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

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(54) **TRIANGULAR SEMICONDUCTOR DIE**

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(**) Term: **14 Years**

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Related U.S. Application Data

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(51) **LOC (10) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/182**

(58) **Field of Classification Search**
USPC D13/110, 182; 257/668, 678, 690;
361/679.01, 713, 728, 736, 760, 761,
361/775, 820; 324/71.5, 252; 174/250, 253;
438/64, 65, 66
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,357,544	A *	12/1967	Gingher	206/300
3,390,502	A *	7/1968	Carroll	52/424
D233,898	S *	12/1974	Warren	D21/373
D330,325	S *	10/1992	Kocon	D6/552
D356,033	S *	3/1995	Horvat et al.	D9/430
D356,705	S *	3/1995	Aston	D6/502
D411,261	S *	6/1999	Movsesian	D21/484
D421,806	S *	3/2000	Graf et al.	D25/113
D438,858	S *	3/2001	del Castillo	D14/188

D441,730	S *	5/2001	Oba	D13/182
D467,934	S *	12/2002	Smyth et al.	D14/478
D473,199	S *	4/2003	Sako et al.	D13/182
6,621,211	B1	9/2003	Srivastava et al.	
D480,371	S *	10/2003	Sako et al.	D13/182
6,853,010	B2	2/2005	Slater, Jr. et al.	
D516,670	S *	3/2006	Aselton	D23/214
7,083,302	B2	8/2006	Chen et al.	
7,113,658	B2	9/2006	Ide et al.	

(Continued)

OTHER PUBLICATIONS

International Search Report of PCT Application No. PCT/US2011/048499, dated Feb. 14, 2012, 2 pages total.

(Continued)

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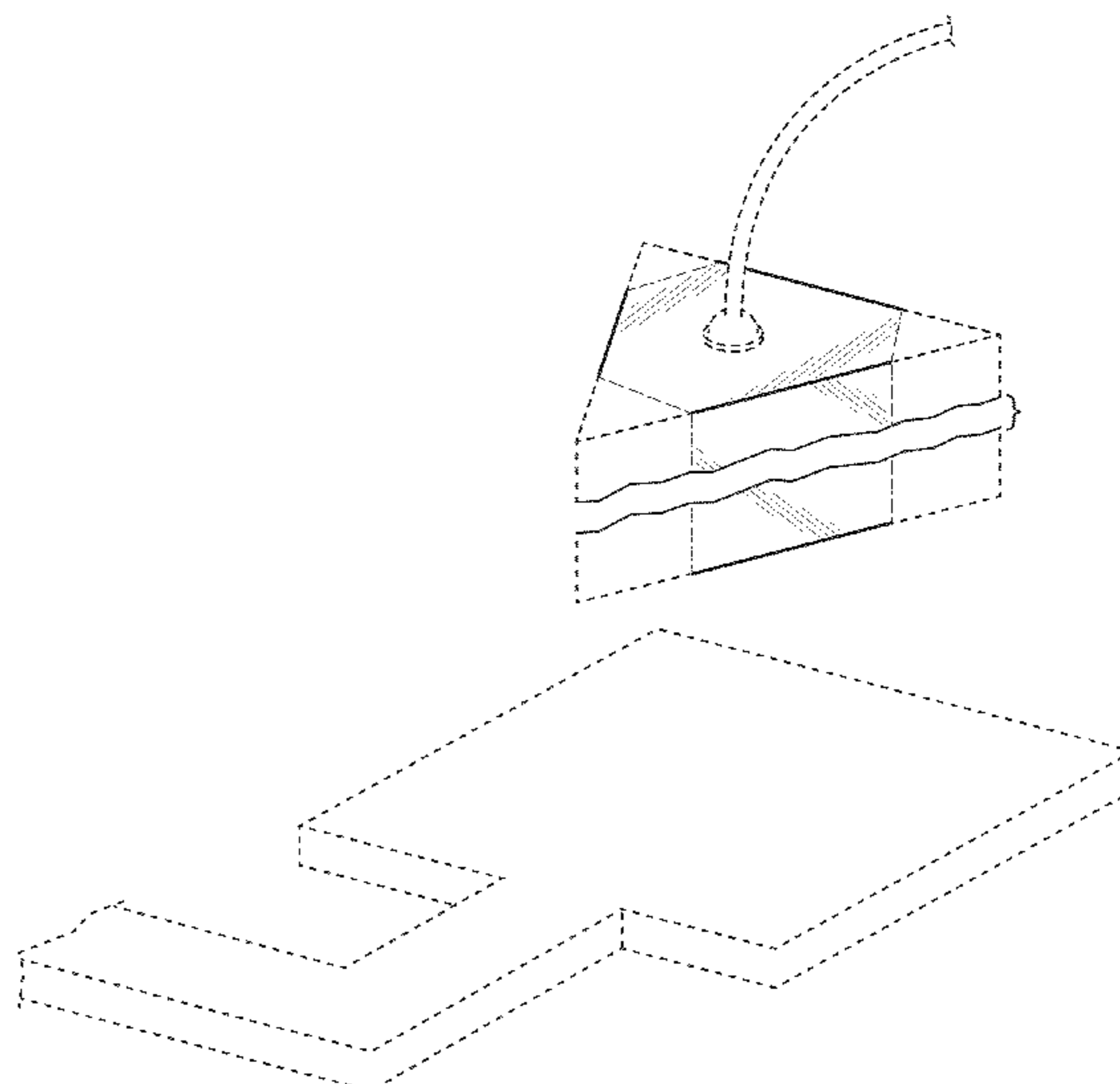
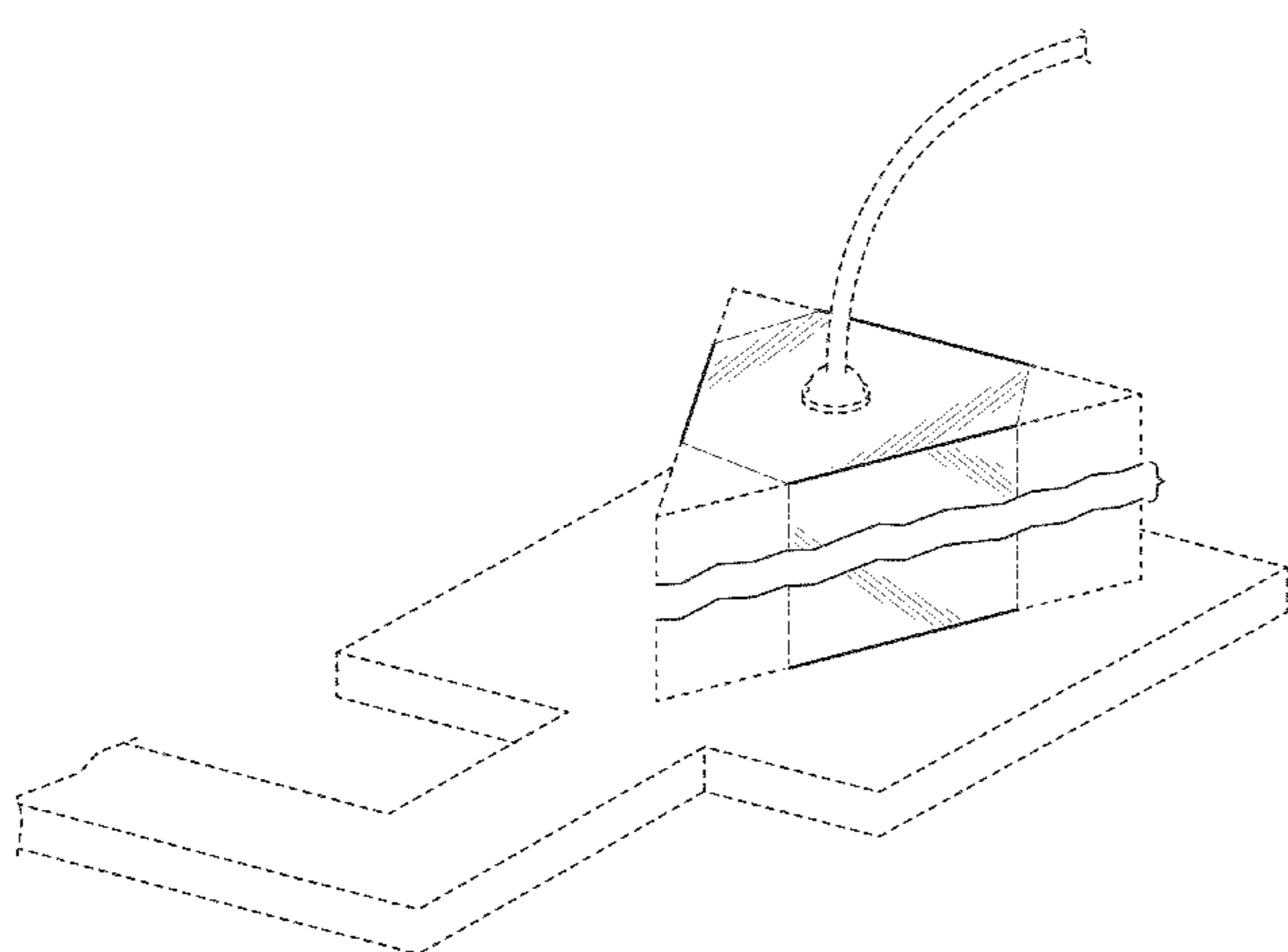
(57) **CLAIM**

The ornamental design for triangular semiconductor die, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a triangular semiconductor die showing our new design;
FIG. 2 is an exploded perspective view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is a side elevational view thereof;
FIG. 6 is another side elevational view thereof;
FIG. 7 is another side elevational view thereof; and,
FIG. 8 is another side elevational view thereof.
The broken lines in the figures represent unclaimed subject matter and form no part of the claimed design.
The triangular semiconductor die is shown broken away in FIGS. 1, 2, and 5-8 to indicate that no particular length is claimed.

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D537,048 S * 2/2007 Mitsui D13/182
 D543,160 S * 5/2007 Mitsui et al. D13/182
 7,253,446 B2 8/2007 Sakuma et al.
 7,285,799 B2 10/2007 Kim et al.
 D568,839 S * 5/2008 Mitsui et al. D13/182
 7,737,457 B2 6/2010 Kolodin et al.
 7,791,093 B2 9/2010 Basin et al.
 7,906,793 B2 3/2011 Negley
 D635,622 S * 4/2011 Martin et al. D21/681
 8,203,161 B2 6/2012 Simonian et al.
 8,269,245 B1 9/2012 Shum
 D688,736 S * 8/2013 Lilly D17/20
 2001/0022495 A1 9/2001 Salam
 2004/0195598 A1 10/2004 Tysoe et al.
 2004/0227149 A1 11/2004 Ibbetson et al.
 2005/0084218 A1 4/2005 Ide et al.
 2006/0068154 A1 3/2006 Parce et al.
 2006/0097385 A1 5/2006 Negley
 2006/0208262 A1 9/2006 Sakuma et al.
 2007/0018184 A1 1/2007 Beeson et al.
 2007/0181895 A1 8/2007 Nagai
 2008/0261341 A1 10/2008 Zimmerman et al.
 2009/0173958 A1 7/2009 Chakraborty et al.
 2011/0038154 A1 2/2011 Chakravarty et al.
 2011/0069490 A1 3/2011 Liu
 2011/0103064 A1 5/2011 Coe-Sullivan et al.

2011/0108865 A1 5/2011 Aldaz et al.
 2011/0291548 A1 12/2011 Nguyen The et al.
 2012/0043552 A1 2/2012 David et al.
 2012/0235201 A1 9/2012 Shum

OTHER PUBLICATIONS

Sato et al., 'Optical Properties Of Yellow Light-Emitting Diodes Grown On Semipolar (1122) Bulk GaN Substrate,' Applied Physics Letters, vol. 92, No. 22, 2008, pp. 221110-1-221110-3.
 USPTO Office Action for U.S. Appl. No. 12/491,176 dated Mar. 1, 2012.
 USPTO Office Action for U.S. Appl. No. 12/491,176 dated Jul. 19, 2012.
 USPTO Office Action for U.S. Appl. No. 12/914,789 dated Oct. 12, 2011.
 USPTO Office Action for U.S. Appl. No. 12/914,789 dated Feb. 24, 2012.
 USPTO Notice of Allowance for U.S. Appl. No. 12/914,789 dated May 17, 2012.
 USPTO Office Action for U.S. Appl. No. 13/211,145 dated Oct. 17, 2012.
 USPTO Office Action for U.S. Appl. No. 13/482,956 dated Aug. 17, 2012.
 USPTO Office Action for U.S. Appl. No. 13/482,956 dated Feb. 14, 2013.

* cited by examiner

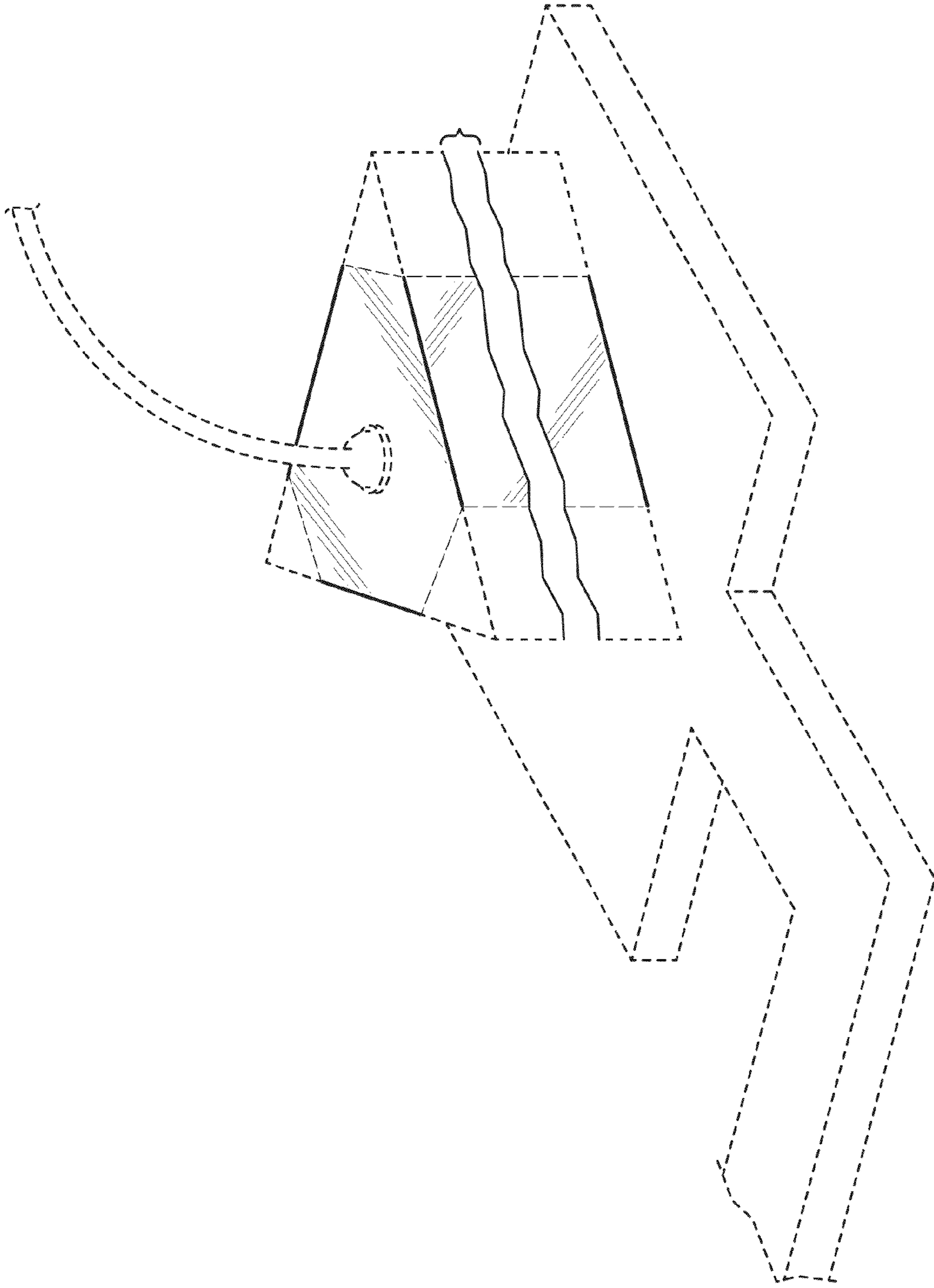
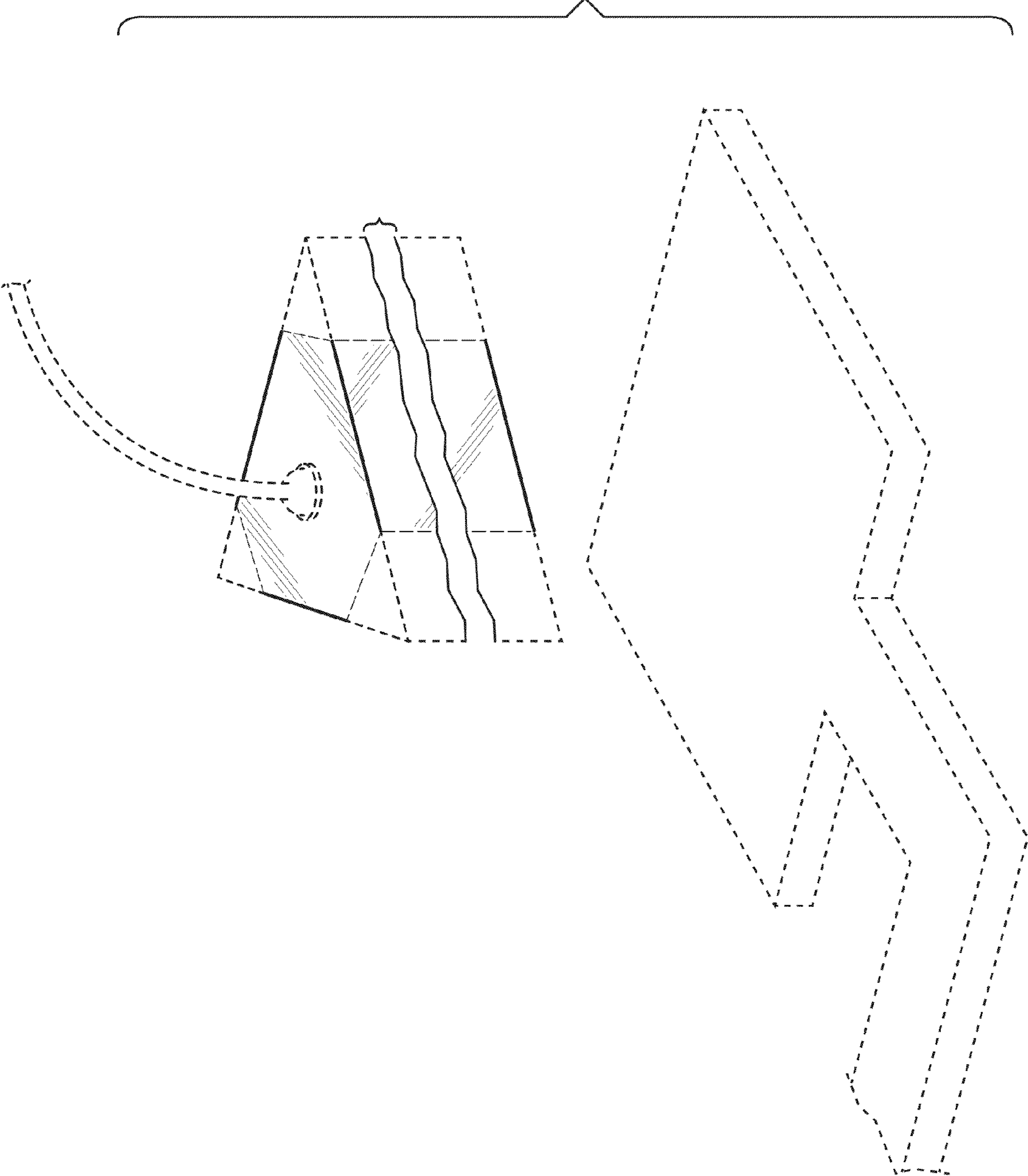


FIG. 1

FIG. 2



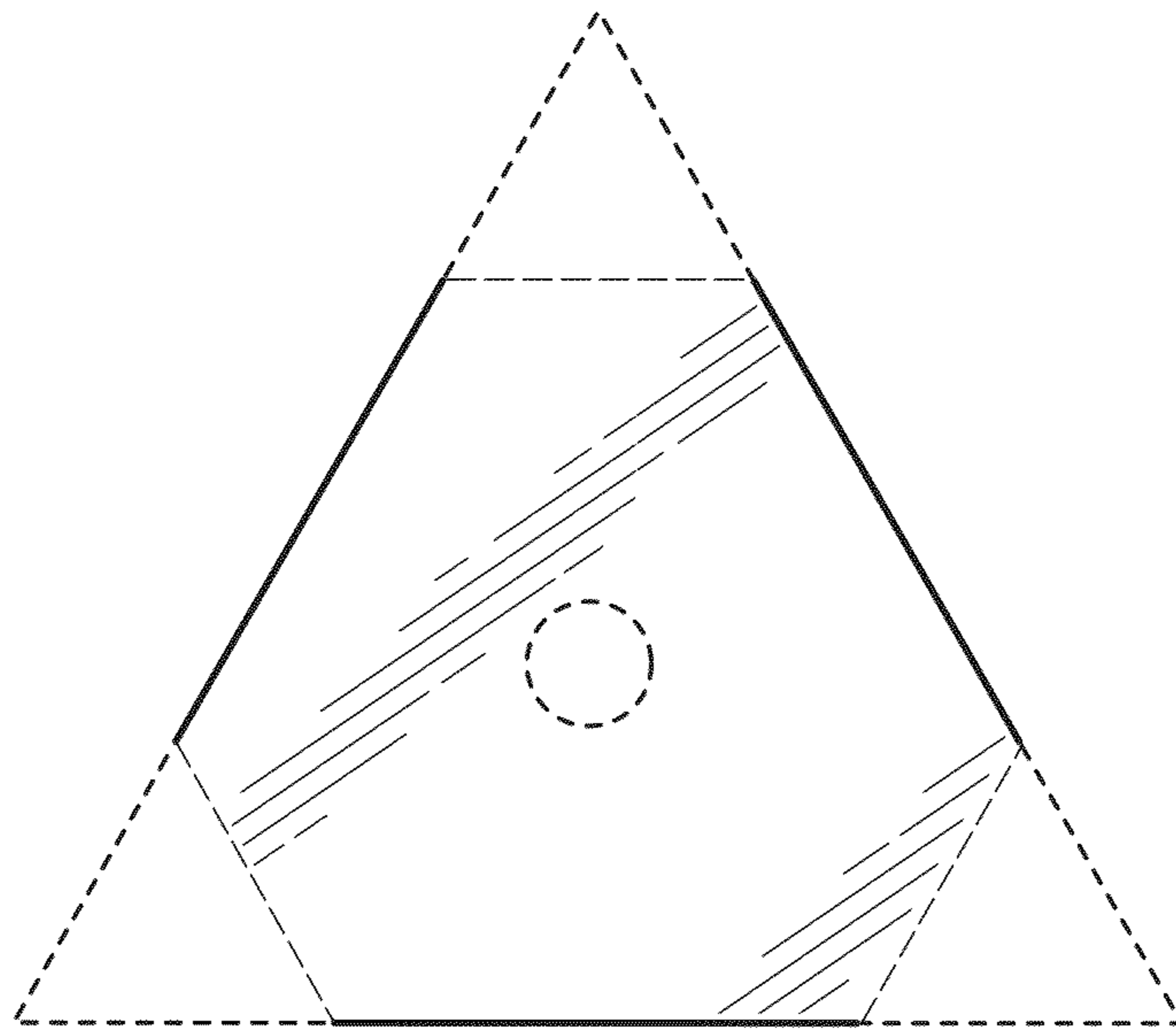


FIG. 3

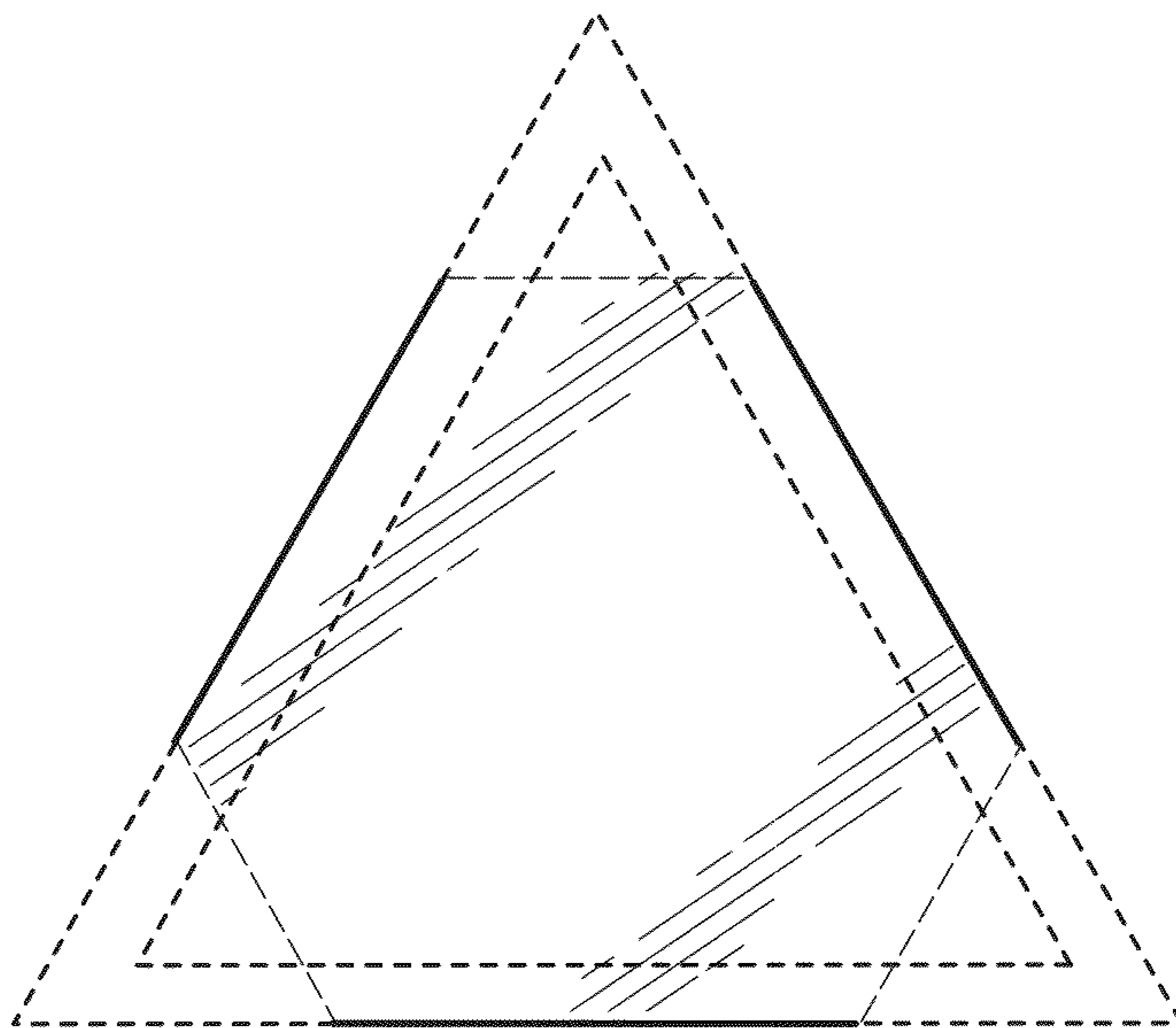


FIG. 4

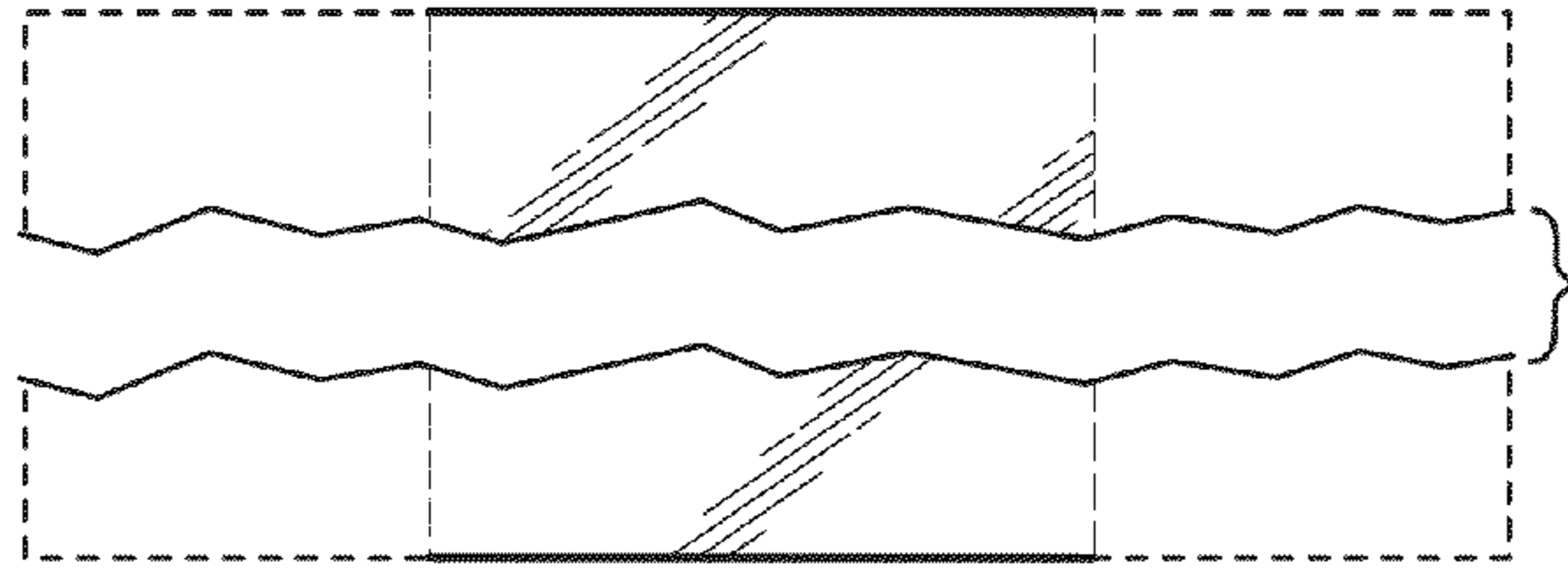


FIG. 5

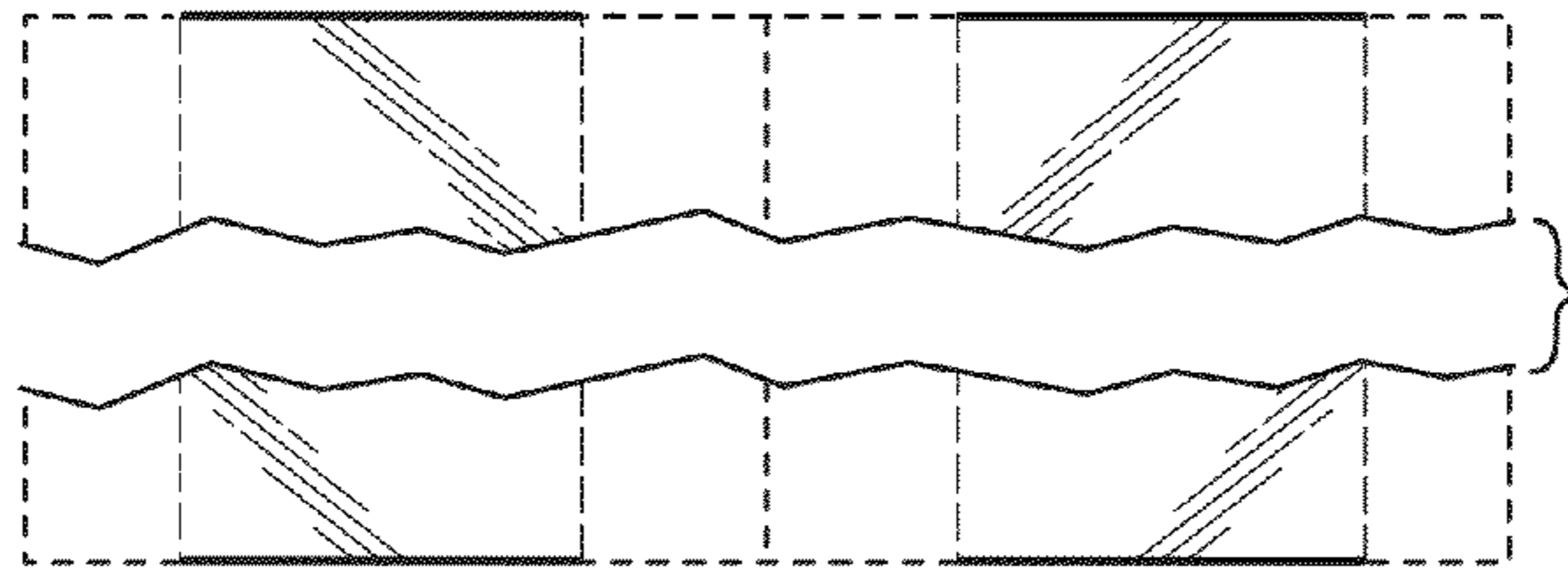


FIG. 6

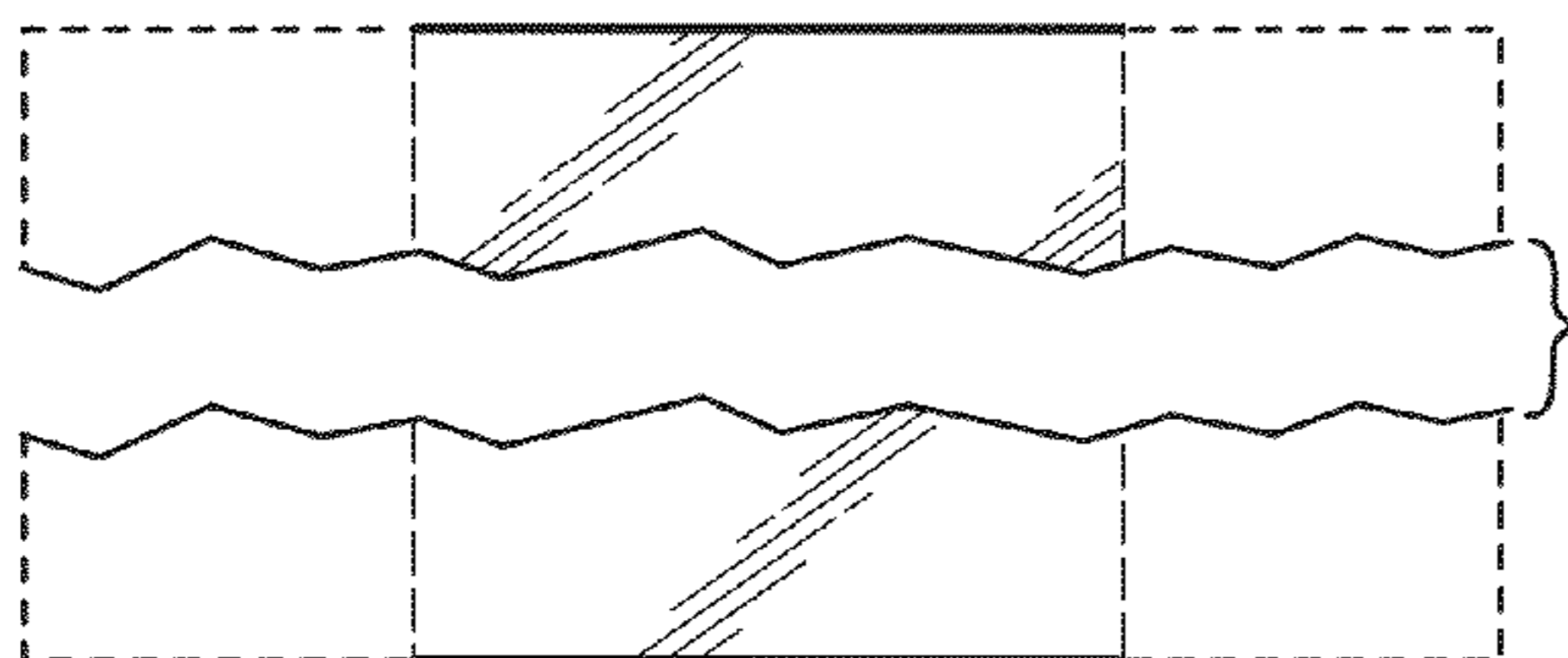


FIG. 7

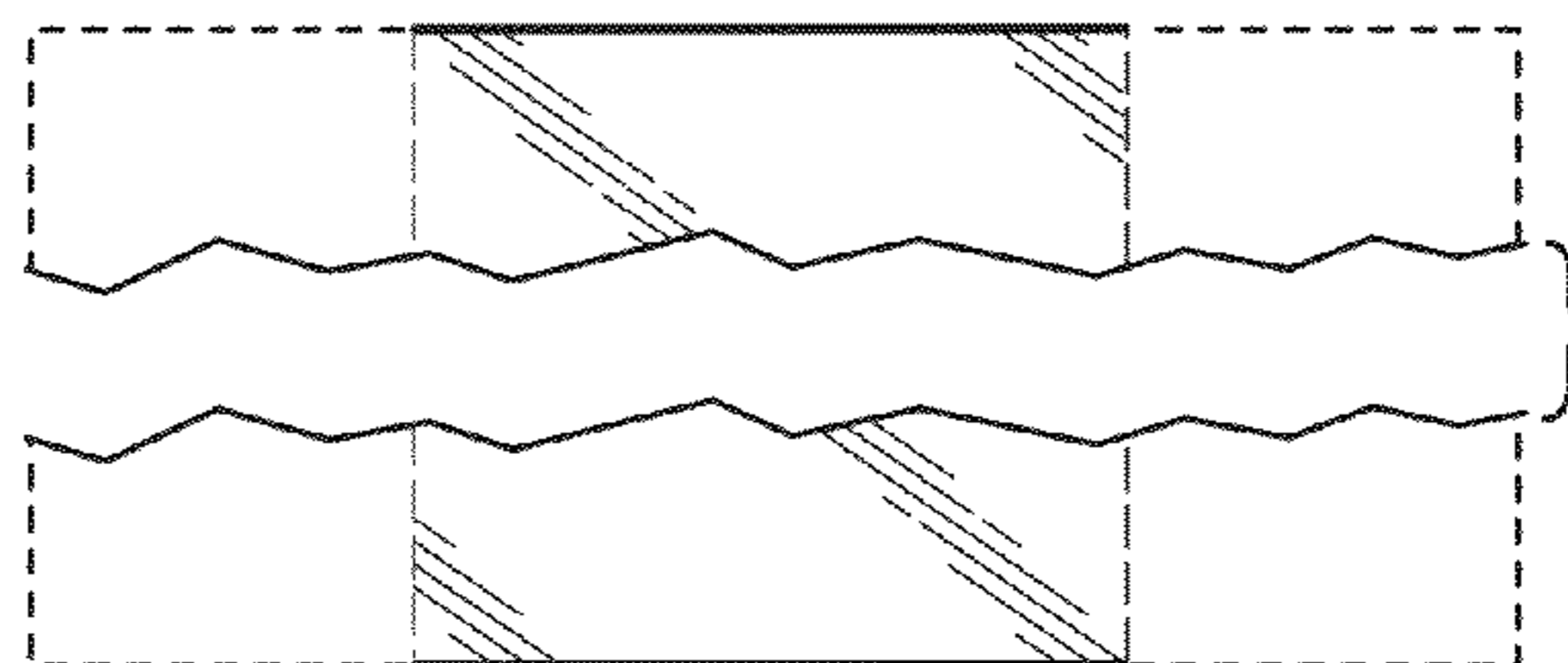


FIG. 8