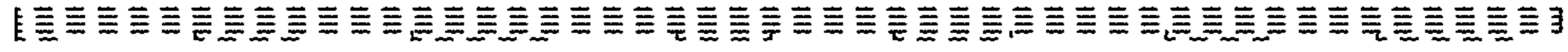


FIG. 6

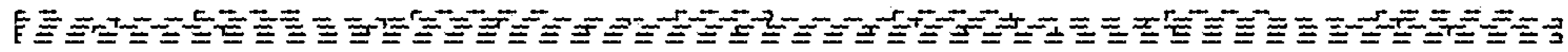


FIG. 7

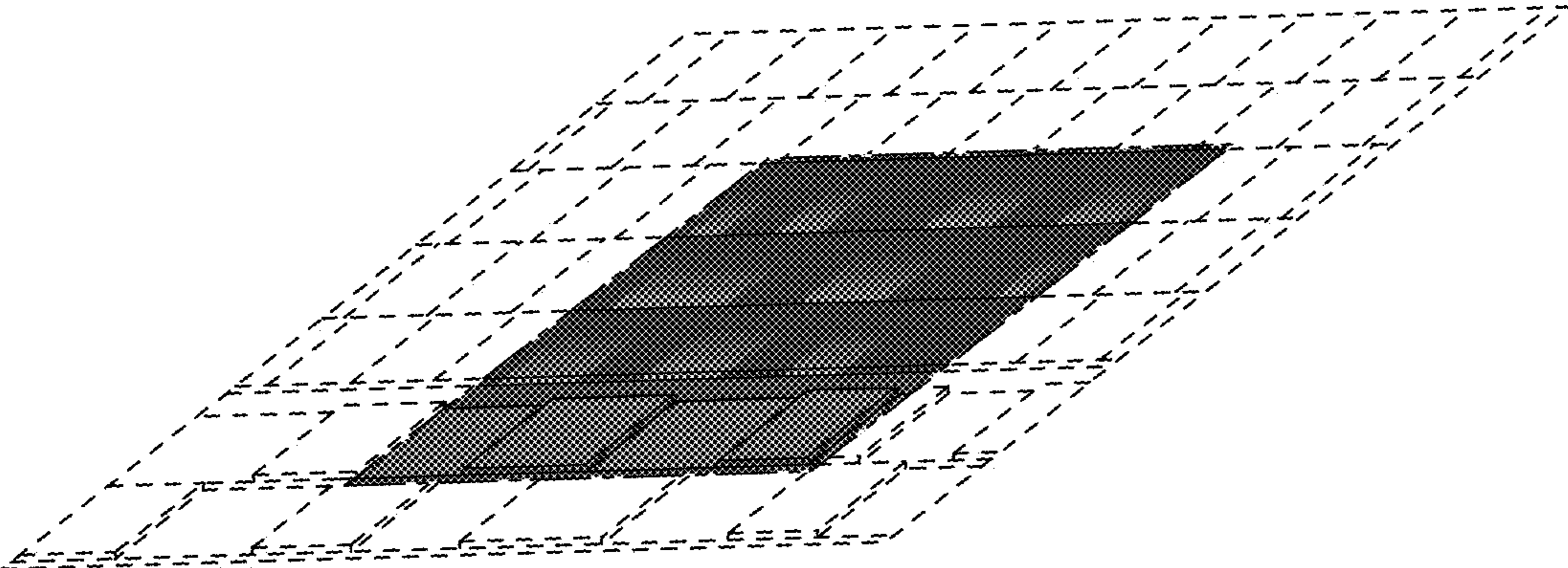


FIG. 8

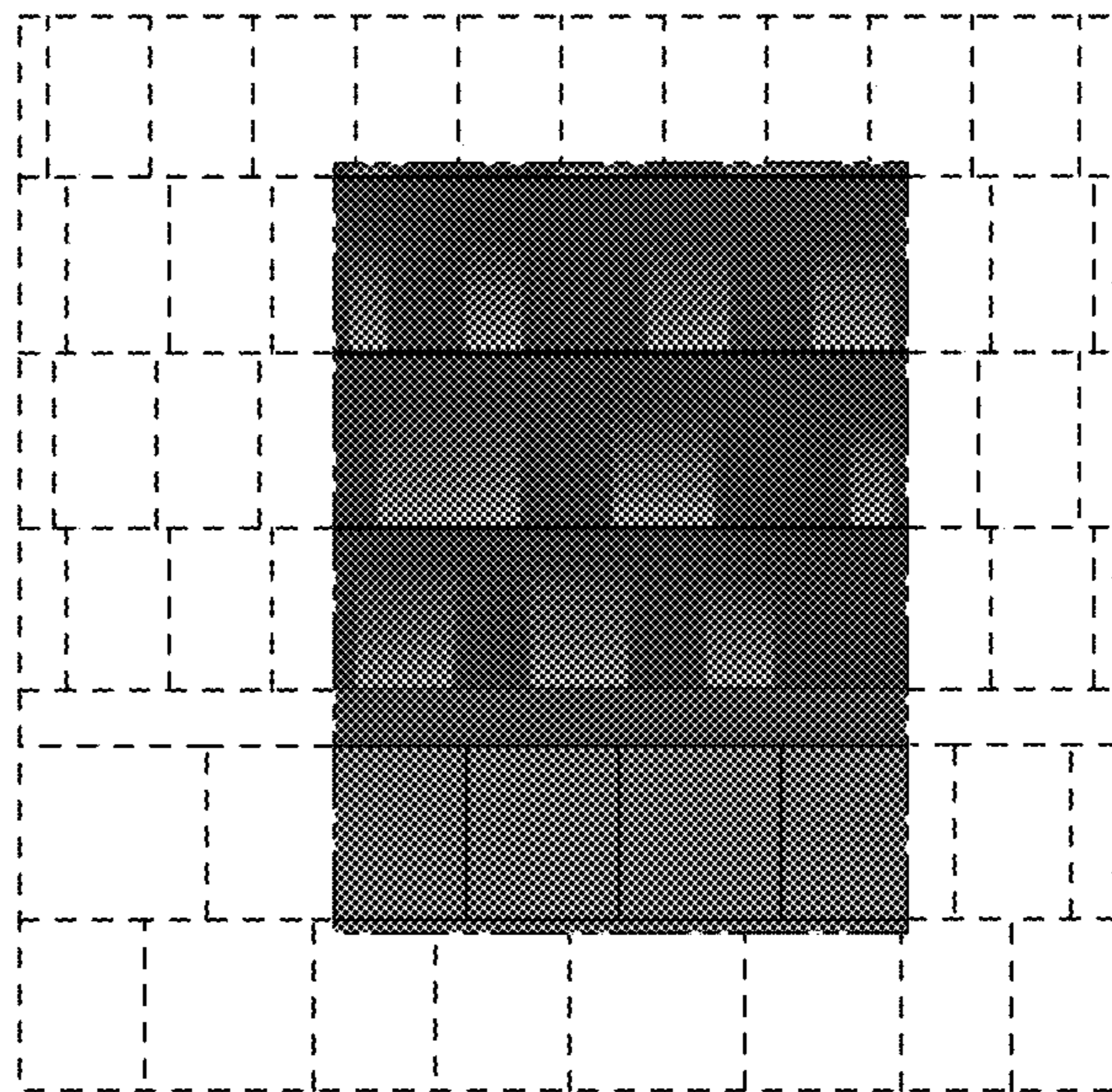


FIG. 9



FIG. 10

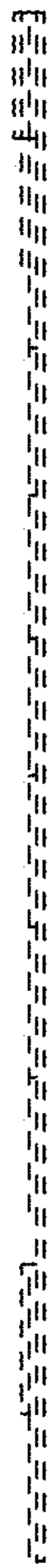


FIG. 11

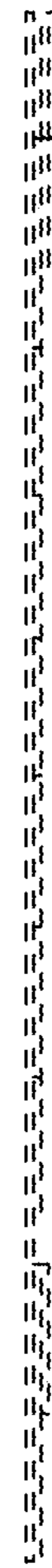


FIG. 12

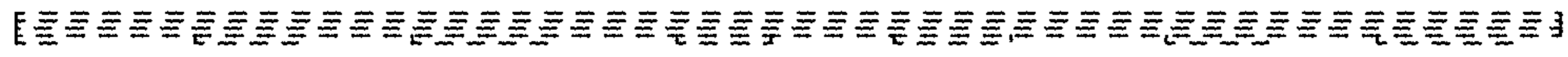


FIG. 13

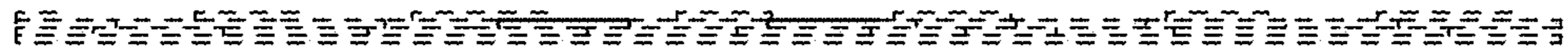


FIG. 14

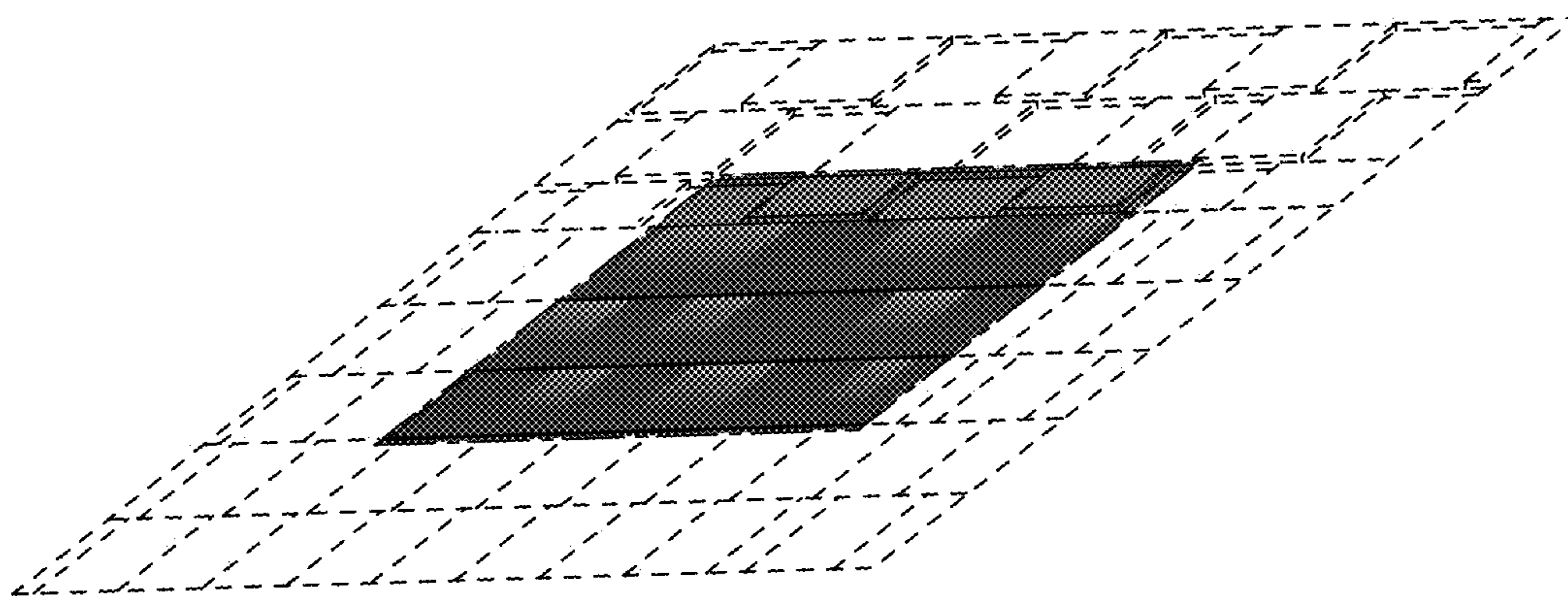


FIG. 15

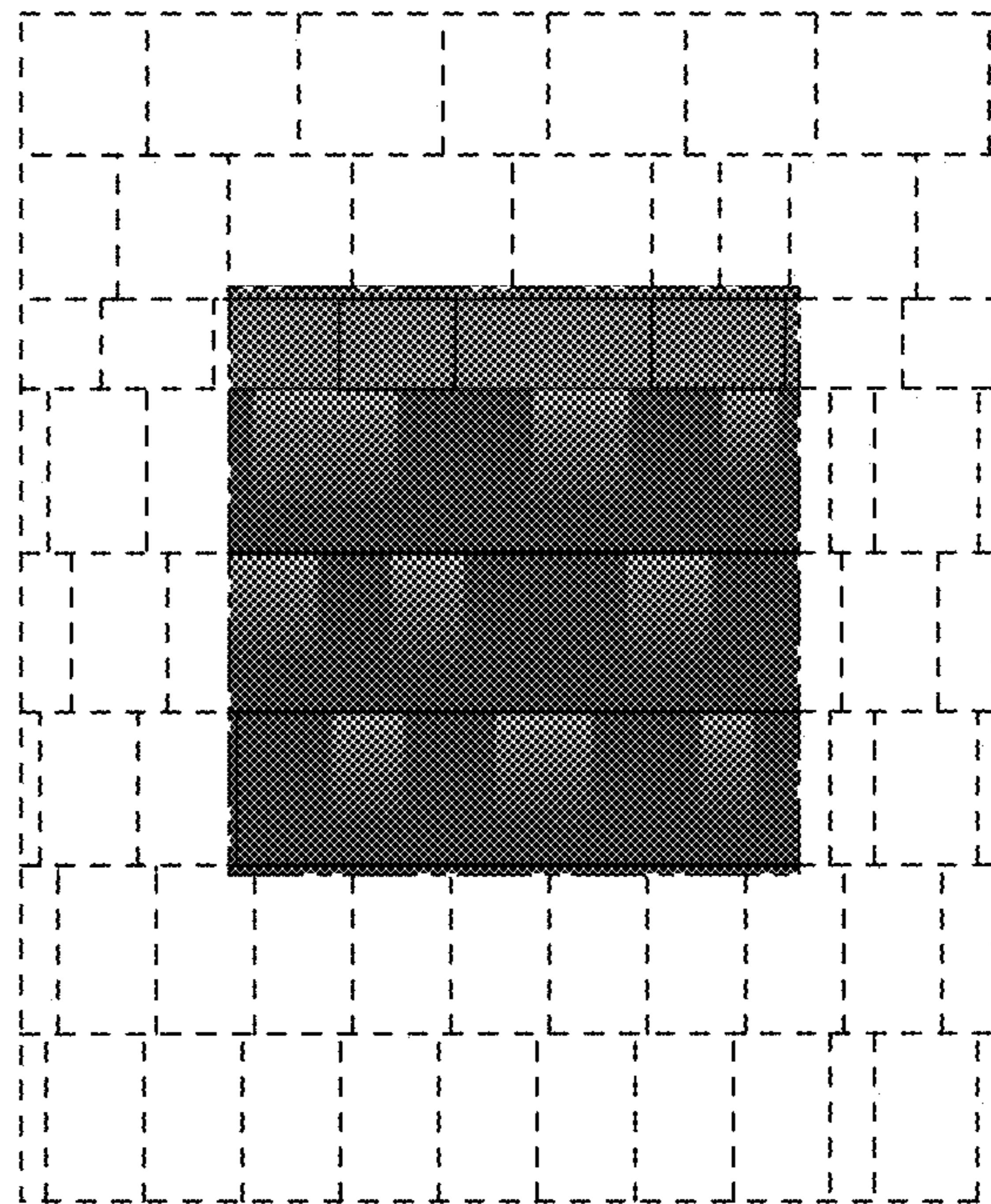


FIG. 16



FIG. 17

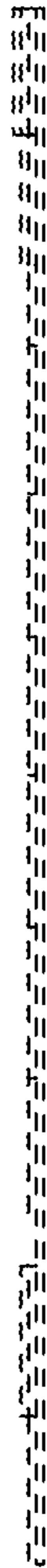


FIG. 18

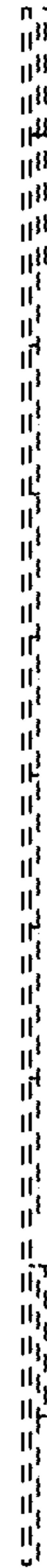


FIG. 19

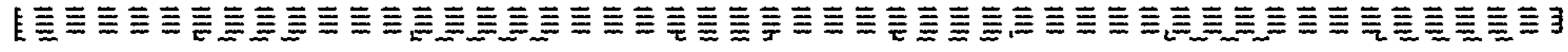


FIG. 20

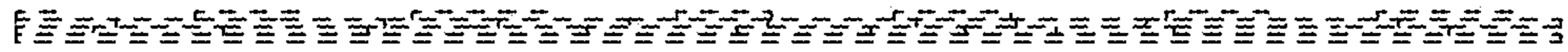


FIG. 21

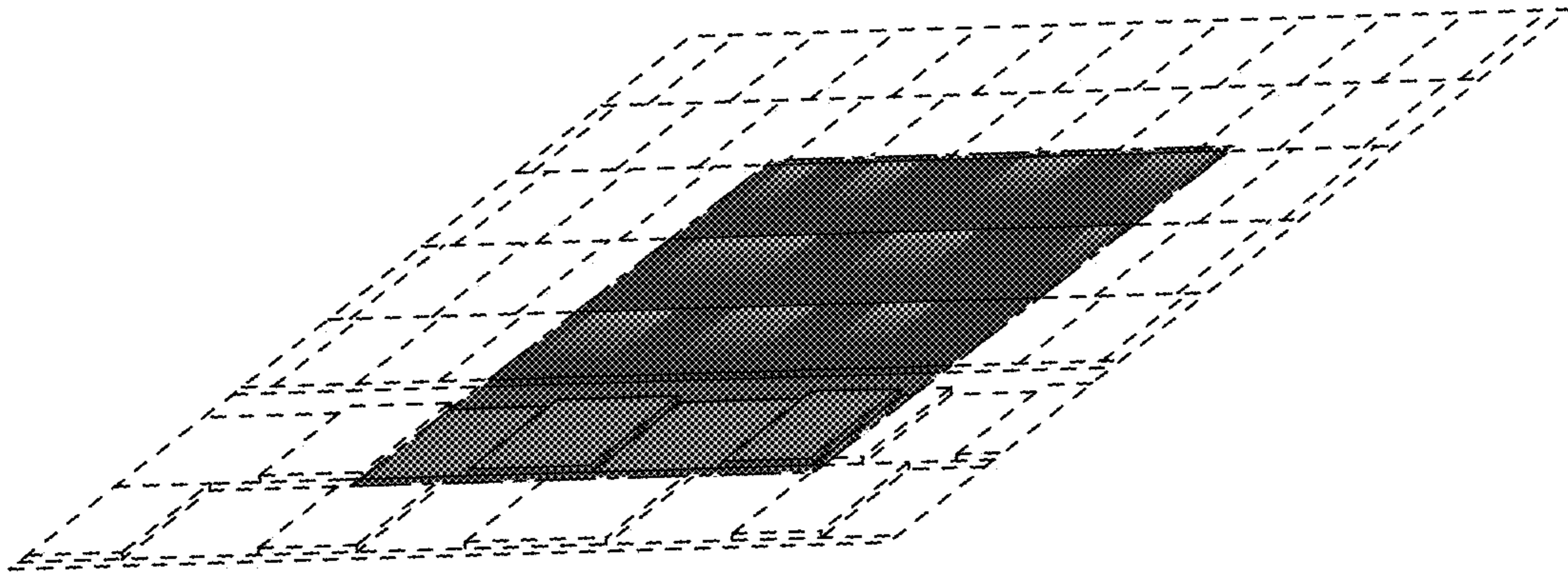


FIG. 22

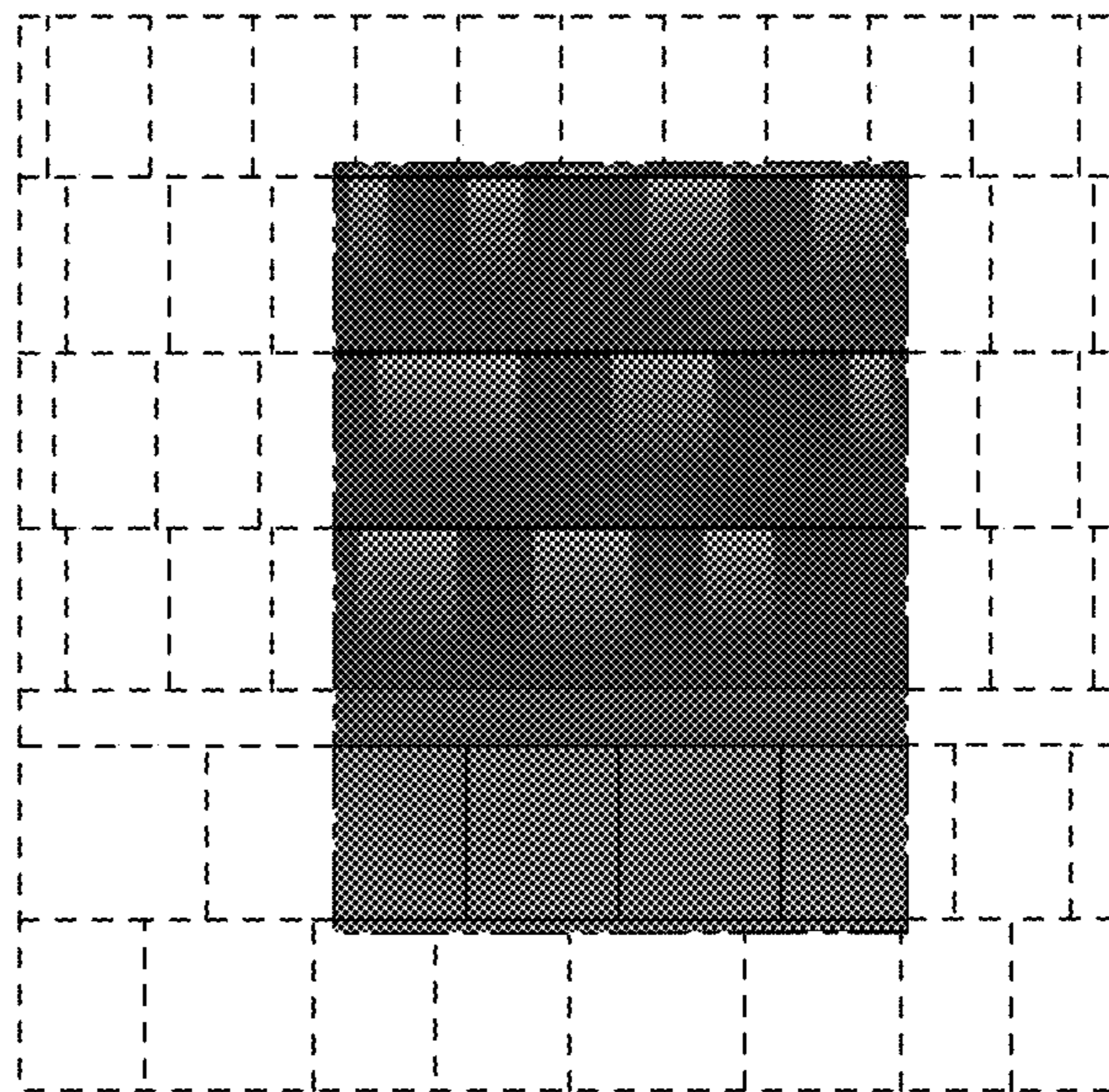


FIG. 23



FIG. 24

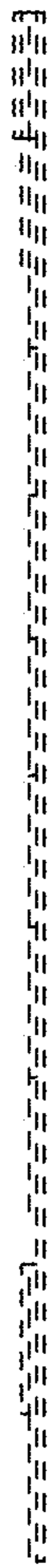


FIG. 25

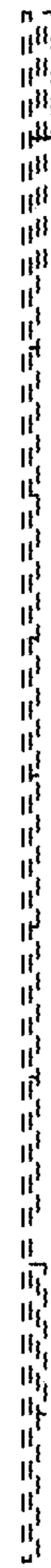


FIG. 26

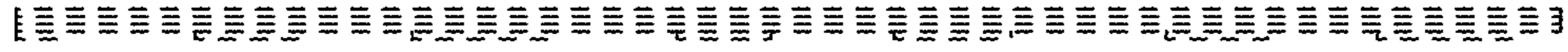


FIG. 27

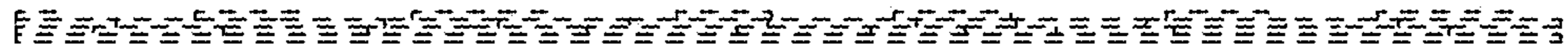


FIG. 28