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

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(54) **MICROFLUIDIC CHIP**

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(51) **LOC (12) Cl.** **24-02**

(52) **U.S. Cl.**
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417/417; 392/470; 165/169, 170, 46;
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CPC . A01N 1/0247; B01J 19/0046; B01J 19/0093;
B01L 9/52; B01L 9/527; B01L 7/52;
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21/03; G01N 21/6428; G01N 21/8483;
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D328,135 S * 7/1992 Fan D24/216
D351,913 S * 10/1994 Hieb D24/169
6,919,045 B1 * 7/2005 Berndt B01J 19/0093
204/450

(Continued)

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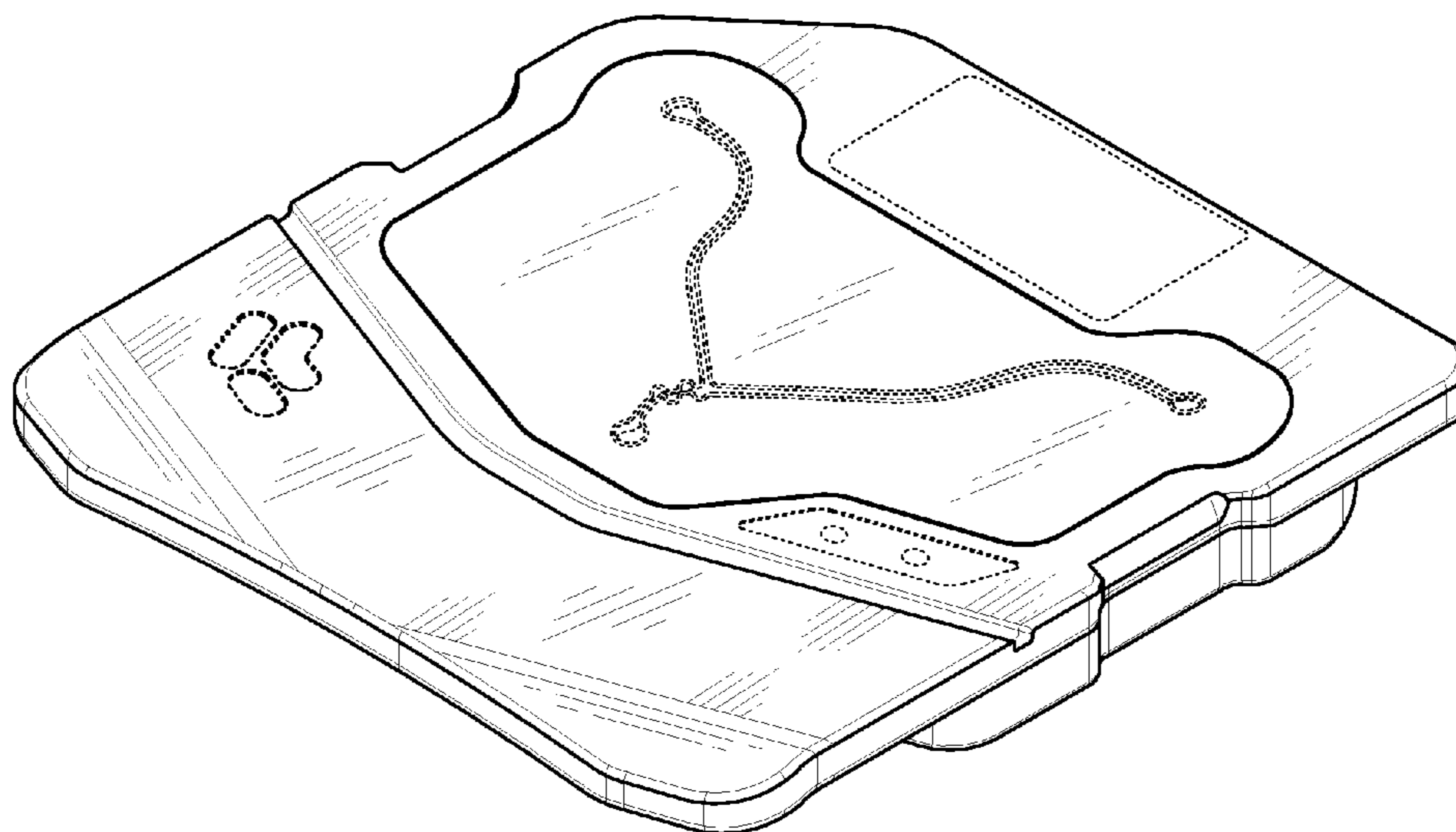
(57) **CLAIM**

The ornamental design for a microfluidic chip, as shown and described.

DESCRIPTION

FIG. 1 is a top plan view of a microfluidic chip showing my new design;
FIG. 2 is a right side elevation view thereof;
FIG. 3 is a left side elevation view thereof;
FIG. 4 is a front elevation view thereof;
FIG. 5 is a rear elevation view thereof;
FIG. 6 is a top front perspective view thereof; and,
FIG. 7 is a bottom rear perspective view thereof.
Broken lines and unshaded portions contained within broken lines depict portions of the microfluidic chip that form no part of the claimed design but are shown for illustrative purposes.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

7,223,371	B2 *	5/2007	Hayenga	G01N 15/1404	2011/0243813	A1 *	10/2011	Jackinsky	B29C 65/1664
				422/50					422/503
7,630,209	B2 *	12/2009	Kim	G06K 19/077	2011/0305607	A1 *	12/2011	Jung	B01L 3/502738
				174/260					422/502
7,959,875	B2 *	6/2011	Zhou	B01L 3/5025	2012/0009098	A1 *	1/2012	Mouradian	B01L 3/502761
				422/502					422/502
8,071,051	B2 *	12/2011	Padmanabhan ...	B01L 3/502715	2012/0183454	A1 *	7/2012	Handique	B01L 3/5027
				422/502					422/502
8,075,853	B2 *	12/2011	Okada	B01L 3/502753	2012/0230887	A1 *	9/2012	Zucchelli	B01F 11/0002
				422/502					422/502
8,168,140	B2 *	5/2012	Beerling	B82Y 15/00	2012/0301372	A1 *	11/2012	Watanabe	B01L 3/50273
				422/500					422/502
8,318,109	B2 *	11/2012	Saltsman	B01F 5/0473	2013/0004385	A1 *	1/2013	Lee	B01L 3/502723
				422/400					422/502
D681,640	S *	5/2013	Aoki	D14/436	2013/0115148	A1 *	5/2013	Yokogawa	B01L 3/50273
D686,340	S *	7/2013	Smith	D24/225					422/502
D688,668	S *	8/2013	Ben-Gad	D14/436	2013/0121877	A1 *	5/2013	Ono	B01L 3/5027
8,747,776	B2 *	6/2014	Yoon	B01L 3/502738					422/68.1
				422/502	2013/0236374	A1 *	9/2013	Edelen	B01L 3/0268
8,747,777	B2 *	6/2014	Park	B01L 3/502707					422/502
				422/501	2013/0280144	A1 *	10/2013	Kageyama	B01L 3/502738
8,961,902	B2 *	2/2015	Falb	B01L 3/5025					422/502
				422/501	2014/0037515	A1 *	2/2014	Charles	B01L 3/502715
8,999,264	B2 *	4/2015	Pugia	B01L 3/502707					422/502
				422/407	2014/0065035	A1 *	3/2014	Son	B01L 3/502707
9,011,795	B2 *	4/2015	Lee	B01L 3/502738					422/502
				422/500	2014/0094391	A1 *	4/2014	McDevitt	B01L 3/5027
D729,250	S *	5/2015	Han	D14/436					506/18
D800,336	S *	10/2017	Chang	D24/224	2014/0186936	A1 *	7/2014	Tanaka	B01L 7/52
D803,416	S *	11/2017	Leaver	D24/224					435/287.2
D812,242	S *	3/2018	Chang	D24/224	2014/0234180	A1 *	8/2014	Linder	G01N 33/57434
2002/0015667	A1 *	2/2002	Chow	B01L 3/502715					422/502
				422/502	2014/0255270	A1 *	9/2014	Satsanarukkit ...	B01L 3/502707
2002/0098124	A1 *	7/2002	Bentsen	B01L 3/502707					422/502
				422/502	2014/0328732	A1 *	11/2014	Delmenico	G01N 33/4905
2004/0184964	A1 *	9/2004	Watanabe	B01F 5/0646					422/502
				422/502	2015/0352548	A1 *	12/2015	Deshpande	B01L 3/5027
2007/0072287	A1 *	3/2007	Morisette	B01L 3/502715					422/502
				435/287.2	2015/0352551	A1 *	12/2015	Carrera Fabra ...	B01L 3/502738
2009/0170189	A1 *	7/2009	Park	B29C 65/08					422/502
				435/288.7	2016/0167050	A1 *	6/2016	Taylor	B01L 3/502738
									422/502
					2018/0353958	A1 *	12/2018	Hinojosa	C09K 3/00
					2019/0143332	A1 *	5/2019	Yu	B01L 3/563
									422/503

* cited by examiner

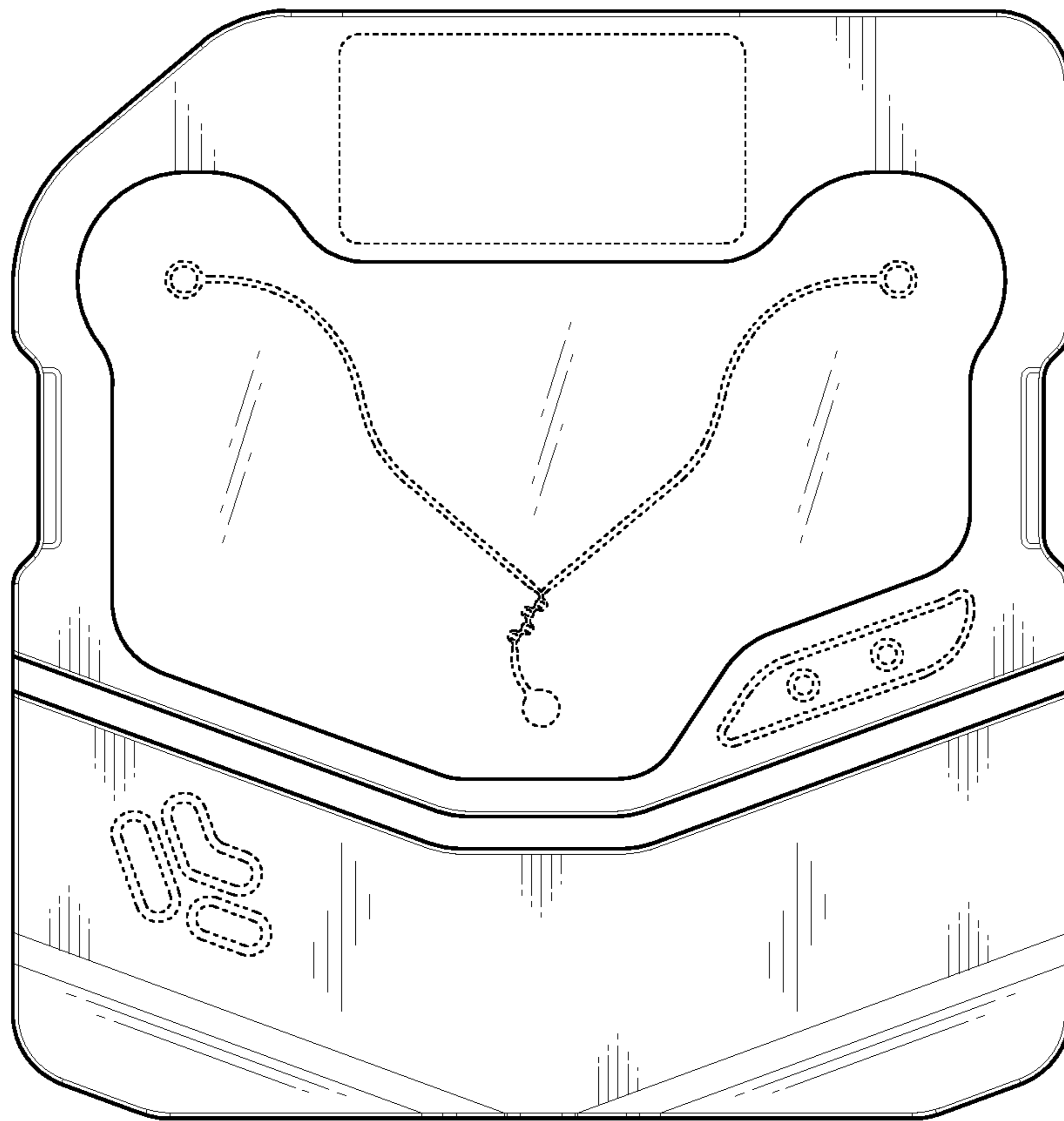


FIG. 1

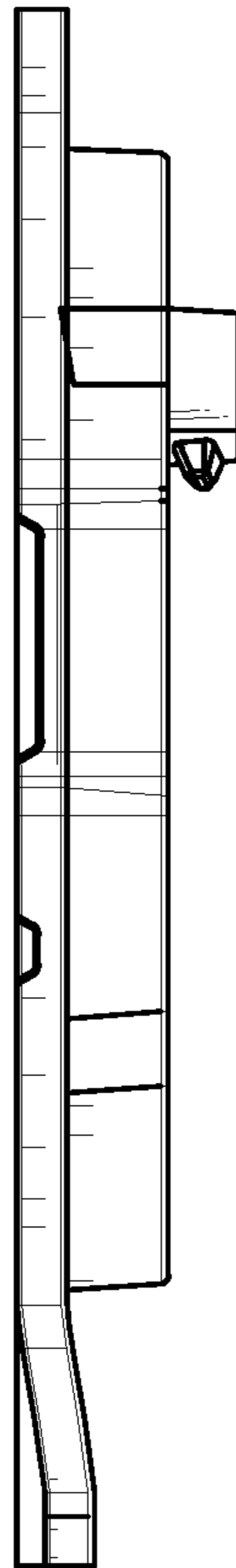


FIG. 2

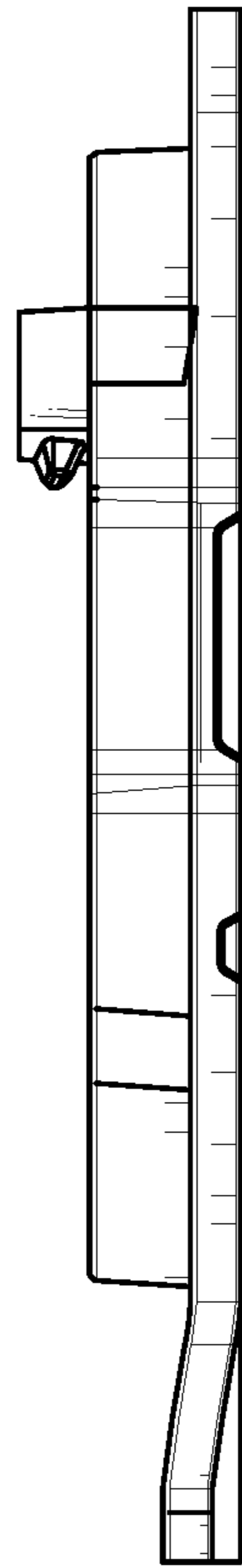


FIG. 3



FIG. 4

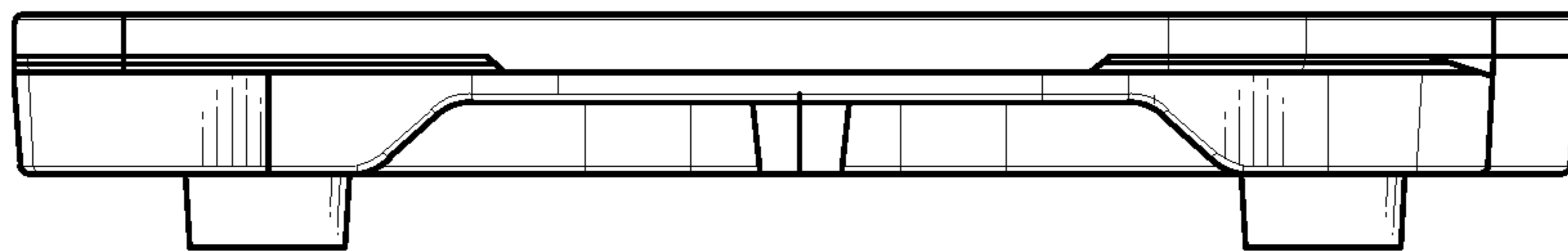


FIG. 5

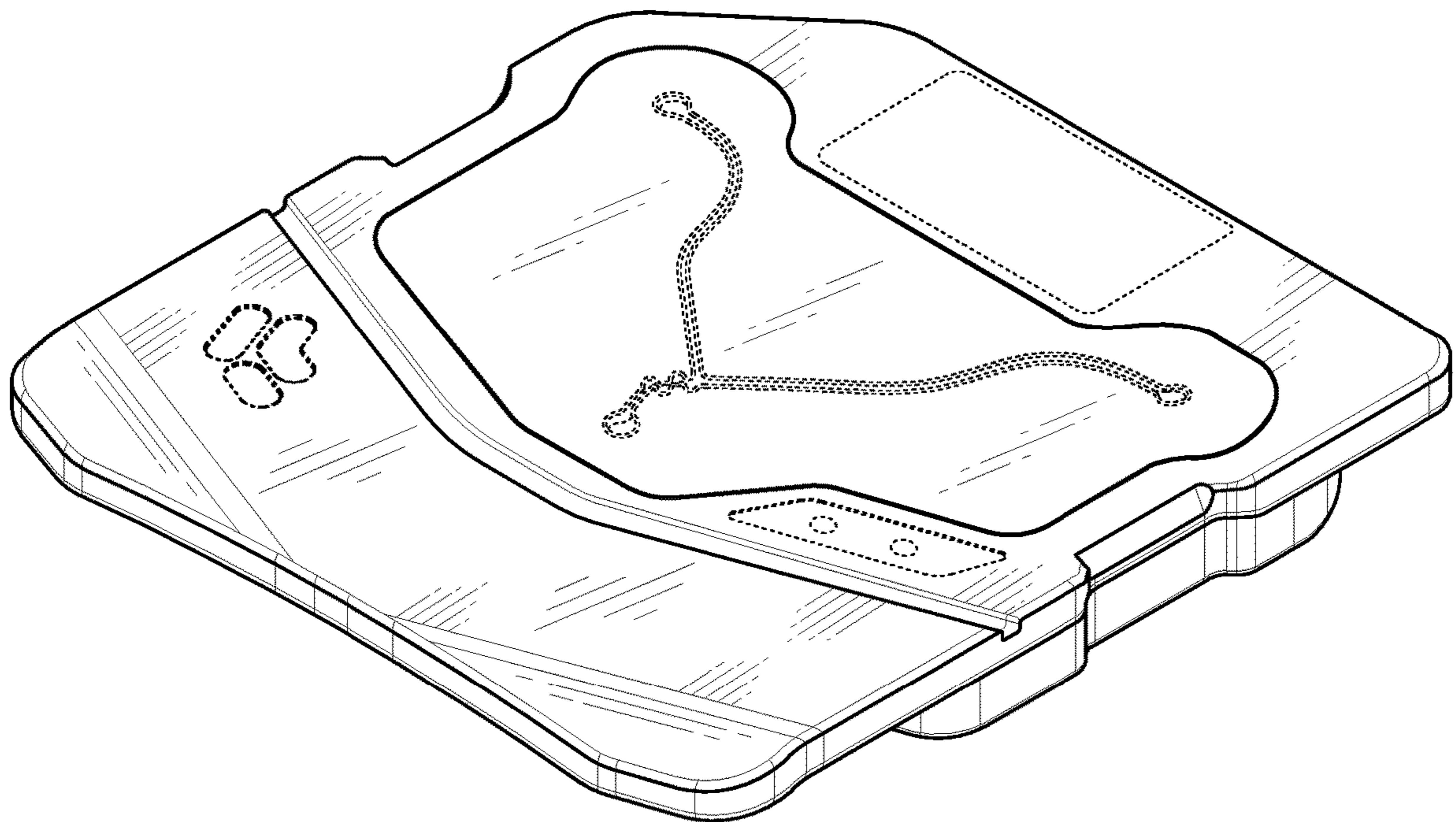


FIG. 6

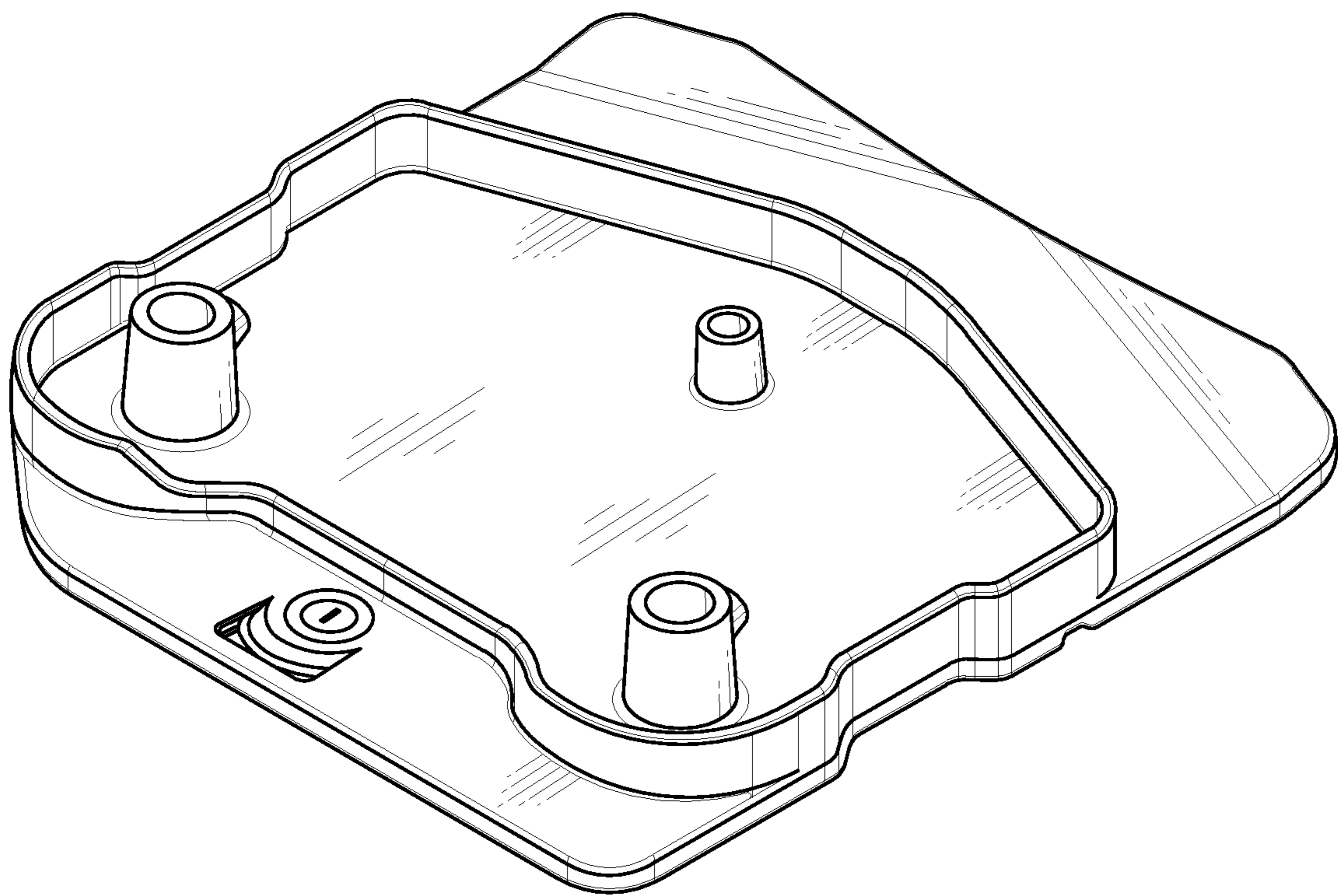


FIG. 7