US00D852317S

(12) United States Design Patent

Shany et al.

(10) Patent No.: US D852,317 S
(45) Date of Patent: ** Jun. 25, 2019

(54) **CONTAINMENT BOOM**

(71) Applicant: **HARBO Technologies Ltd.**, Tel-Aviv (IL)

(72) Inventors: **Arnon Shany**, Moshav Neve Yarak (IL); **Boaz Ur**, Tel-Aviv (IL); **Haim Greenberg**, Ramat-Gan (IL)

(73) Assignee: **HARBO Technologies Ltd.**, Tel-Aviv (IL)

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

(21) Appl. No.: **29/611,603**

(22) Filed: **Jul. 24, 2017**

(51) **LOC (11) Cl.** **23-01**

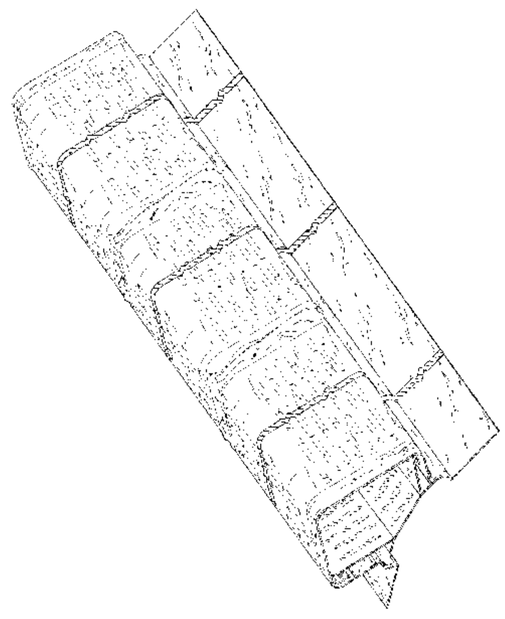
(52) **U.S. Cl.**
USPC **D23/200**

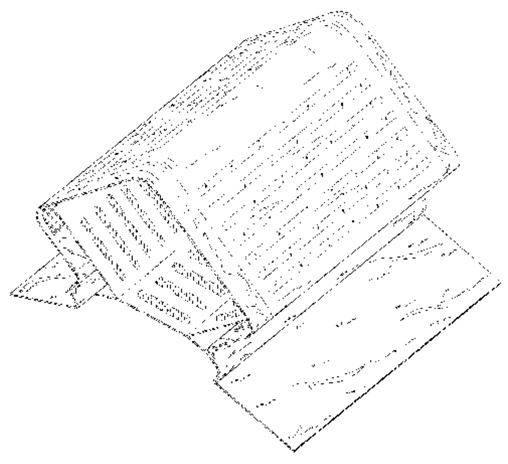
(58) **Field of Classification Search**
USPC D23/200, 206, 207, 209
CPC E02B 15/00; E02B 15/06; E02B 15/0871; E02B 15/08; E02B 15/085; E02B 15/0864
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,853,006	A	9/1958	Moir	
3,237,414	A	3/1966	Straub et al.	
3,321,923	A	5/1967	Smith et al.	
3,476,246	A	11/1969	Dahan	
3,499,291	A	3/1970	Mikkelsen	
3,563,036	A	2/1971	Smith et al.	
3,567,019	A	3/1971	Headrick	
3,638,429	A	2/1972	Sladek et al.	
3,650,406	A	3/1972	Brown et al.	
3,662,891	A	5/1972	Headrick	
3,708,982	A	1/1973	Blockwick	
3,744,253	A	7/1973	Williams et al.	
3,756,031	A	9/1973	Smith et al.	
3,798,911	A *	3/1974	Oberg	E02B 15/08 405/69
3,818,708	A	6/1974	Benson	
3,901,753	A	8/1975	Öberg	
3,922,860	A	12/1975	Tanksley	
RE28,966	E	9/1976	Blockwick	
3,998,060	A	12/1976	Preus	
4,123,911	A	11/1978	Finigan et al.	
4,124,981	A	11/1978	Preus	
4,319,858	A	3/1982	Jaffrennou et al.	
4,330,223	A	5/1982	Webb	
4,333,463	A	6/1982	Holtman	
4,650,368	A	3/1987	Bayer	
4,652,173	A	3/1987	Kallestad	
4,749,600	A	6/1988	Cullen et al.	
4,998,845	A	3/1991	Smith	
5,020,940	A	6/1991	Smith	
5,040,918	A	8/1991	Taricco	
5,074,709	A	12/1991	Stensland	
5,110,236	A	5/1992	Santamaria	
5,120,159	A	6/1992	Smith	
5,152,636	A *	10/1992	Myers	E02B 15/08 405/68
5,195,844	A	3/1993	Goans	
5,197,821	A	3/1993	Cain et al.	
5,238,327	A	8/1993	Blair et al.	
5,362,180	A	11/1994	Canning et al.	
5,372,455	A	12/1994	Tarca et al.	
5,433,994	A	7/1995	McKinney et al.	
5,480,262	A *	1/1996	Russo, III	E02B 15/08 405/66
5,522,674	A	6/1996	Cooper	
5,547,313	A *	8/1996	Holland	E02B 15/06 405/63
5,580,185	A	12/1996	Ware	
5,695,300	A	12/1997	Echols et al.	
5,711,634	A *	1/1998	Oberg	E02B 15/08 405/66
5,885,451	A	3/1999	Porrovecchio, Sr.	
6,767,162	B2	7/2004	Meyers et al.	
6,797,857	B2	9/2004	Tanhehco	
6,860,677	B2 *	3/2005	Johnston	E02B 8/023 210/170.1
8,398,334	B1	3/2013	Doyle	
8,450,389	B1	5/2013	Barefoot	
8,622,650	B2 *	1/2014	Lifton	E01F 15/086 404/6
8,721,220	B2 *	5/2014	Fore, III	E02B 15/06 405/60
8,821,363	B1	9/2014	Barefoot	
2002/0018695	A1	2/2002	Johnson	
2006/0099033	A1	5/2006	Boraggina	
2009/0000876	A1	1/2009	Ablabutyan et al.	
2010/0278591	A1	11/2010	Tasker	
2011/0280660	A1	11/2011	Bahukudumbi et al.	
2011/0318109	A1	12/2011	Miller et al.	





2012/0020732	A1	1/2012	Stiles et al.
2014/0076298	A1	3/2014	Meggs et al.
2014/0213662	A1	7/2014	Boris et al.
2015/0065974	A1	3/2015	Michiels et al.
2015/0086270	A1	3/2015	Shany et al.
2017/0233967	A1	8/2017	Shany et al.
2017/0306580	A1	10/2017	Shany et al.

FOREIGN PATENT DOCUMENTS

CN	201103116	8/2008
CN	201531015	7/2010
CN	101956386	1/2011
DE	4237185	5/1994
EP	0033238	8/1981
GB	1383315	2/1974
WO	WO 91/05918	5/1991
WO	WO 91/08348	6/1991
WO	WO 92/09750	6/1992
WO	WO 92/09751	6/1992
WO	WO 92/09752	6/1992
WO	WO 2004/072413	8/2004
WO	WO 2008/023094	2/2008
WO	WO 2008/132461	11/2008
WO	WO 2011/163383	12/2011
WO	WO 2013/156998	10/2013
WO	WO 2016/059637	4/2016

OTHER PUBLICATIONS

Official Action Dated Dec. 15, 2017 From the US Patent and Trademark Office Re. U.S. Appl. No. 15/518,494. (18 pages).
Search Report and Written Opinion Dated Dec. 1, 2017 From the Intellectual Property Office of Singapore, IPOS Re. Application No. 11201702883T. (10 Pages).
Applicant-Initiated Interview Summary Dated Dec. 14, 2016 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 14/394,281 (3 pages).
Communication Pursuant to Article 94(3) EPC Dated Nov. 3, 2016 From the European Patent Office Re. Application No. 13777827.0. (5 Pages).
Communication Pursuant to Rules 70(2) and 70a(2) EPC Dated Dec. 15, 2015 From the European Patent Office Re. Application No. 13777827.0.
Communication Relating to the Results of the Partial International Search Dated Jan. 14, 2016 From the International Searching Authority Re. Application No. PCT/IL2015/051025.
International Preliminary Report on Patentability Dated Jan. 3, 2017 From the International Preliminary Examining Authority Re. Application No. PCT/IL2015/051025. (33 Pages).
International Preliminary Report on Patentability Dated Oct. 30, 2014 From the International Bureau of WIPO Re. Application No. PCT/IL2013/050325.
International Search Report and the Written Opinion Dated Aug. 11, 2013 From the International Searching Authority Re. Application No. PCT/IL2013/050325.
International Search Report and the Written Opinion Dated Apr. 12, 2016 From the International Searching Authority Re. Application No. PCT/IL2015/051025.
Notice of Allowance Dated Apr. 12, 2017 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 14/394,281. (5 pages).
Notification of Office Action and Search Report Dated Sep. 28, 2015 From the State Intellectual Property Office of the People's Republic of China Re. Application No. 201380031112.7 and Its Translation of Office Action in English.
Notification of Office Action Dated Jun. 3, 2016 From the State Intellectual Property Office of the People's Republic of China Re. Application No. 201380031112.7.
Official Action Dated Jun. 20, 2017 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 15/518,494. (15 pages).
Official Action Dated Jan. 23, 2017 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 14/394,281. (23 pages).
Official Action Dated Aug. 24, 2016 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 14/394,281.
Official Action Dated Mar. 24, 2016 From the U.S. Patent and Trademark Office Re. U.S. Appl. No. 14/394,281.
Official Action Dated Sep. 24, 2015 From the US Patent and Trademark Office Re. U.S. Appl. No. 14/394,281.
Supplementary European Search Report and the European Search Opinion Dated Nov. 26, 2015 From the European Patent Office Re. Application No. 13777827.0.
Translation of Notification of Office Action Dated Jun. 3, 2016 From the State Intellectual Property Office of the People's Republic of China Re. Application No. 201380031112.7.
Written Opinion Dated Aug. 4, 2015 From the Intellectual Property Office of Singapore Re. Application No. 11201406559V.
Written Opinion Dated May 16, 2016 From the Intellectual Property Office of Singapore Re. Application No. 11201406559V.
Written Opinion Dated Nov. 28, 2016 From the Intellectual Property Office of Singapore Re. Application No. 11201406559V. (7 Pages).
Written Opinion Dated Sep. 28, 2016 From the International Preliminary Examining Authority Re. Application No. PCT/IL2015/051025.
ASTM "Standard Specification for Oil Spill Response Boom Connection: Slide Connector", ASTM International, Designation F 2438-04, p. 1-5, Dec. 2004.
Fang et al. "Optimization of an Oil Boom Arrangement", Proceedings of the International Oil Spill Conference, 2001(2): 1367-1374, Mar. 2001.
Communication Pursuant to Article 94(3) EPC Dated Oct. 6, 2017 From the European Patent Office Re. Application No. 13777827.0. (5 Pages).
Notice of Intention to Refuse Patent Application and Examination Report Dated Oct. 26, 2017 From the Intellectual Property Office of Singapore, IPOS Re. Application No. 11201406559V. (8 Pages).
Office Action Dated Sep. 2, 2018 From the Israel Patent Office Re. Application No. 61534 (3 pages).
Alamy "High Seas Oil Containment Boom in the Mediterranean Ocean", retrieved from alamy.com, 1 Page, 2018.
Alibaba "Oil Spill Containment Boom", retrieved from alibaba.com, 1 Page, 2018.
Chinacsw "Harbor Floating Spill Containment Boom", retrieved from chinacsw.com, 1 Page, 2018.
Chinacsw "Silt Curtain, Oil Containment Boom and Oil Spill Containment Berm", retrieved from Chinacsw.com, 1 Page, 2018.
Ipieca "The Global Oil and Gas Industry Association for Environmental and Social Issues", retrieved from ipieca.org, 48 Pages, 2015.
Mavideniz "Oil Fence Boom", retrieved from mavideniz.com, 1 Page, 2018.
Nautic Expo "Harbor Boom", retrieved from nauticexpo.com, 1 Page, 2018.
Shutterstock "Containment Boom Temporary Floating Barrier Used Stock Photo", retrieved from Shutterstock.com, 1 Page, 2018.
Requisition by the Examiner dated Dec. 23, 2018 From the Innovation, Science and Economic Development Canada, Canadian Intellectual Property Office Re. Application No. 2,870,384. (6 Pages).

* cited by examiner

Primary Examiner — Robin V Webster

(57) **CLAIM**

The ornamental design for a containment boom, as shown and described.

DESCRIPTION

FIG. **1** is a top view of an embodiment which comprises multiple units in a deflated state;
FIG. **2** is a bottom view thereof;
FIG. **3** is a left side view thereof, a right side view being a mirror image;
FIG. **4** is a perspective view thereof;

FIG. **5** is a front view thereof, a rear view being a mirror image;
FIG. **6** is a top view in an inflated state thereof;
FIG. **7** is a bottom view in an inflated state thereof;
FIG. **8** is a left side view in an inflated state thereof, a right side view being a mirror image;
FIG. **9** is a front view in an inflated state thereof, a rear view being a mirror image;
FIG. **10** is a perspective view in an inflated state thereof;
FIG. **11** is a top view of a second embodiment which comprises multiple units in a deflated state;
FIG. **12** is a bottom view of FIG. **11**;
FIG. **13** is a left side view of FIG. **11**, a right side view being a mirror image;
FIG. **14** is a perspective view of FIG, **11**;
FIG. **15** is a front view of FIG. **11**, a rear view being a mirror image;
FIG. **16** is a top view of FIG. **11** in an inflated state;
FIG. **17** is a bottom view of FIG. **11** in an inflated state;
FIG. **18** is a left side view of FIG. **11** in an inflated state, a right side view being a mirror image;
FIG. **19** is a front view of FIG. **11** in an inflated state, a rear view being a mirror image;
FIG. **20** is a perspective view of FIG. **11** in an inflated state;
FIG. **21** is a top view of a third embodiment which comprises a single unit in a deflated state;
FIG. **22** is a bottom view of FIG. **21**;
FIG. **23** is a left side view of FIG. **21**, a right side view being a mirror image;
FIG. **24** is a front view of FIG. **21**, a rear view being a mirror image;
FIG. **25** is a perspective view of FIG. **21**
FIG. **26** is a top view of FIG. **21** in an inflated state;
FIG. **27** is a bottom view of FIG. **21** in an inflated state;
FIG. **28** is a left side view of FIG. **21** in an inflated state, a right side view being a mirror image;
FIG. **29** is a front view of FIG. **21** in an inflated state, a rear view being a mirror image; and,
FIG. **30** is a perspective view of FIG. **21** in an inflated state.
The claimed design is shown in solid lines in the drawings. The portions of the drawings shown in broken lines form no part of the claimed design.
The break lines that separate the parts of the product merchandiser and the portion within the break lines represent indeterminate length and form no part of the claimed design.

1 Claim, 30 Drawing Sheets

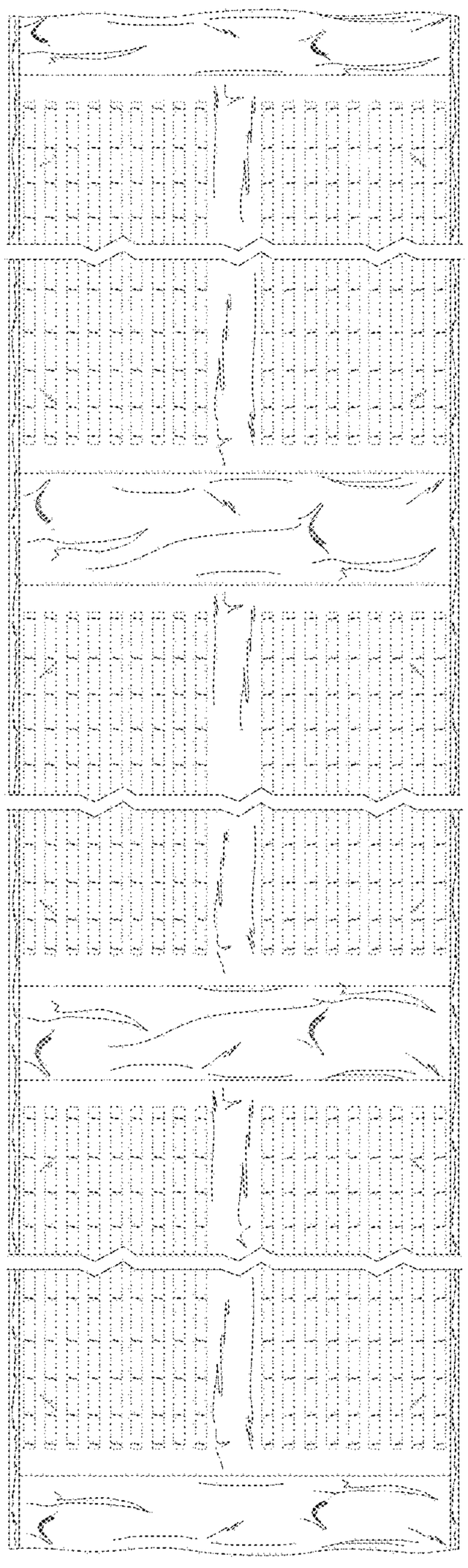


FIG. 1

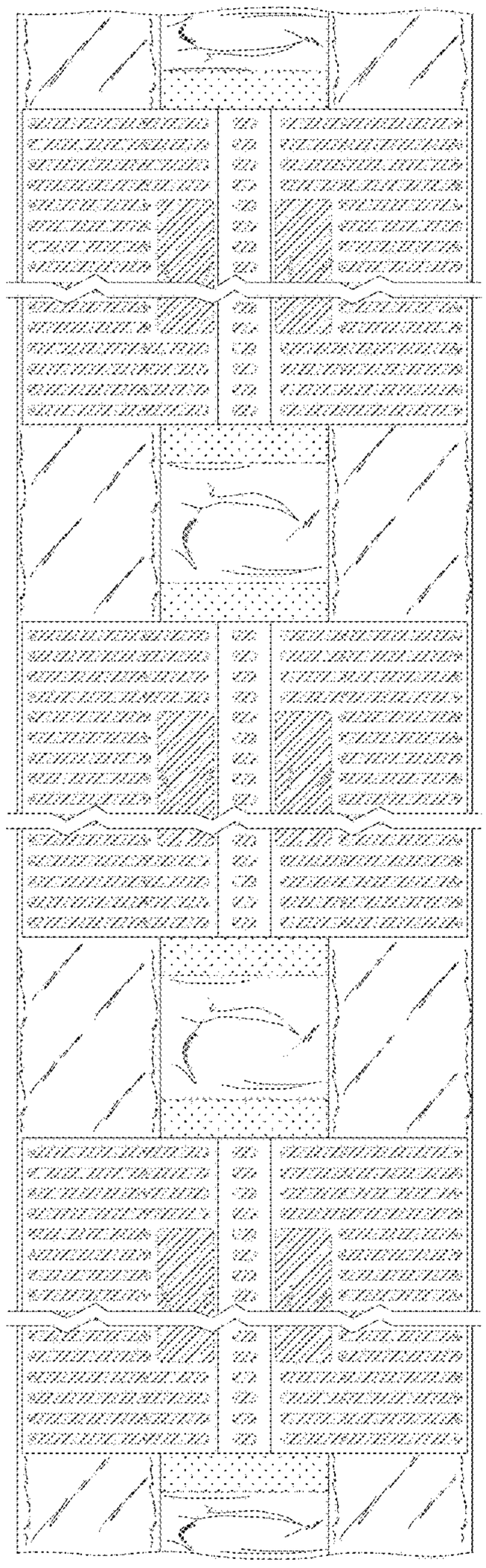


FIG. 2

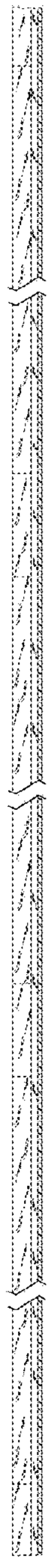


FIG. 3

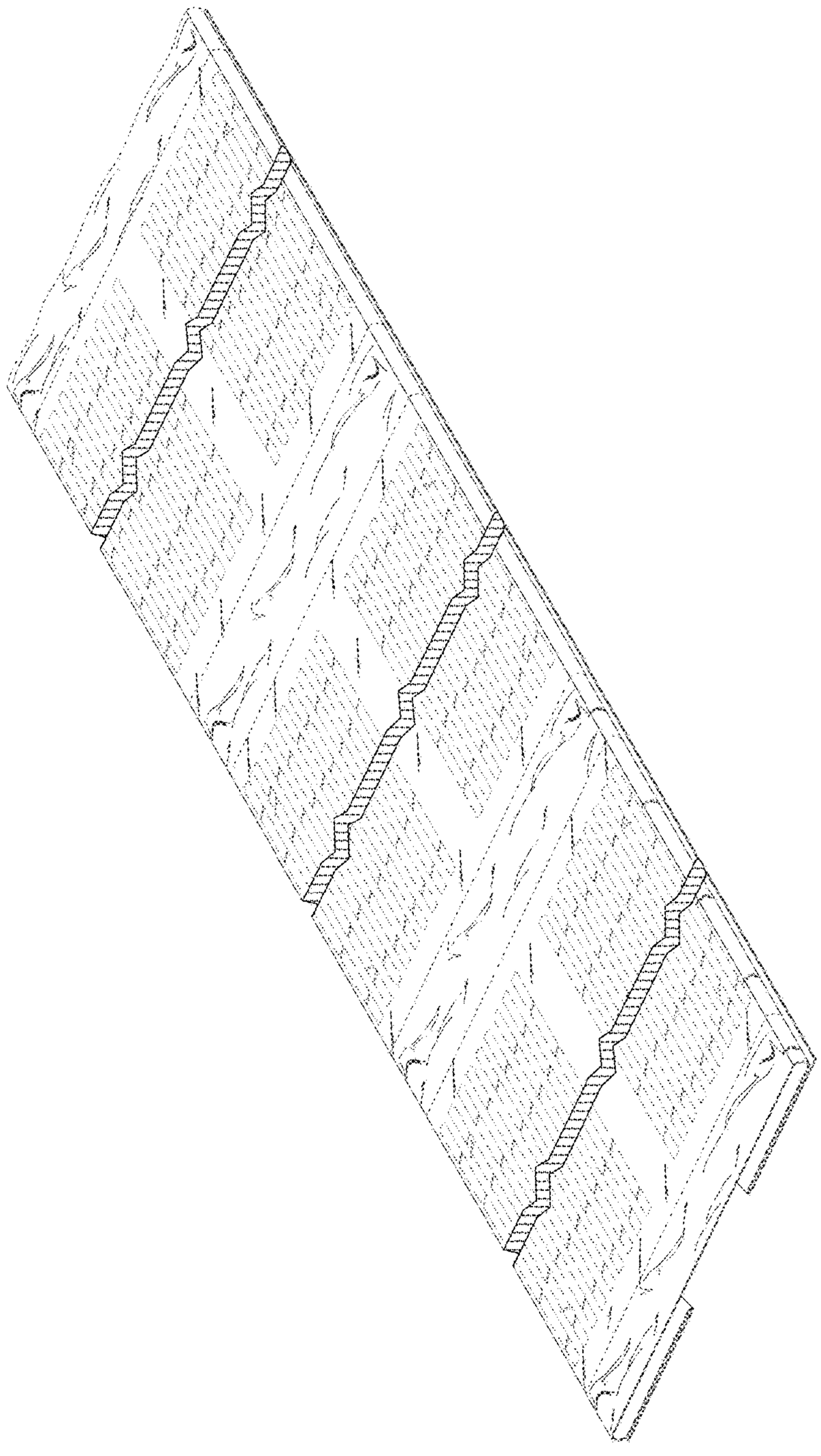


FIG. 4

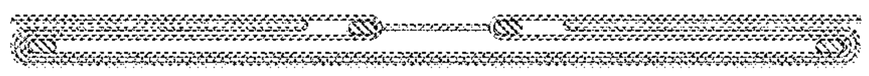


FIG. 5

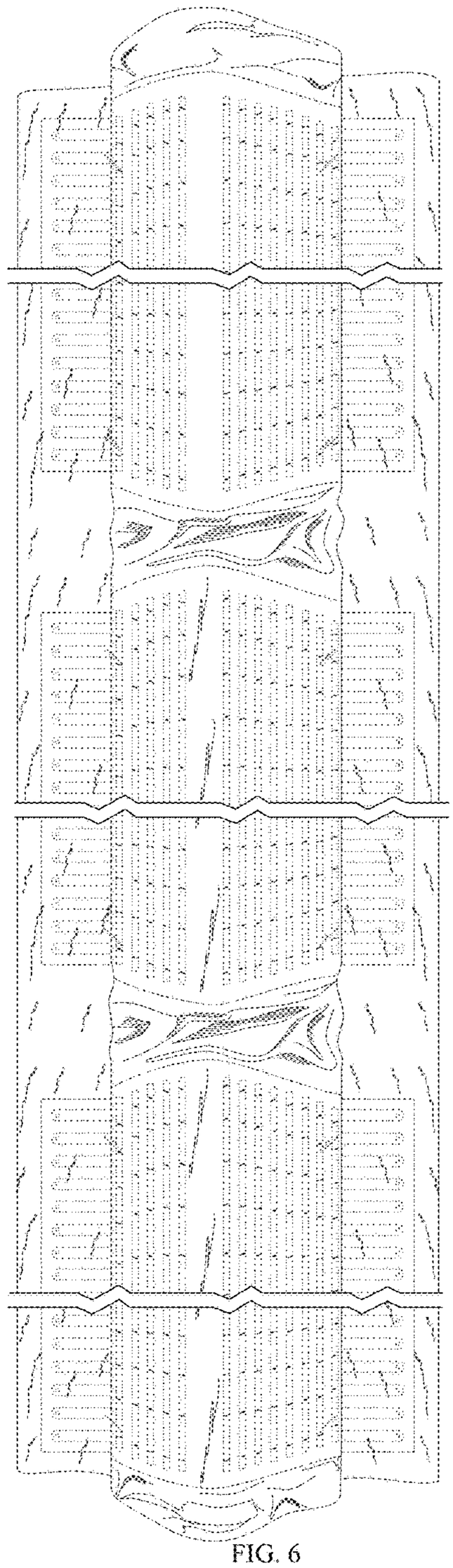


FIG. 6

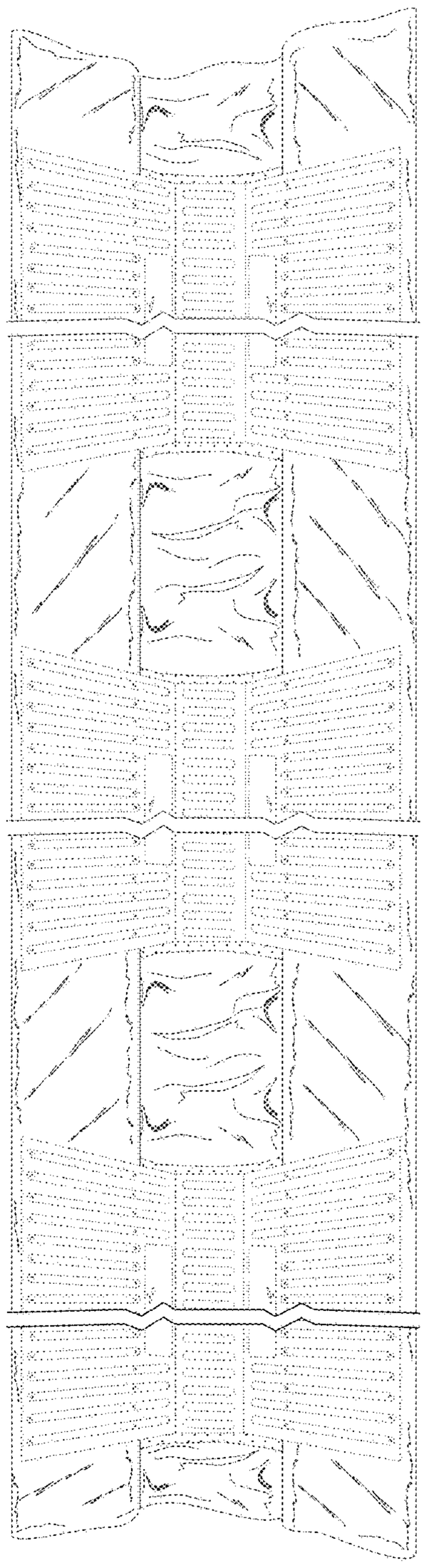


FIG. 7

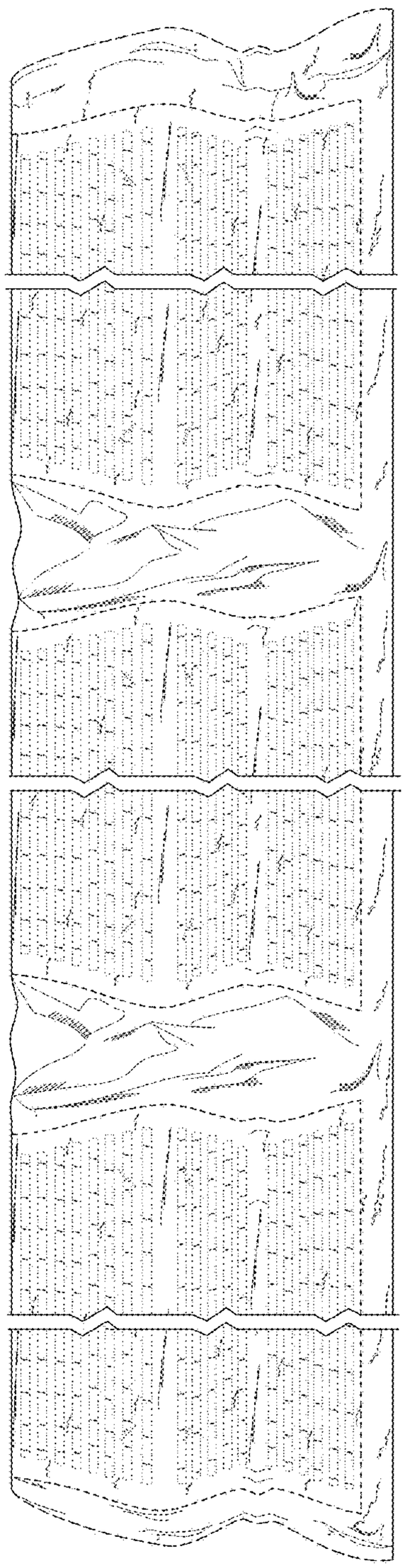


FIG. 8

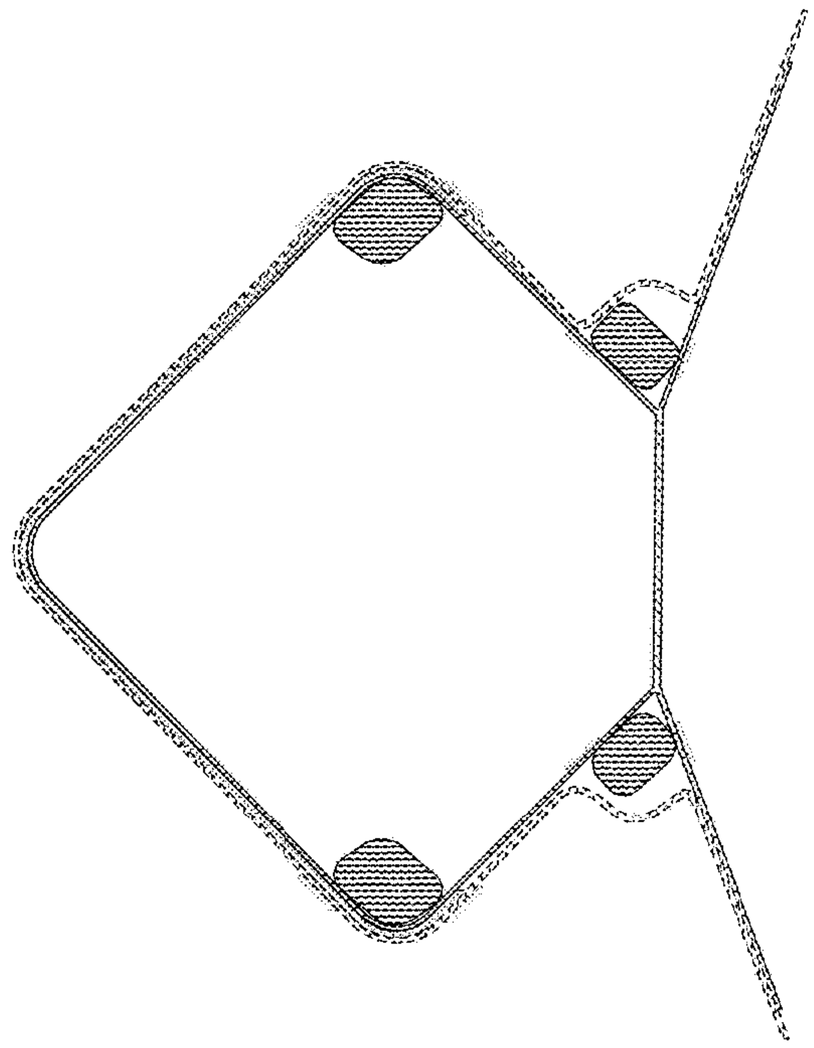


FIG. 9

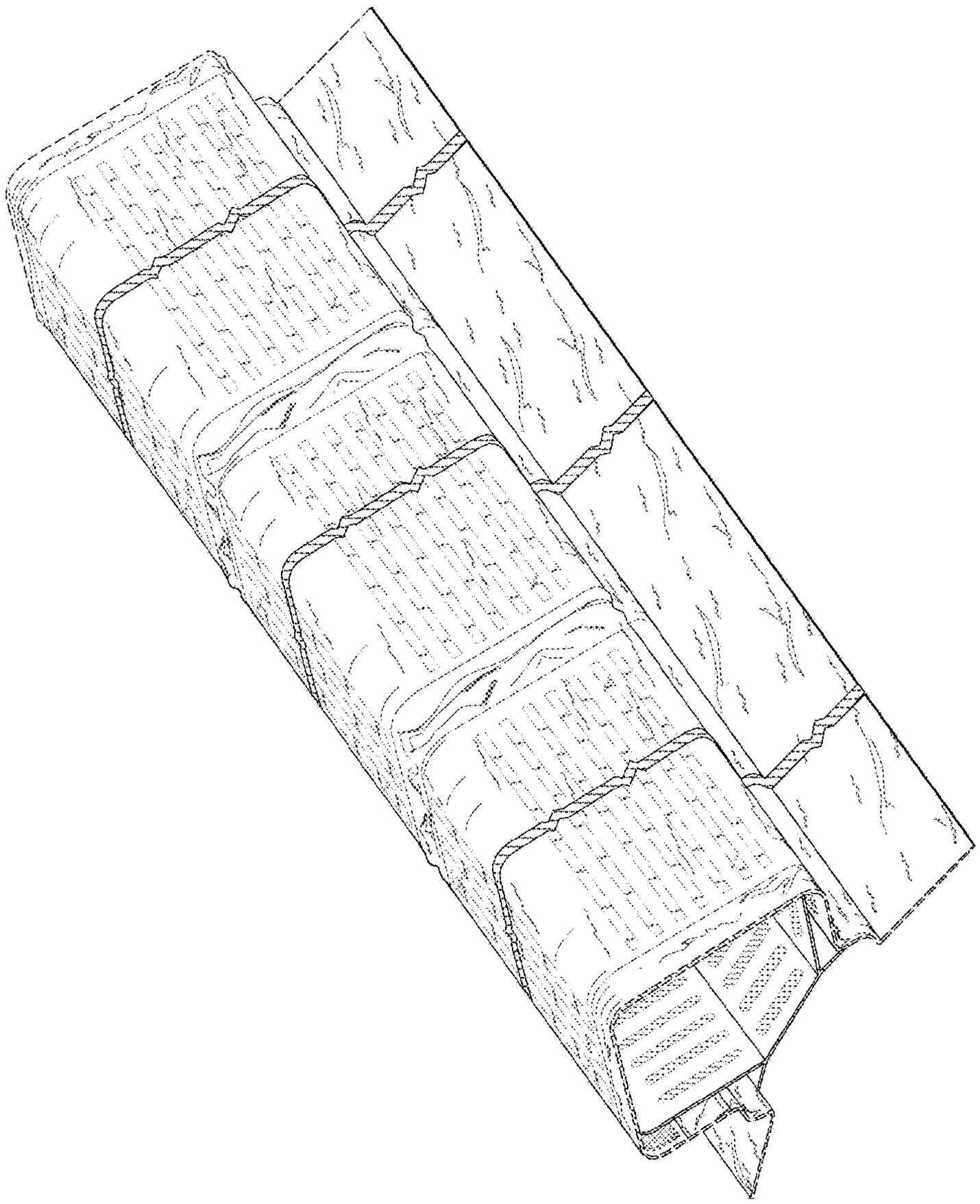


FIG. 10

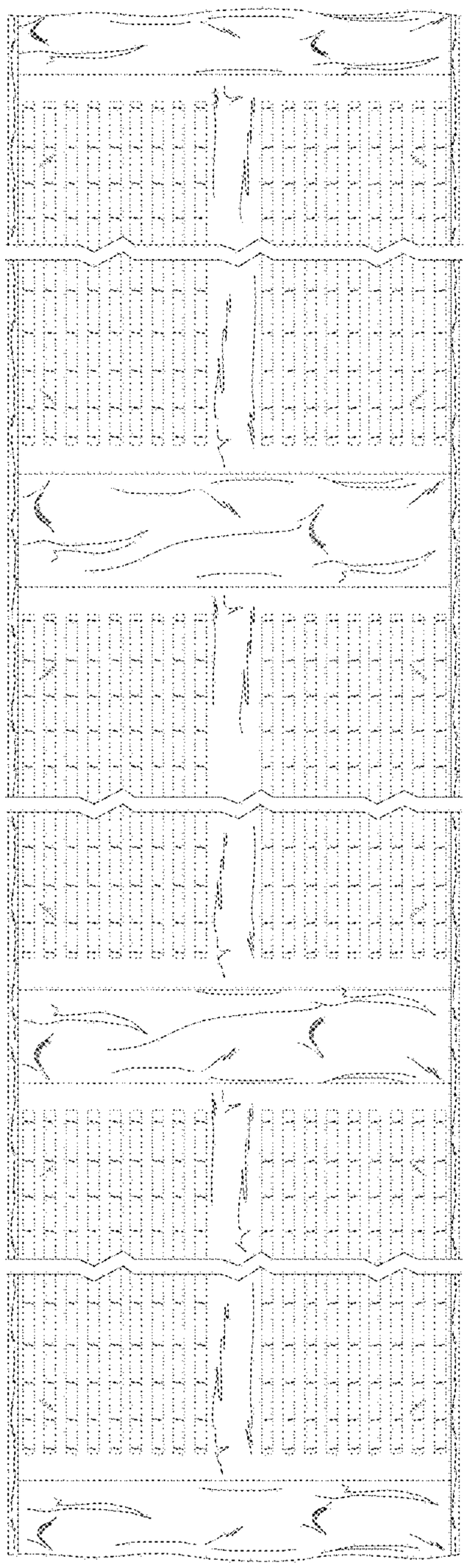


FIG. 11

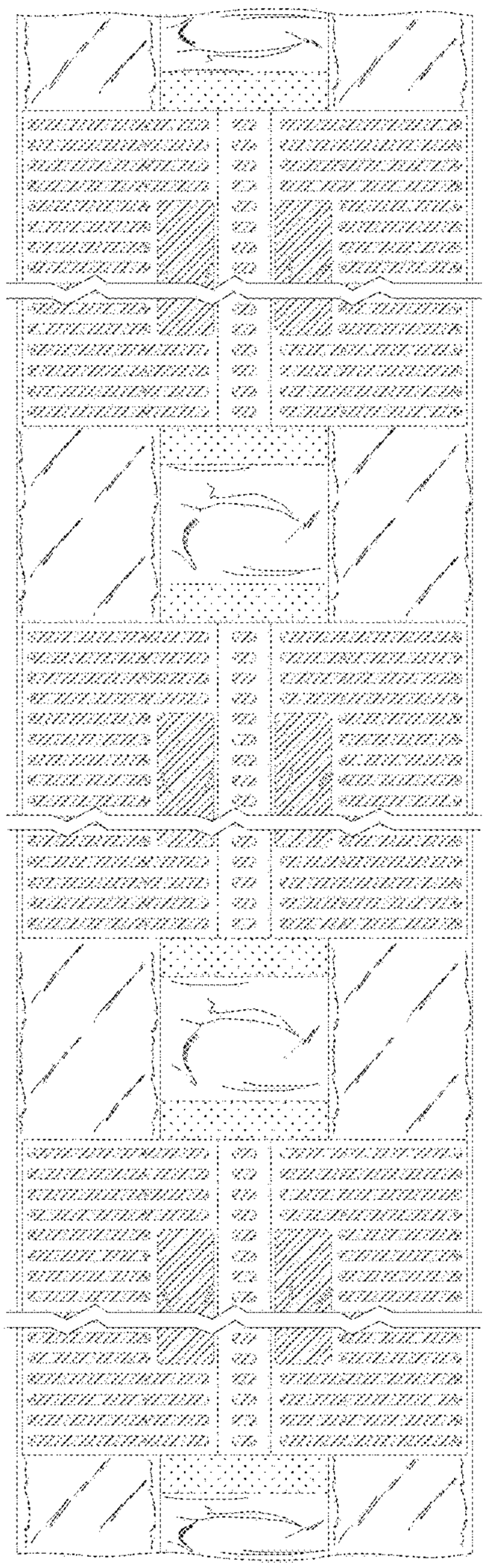


FIG. 12

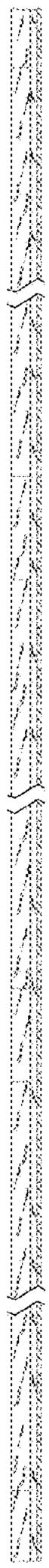


FIG. 13

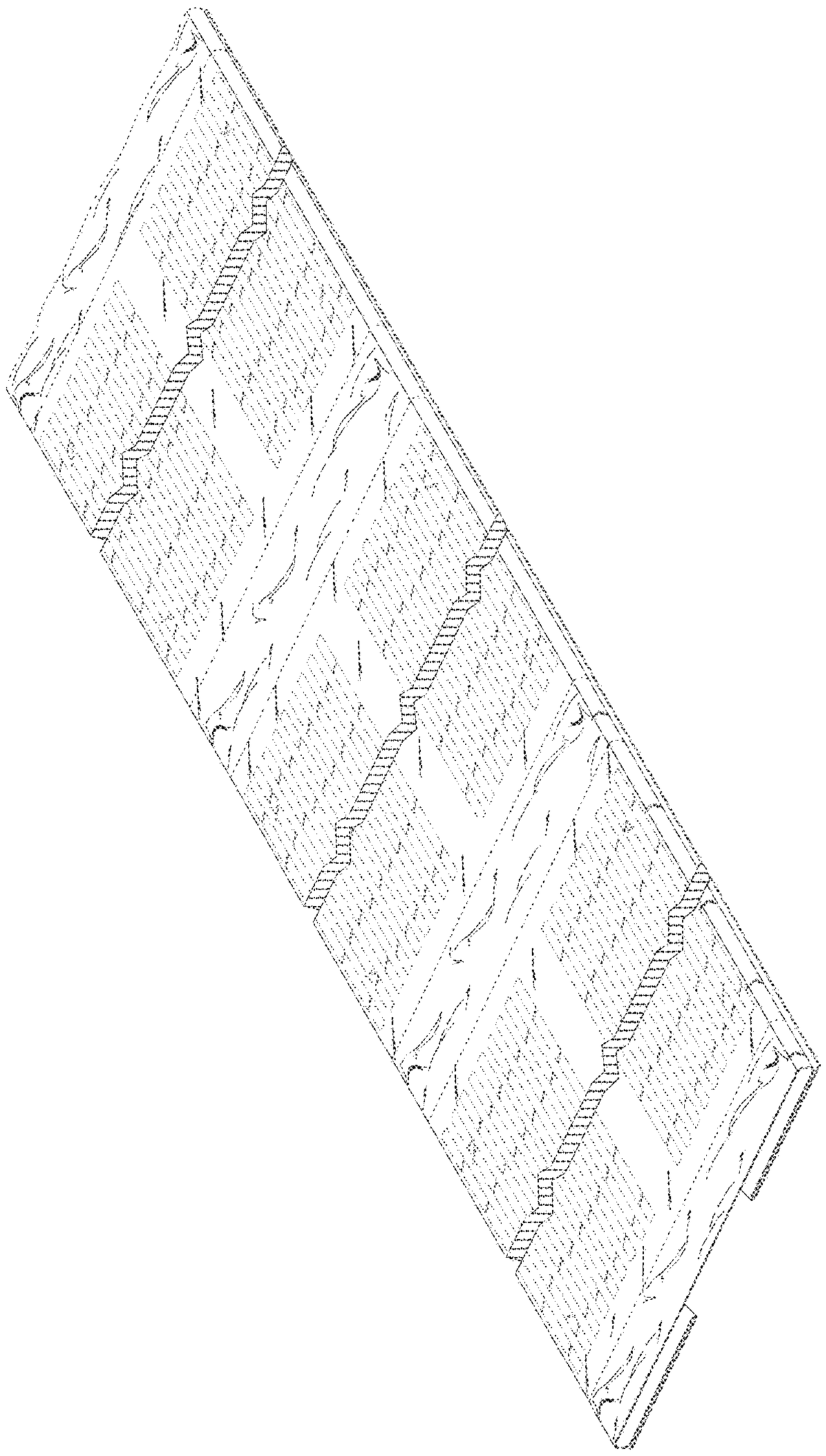


FIG. 14

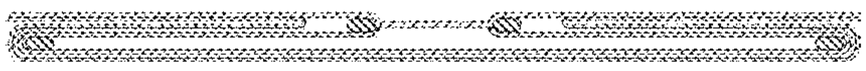


FIG. 15

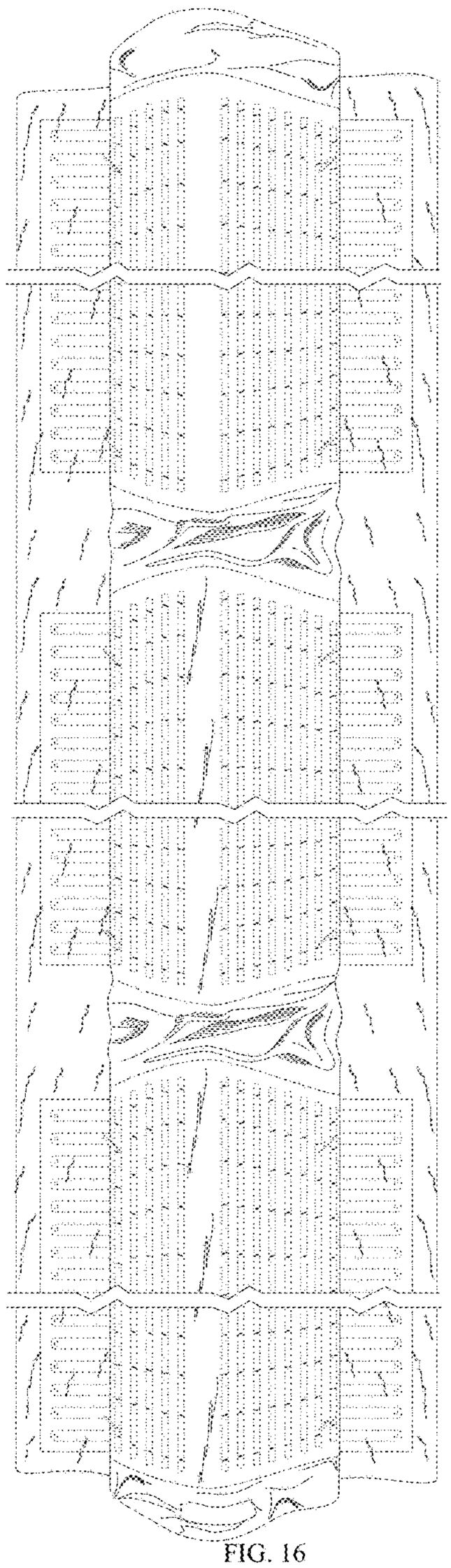


FIG. 16

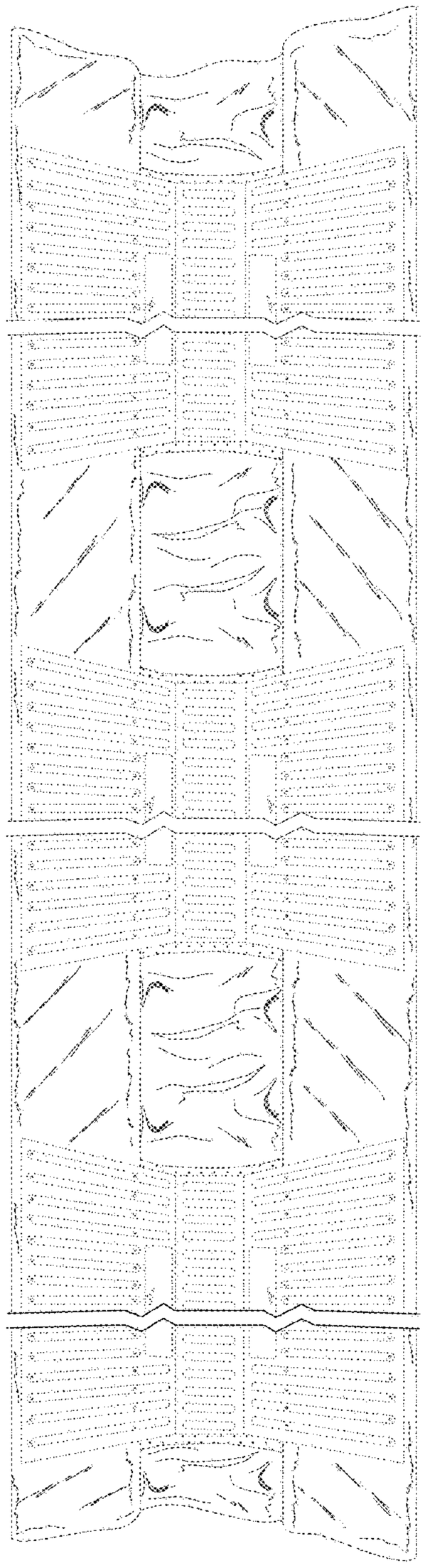


FIG. 17

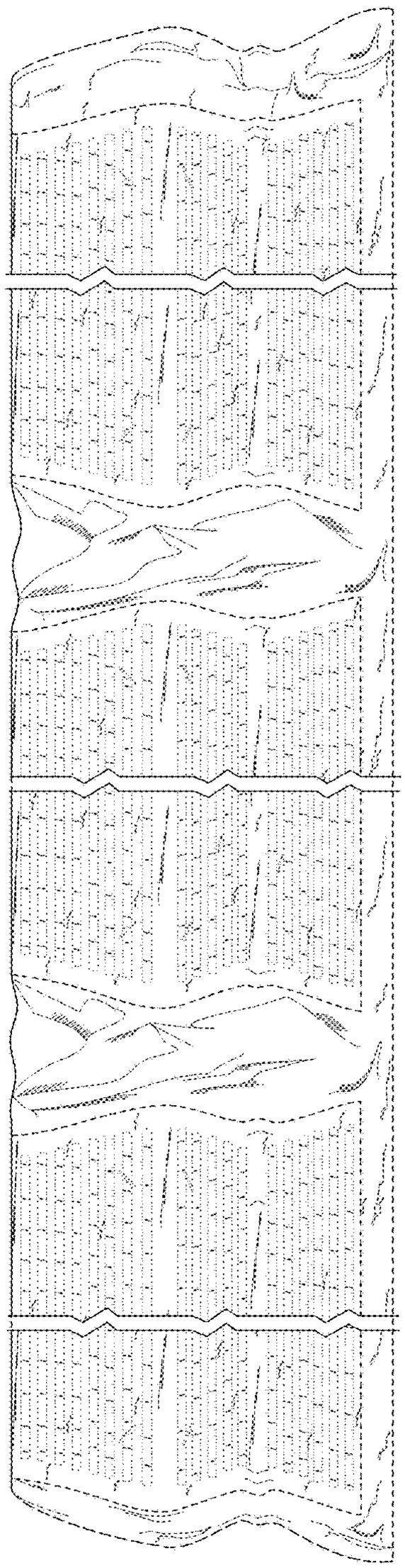


FIG. 18

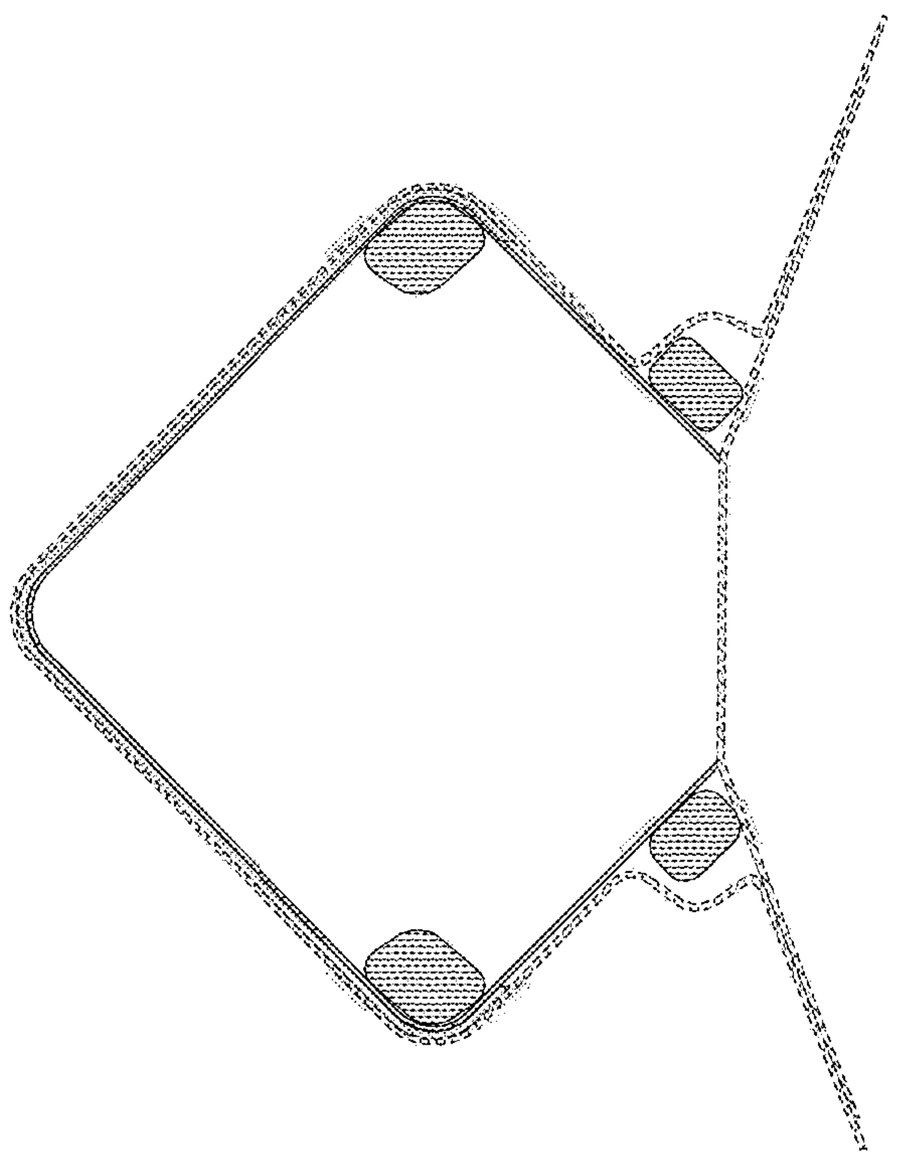


FIG. 19

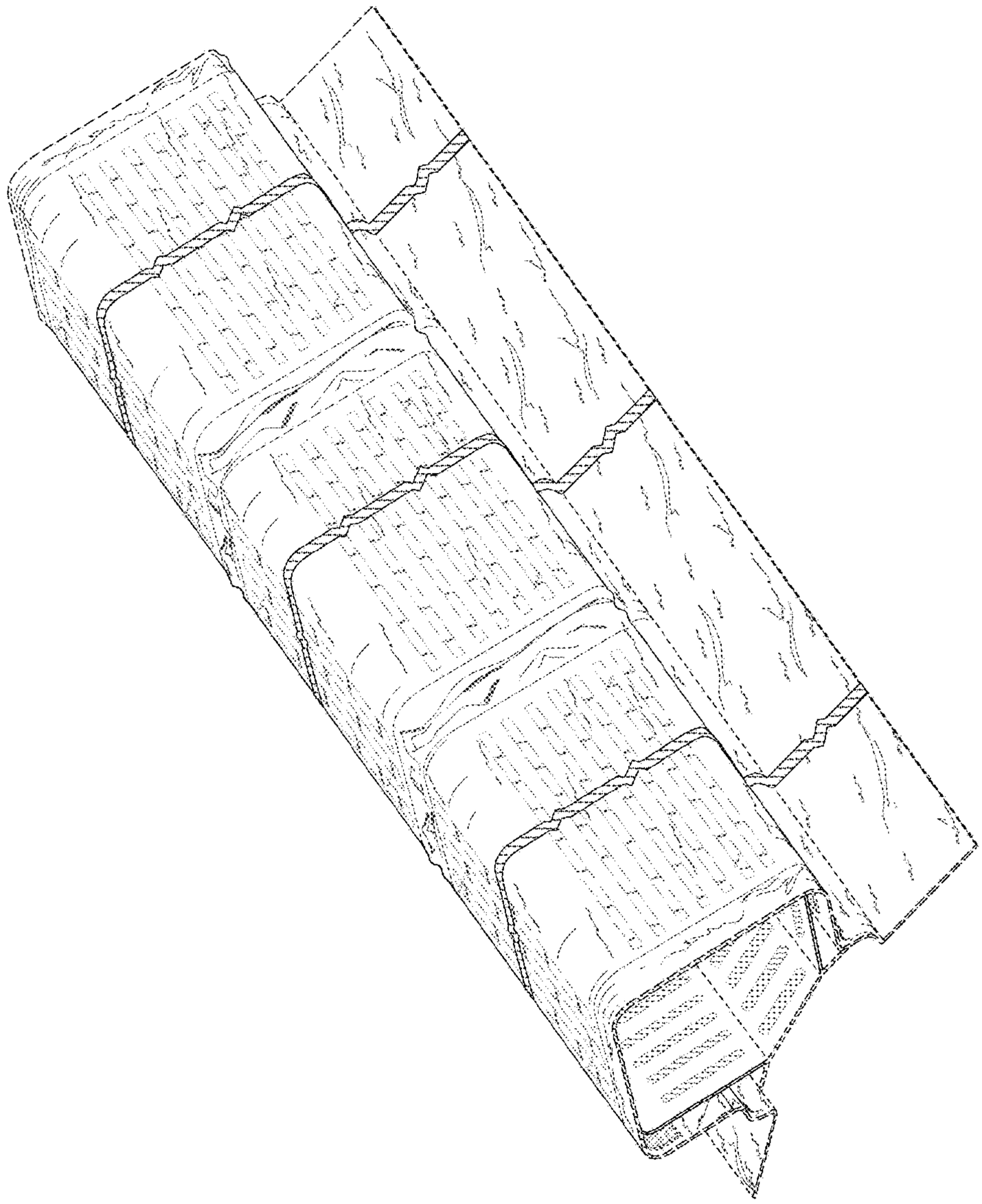


FIG. 20

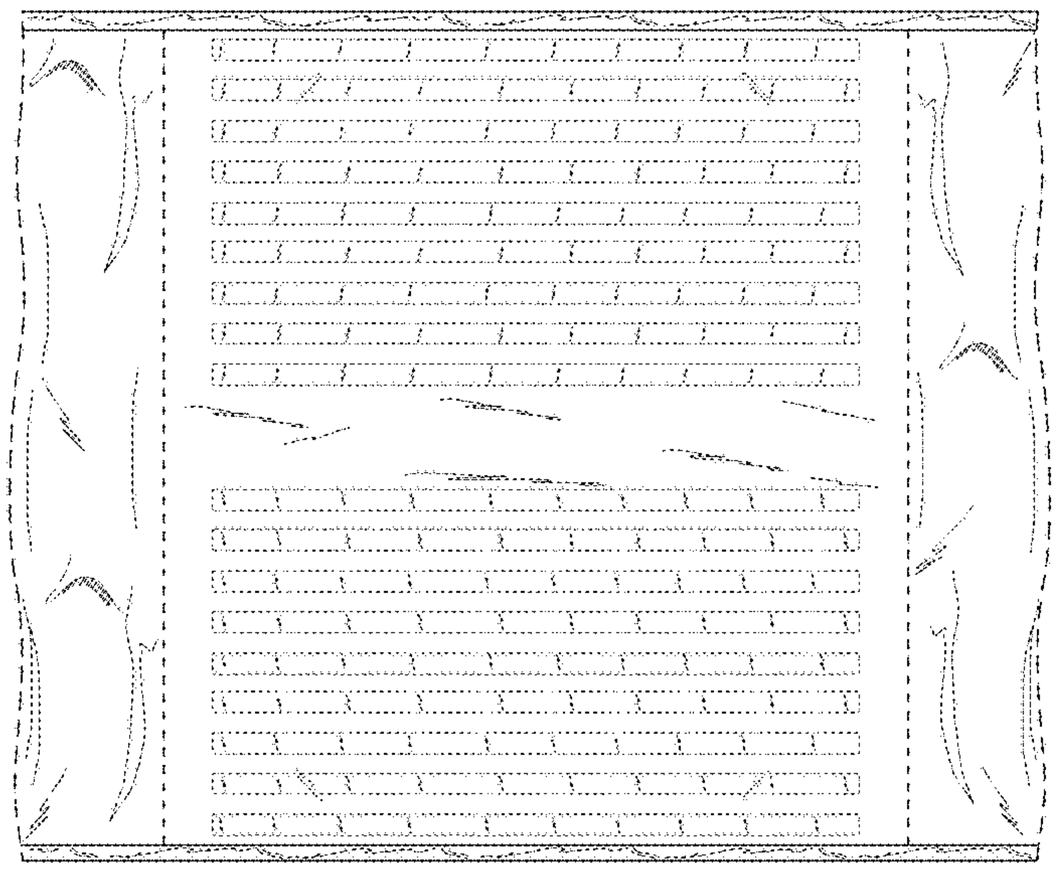


FIG. 21

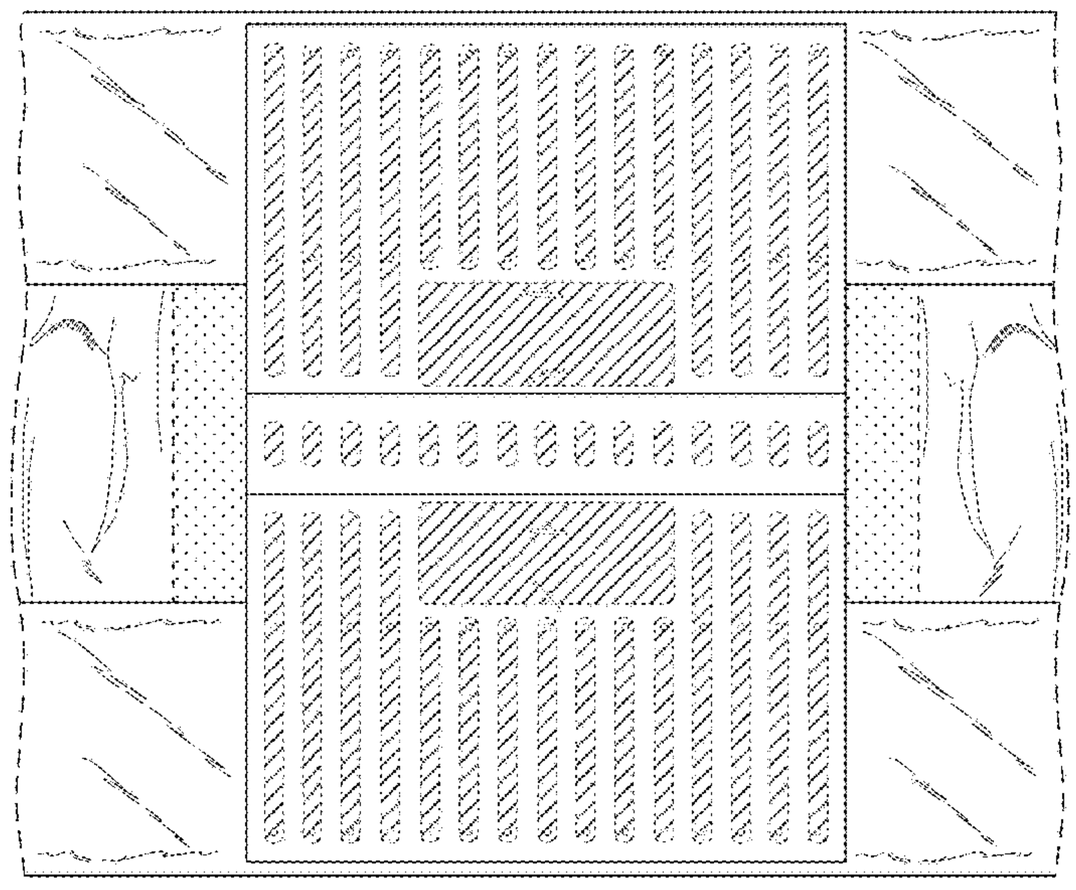


FIG. 22

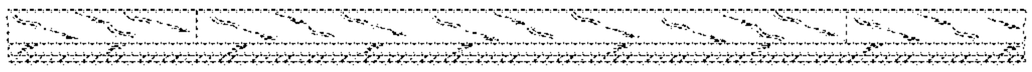


FIG. 23

FIG. 24

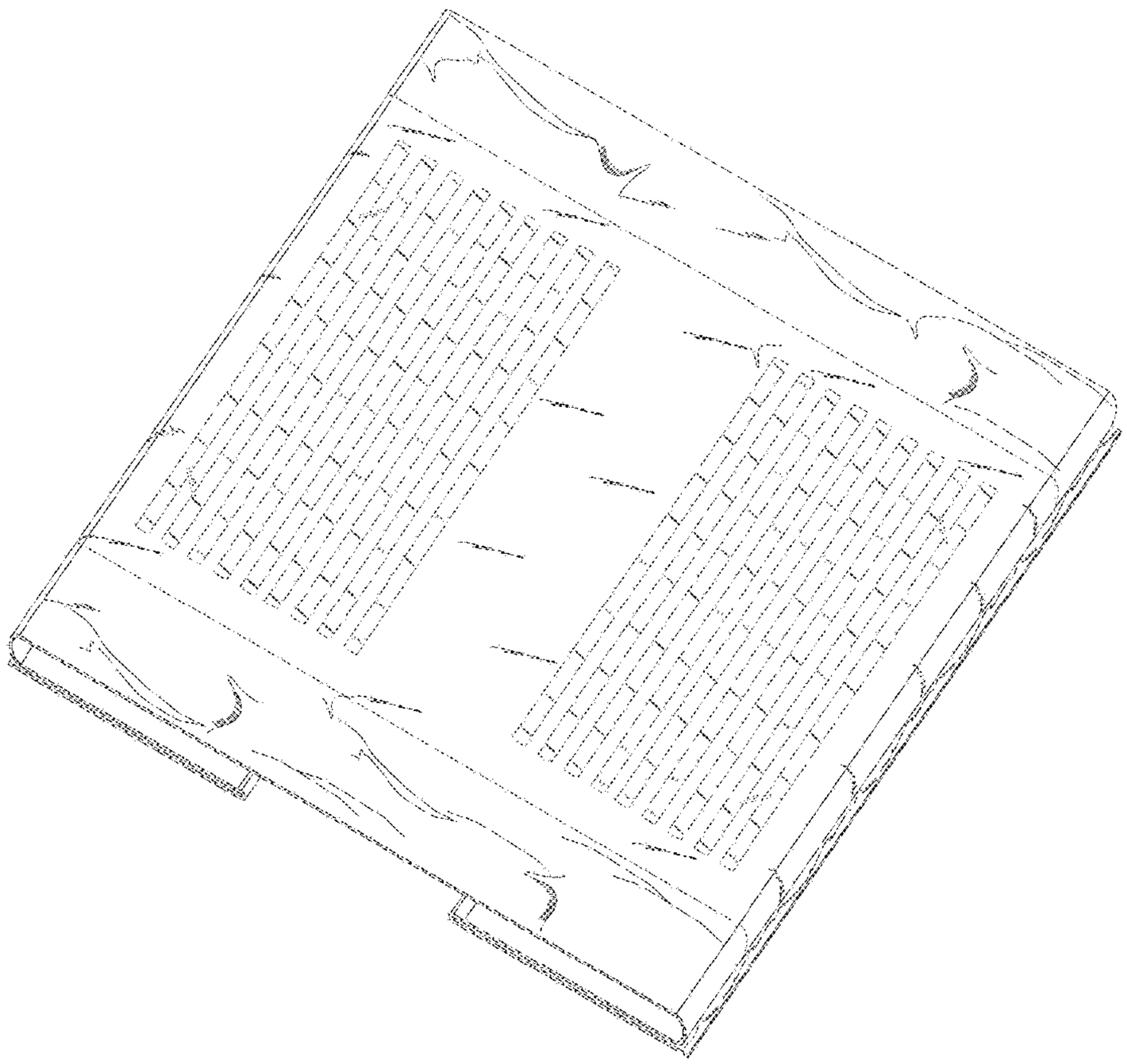


FIG. 25

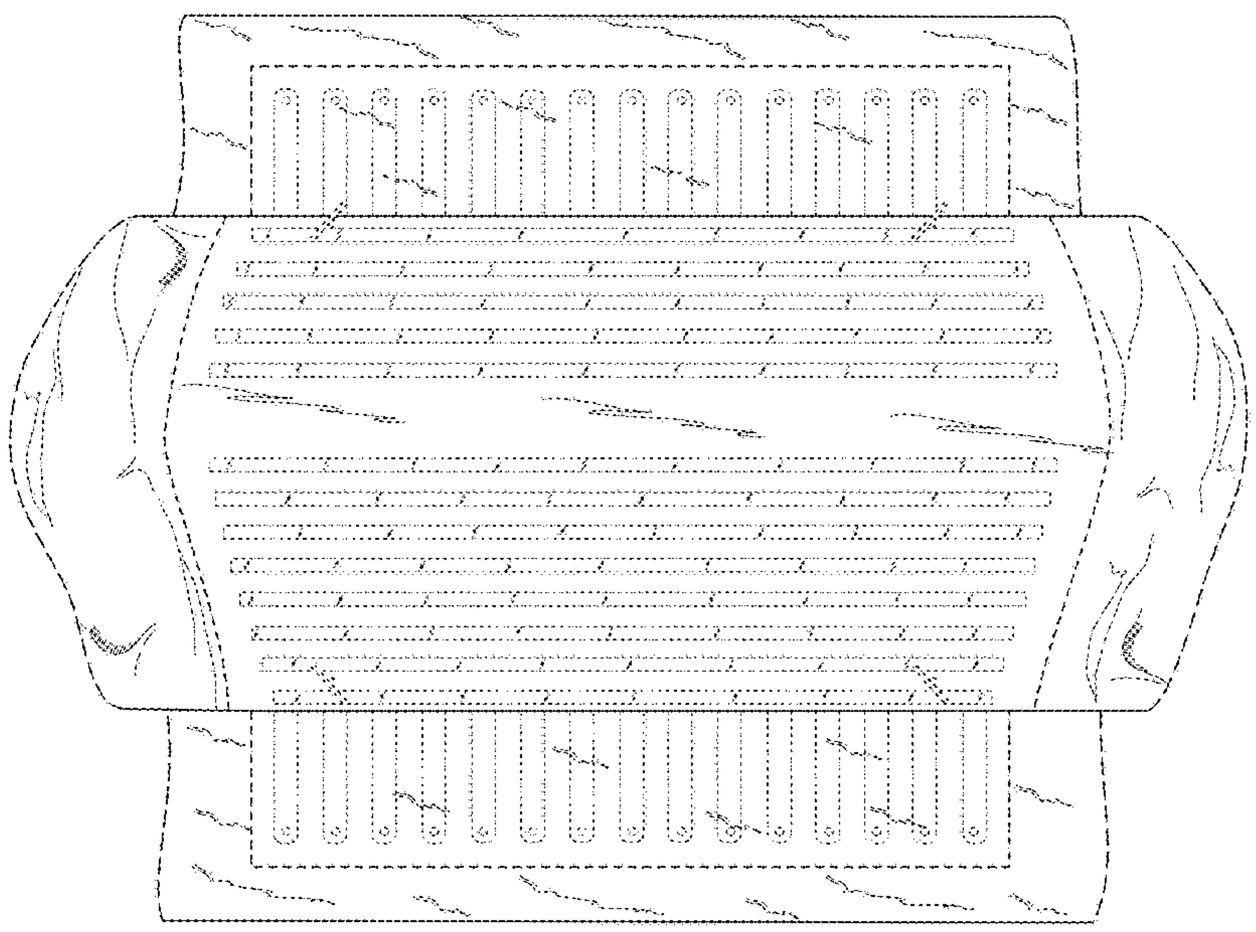


FIG. 26

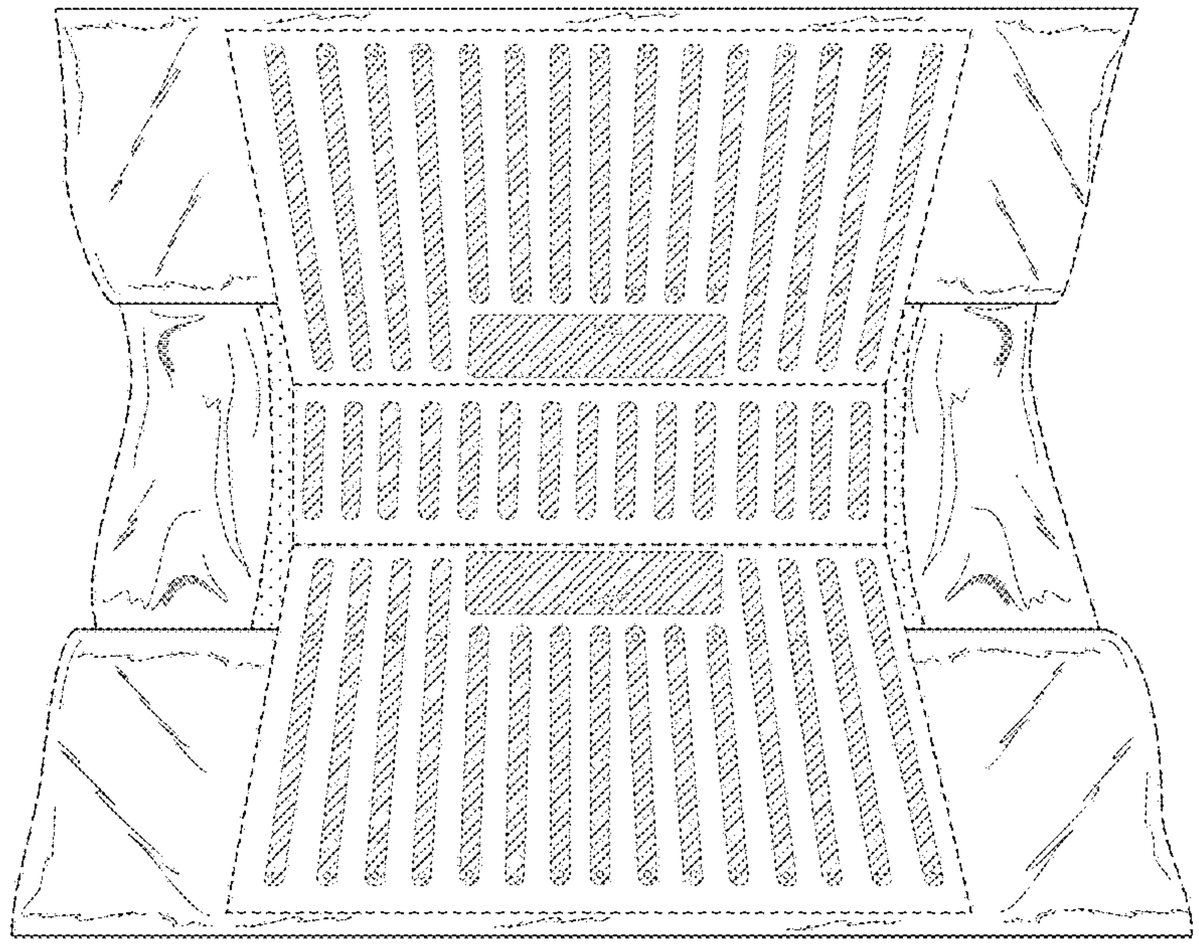


FIG. 27

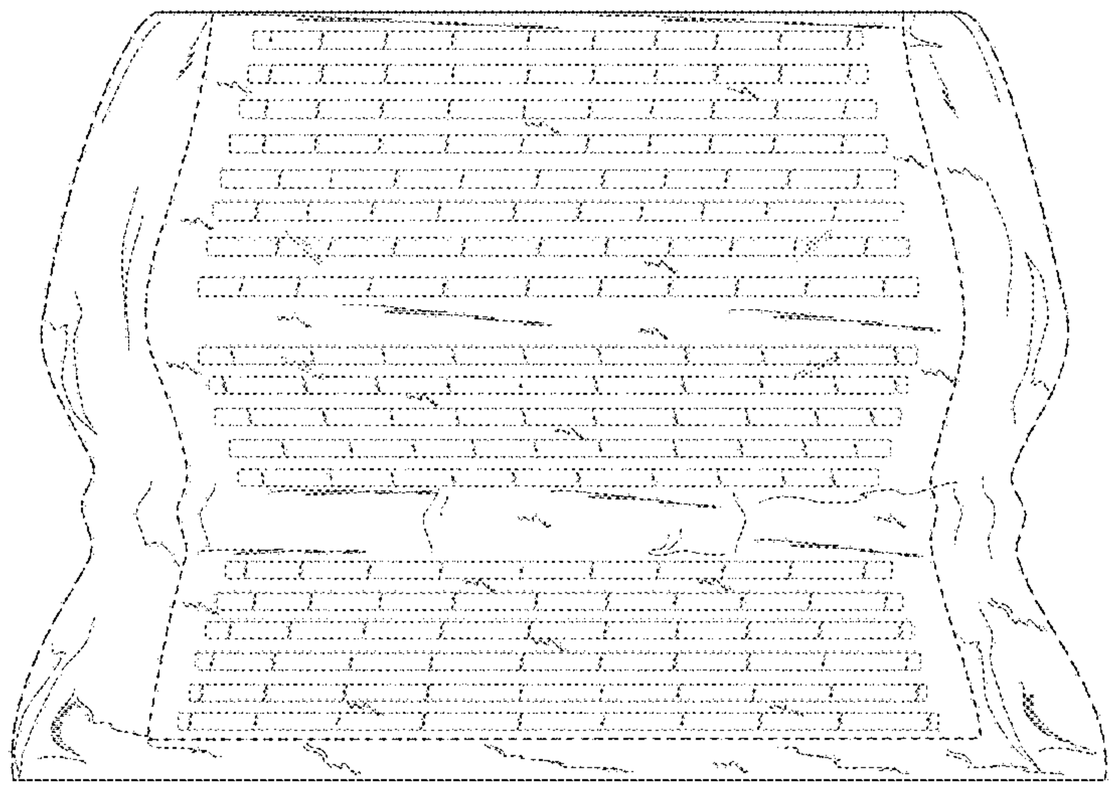


FIG. 28

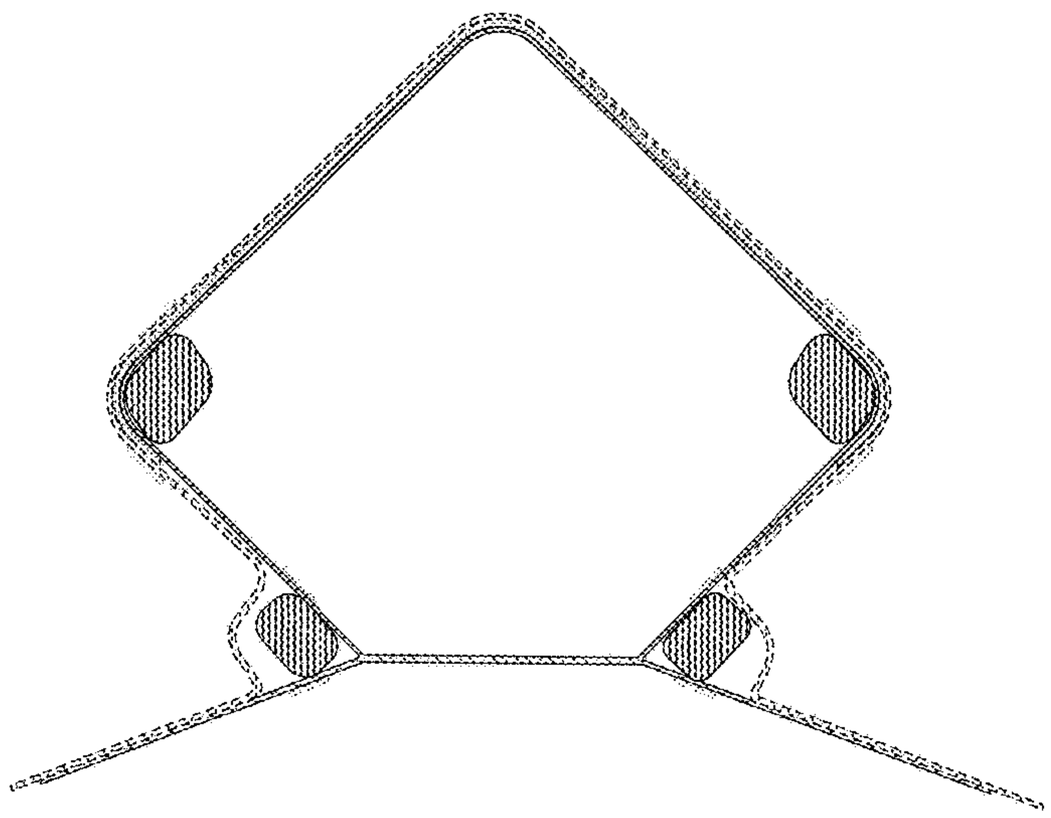


FIG. 29

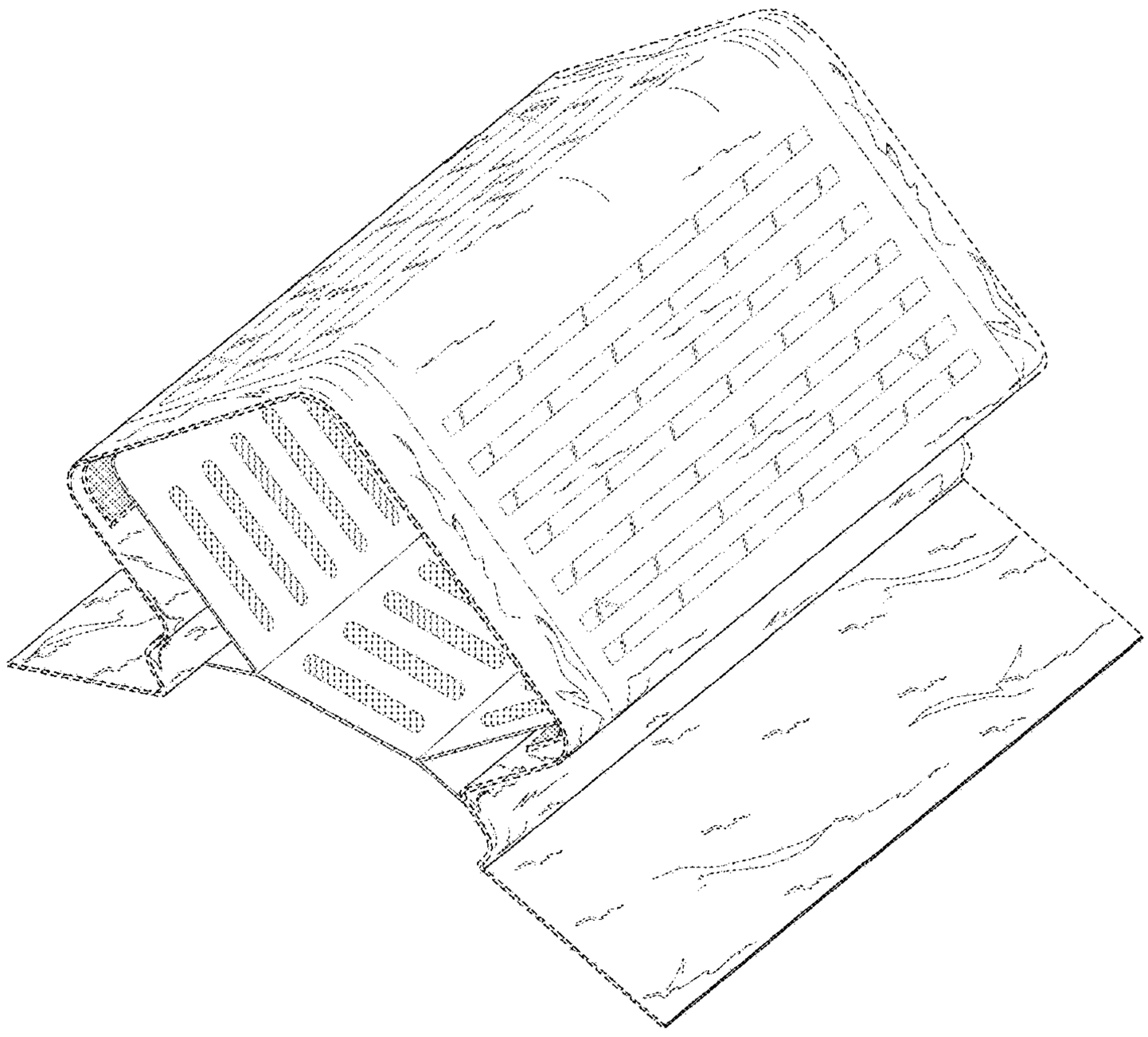


FIG. 30