



US00D833019S

(12) **United States Design Patent** (10) **Patent No.:** **US D833,019 S**
Wigal (45) **Date of Patent:** **** Nov. 6, 2018**

(54) **ORTHODONTIC ELASTOMERIC LIGATURE TIE**

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

(21) Appl. No.: **29/600,344**

(22) Filed: **Apr. 11, 2017**

(51) **LOC (11) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/180**

(58) **Field of Classification Search**
USPC D24/176-182; D11/117; D21/386
CPC A61C 7/125; A61C 7/303; A61C 7/30;
A61C 7/306; A61C 7/12; A61C 7/00;
A61C 7/14; A61C 7/16; A44C 15/007
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,913,228	A	10/1975	Wallshein	
4,585,413	A	4/1986	Wool	
4,687,441	A	8/1987	Klepacki	
5,044,946	A	9/1991	Cleary	
5,160,260	A	11/1992	Chang	
D412,363	S *	7/1999	Stevens	D24/180
D412,988	S *	8/1999	Stevens	D24/180
D447,804	S *	9/2001	Stevens	D24/180
6,616,445	B2 *	9/2003	Abels	A61C 7/125 433/11
7,204,691	B2	4/2007	Darling et al.	
7,306,458	B1	12/2007	Lu	
D607,568	S *	1/2010	Stevens	D24/180
D766,444	S *	9/2016	Stevens	D24/180
9,844,422	B1 *	12/2017	Wu	A61C 7/125

D809,145	S *	1/2018	Wigal	D24/180
2006/0292517	A1	12/2006	Smith	
2007/0128572	A1	6/2007	Herman	
2010/0129765	A1	5/2010	Mohr et al.	
2016/0256241	A1 *	9/2016	Wigal	A61C 7/125

OTHER PUBLICATIONS

International Bureau of WIPO, PCT International Preliminary Report on Patentability for App. No. PCT/US2016/020739 dated Sep. 5, 2017.
PCT International Search Report and Written Opinion for PCT App. No. PCT/US2016/020739.

* cited by examiner

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(57) **CLAIM**

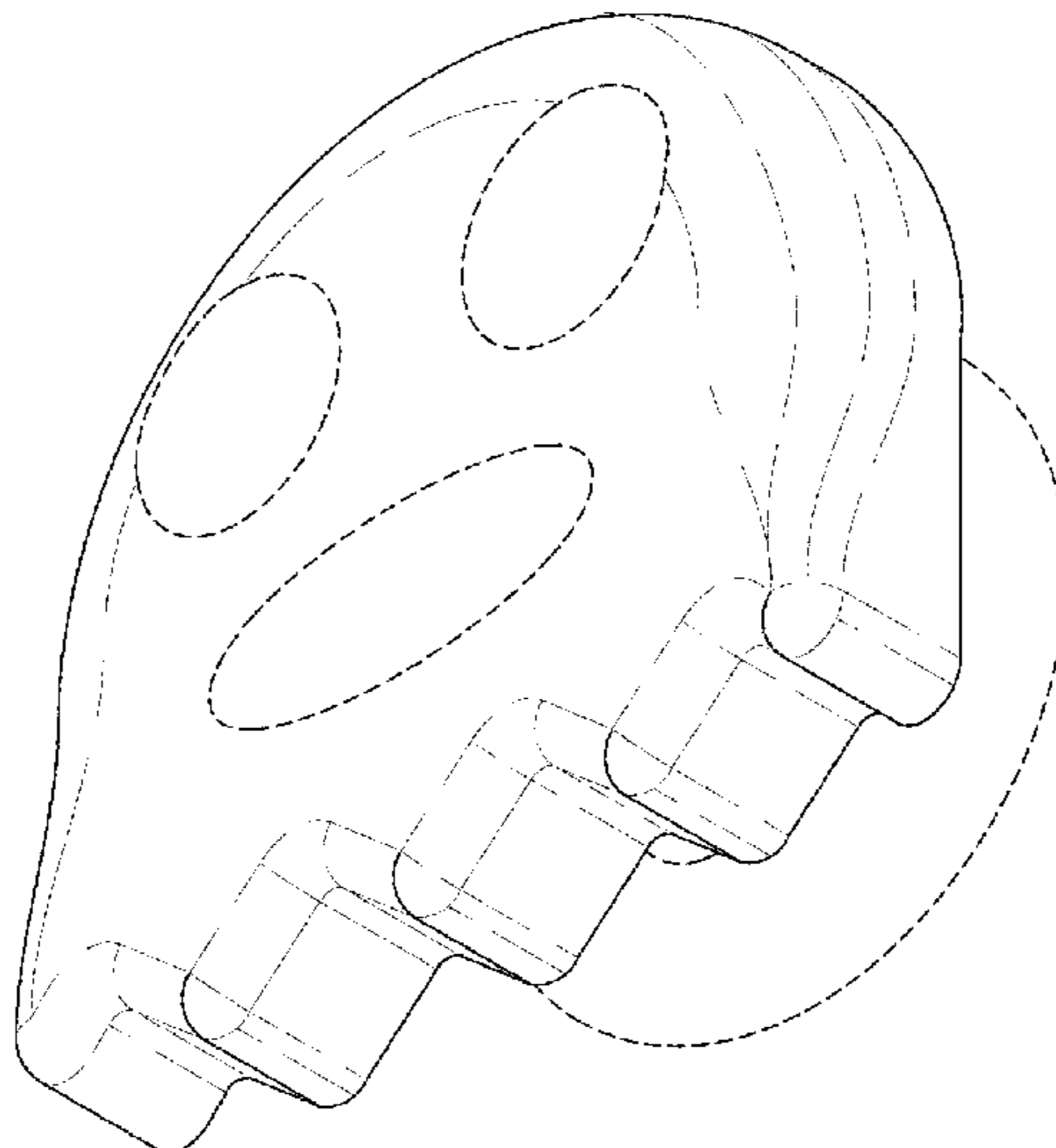
The ornamental design for an orthodontic elastomeric ligature tie, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of an orthodontic elastomeric ligature tie, showing my new design;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a back elevational view thereof;
FIG. 4 is a side elevational view thereof, and the opposite side elevational view is a mirror image of the side elevational view thereof;
FIG. 5 is a top elevational view thereof;
FIG. 6 is a bottom elevational view thereof; and,
FIG. 7 is a front perspective view thereof, wherein the broken line showing of a mouth is for the purpose of illustrating an environment and forms no part of the claimed design.

The broken lines shown in the figures are included for the purpose of illustrating portions of the orthodontic elastomeric ligature tie and form no part of the claimed design.

1 Claim, 5 Drawing Sheets



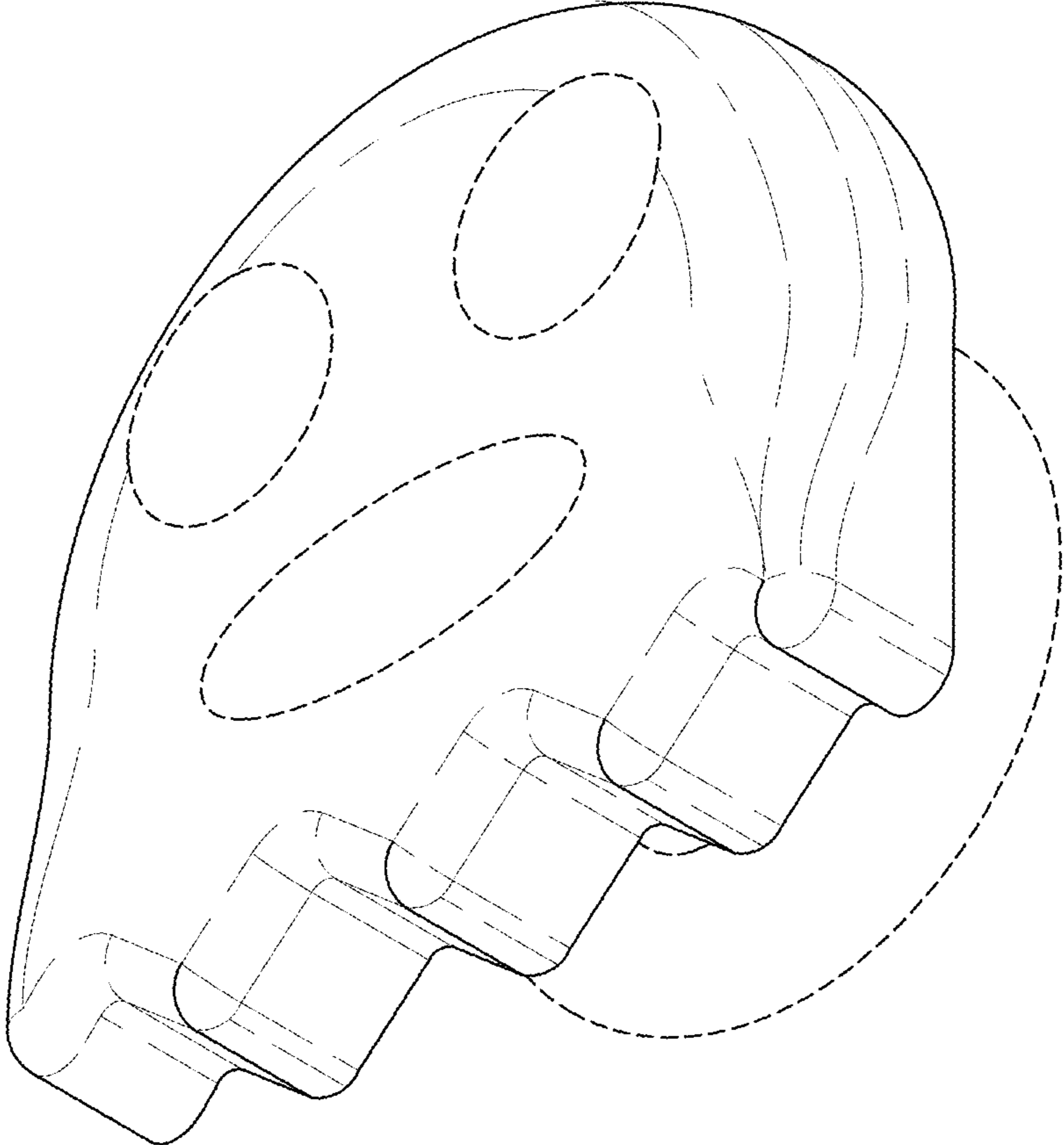


Fig. 1

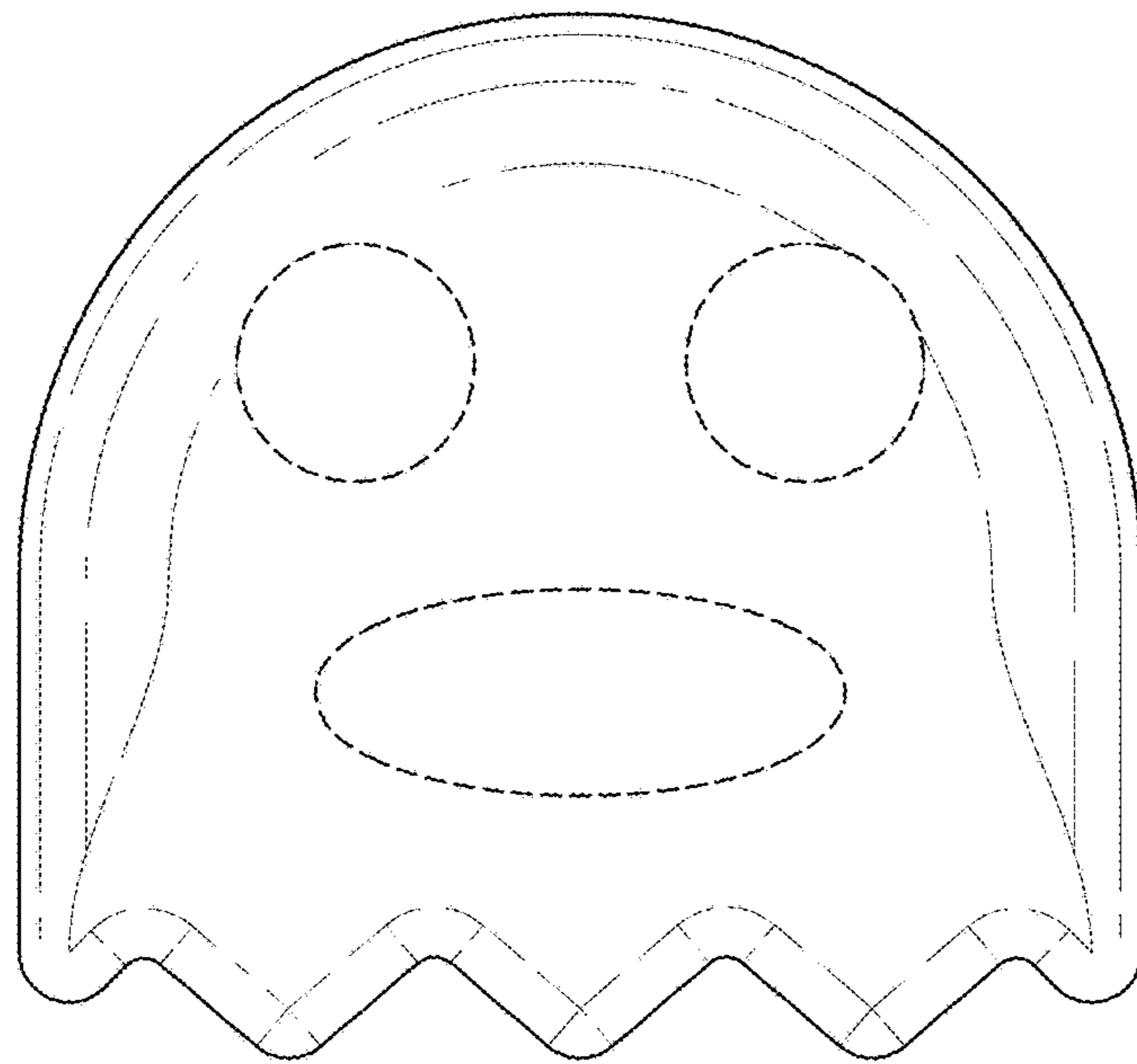


Fig. 2

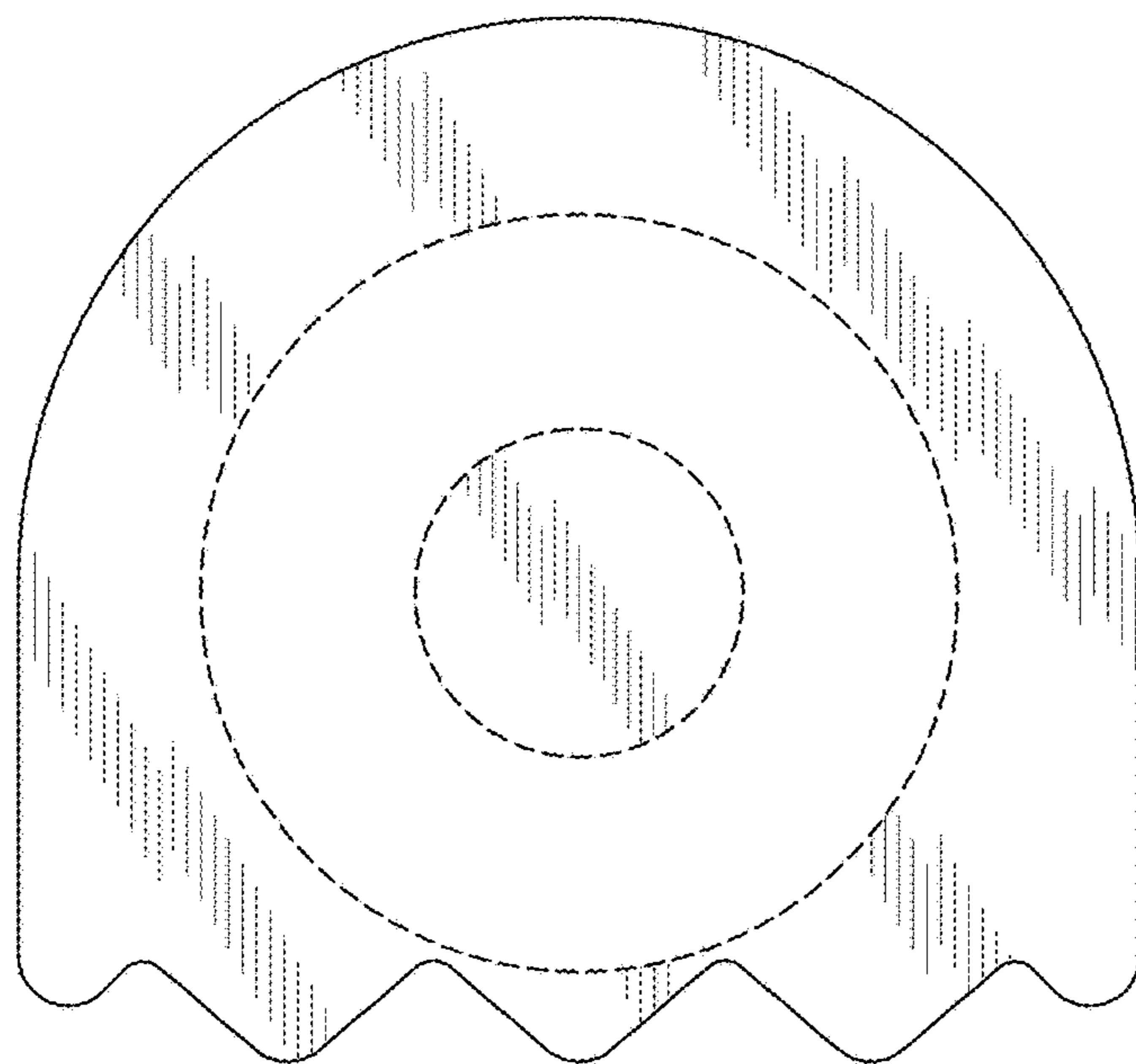


Fig. 3

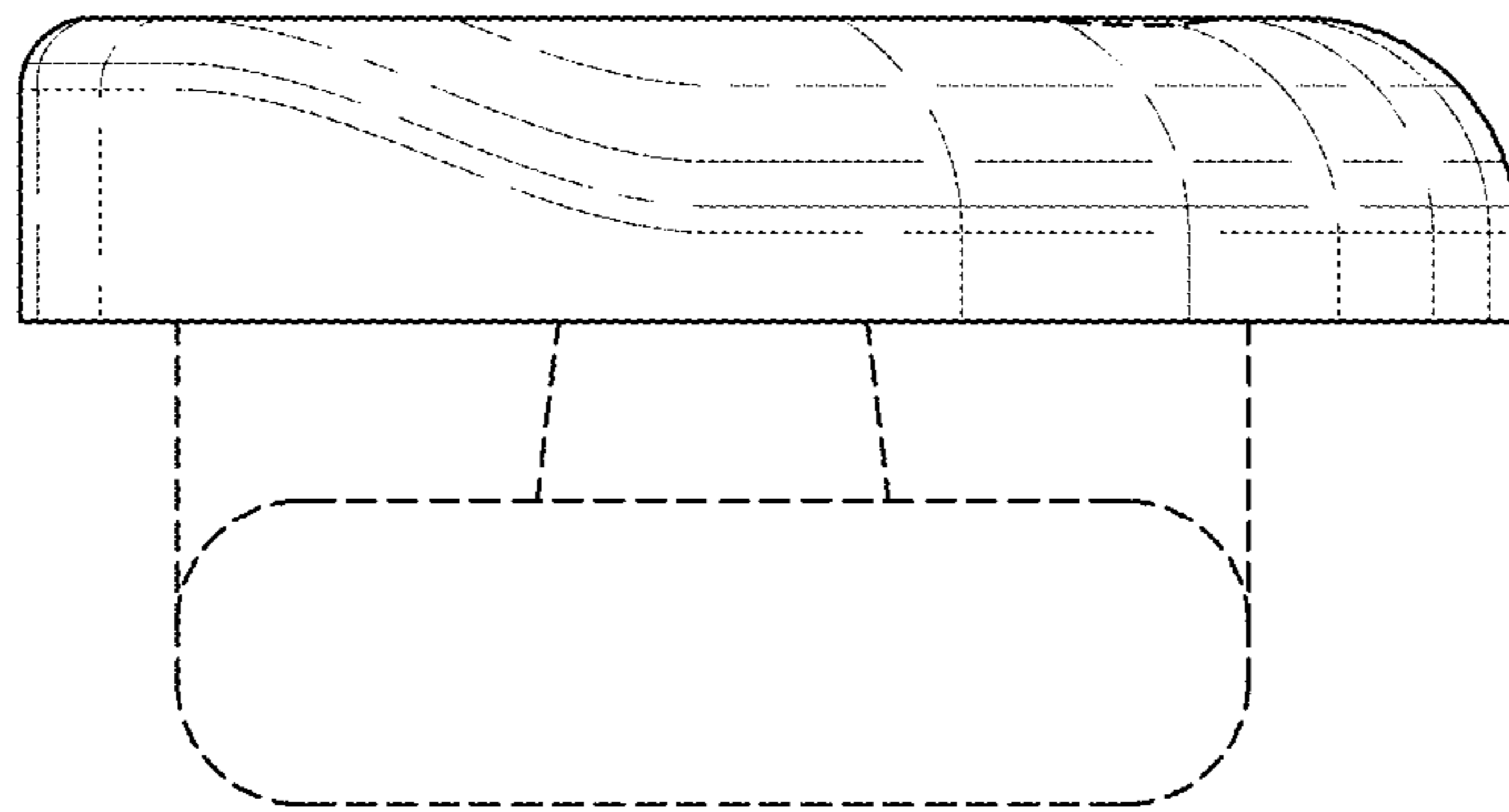


Fig. 4

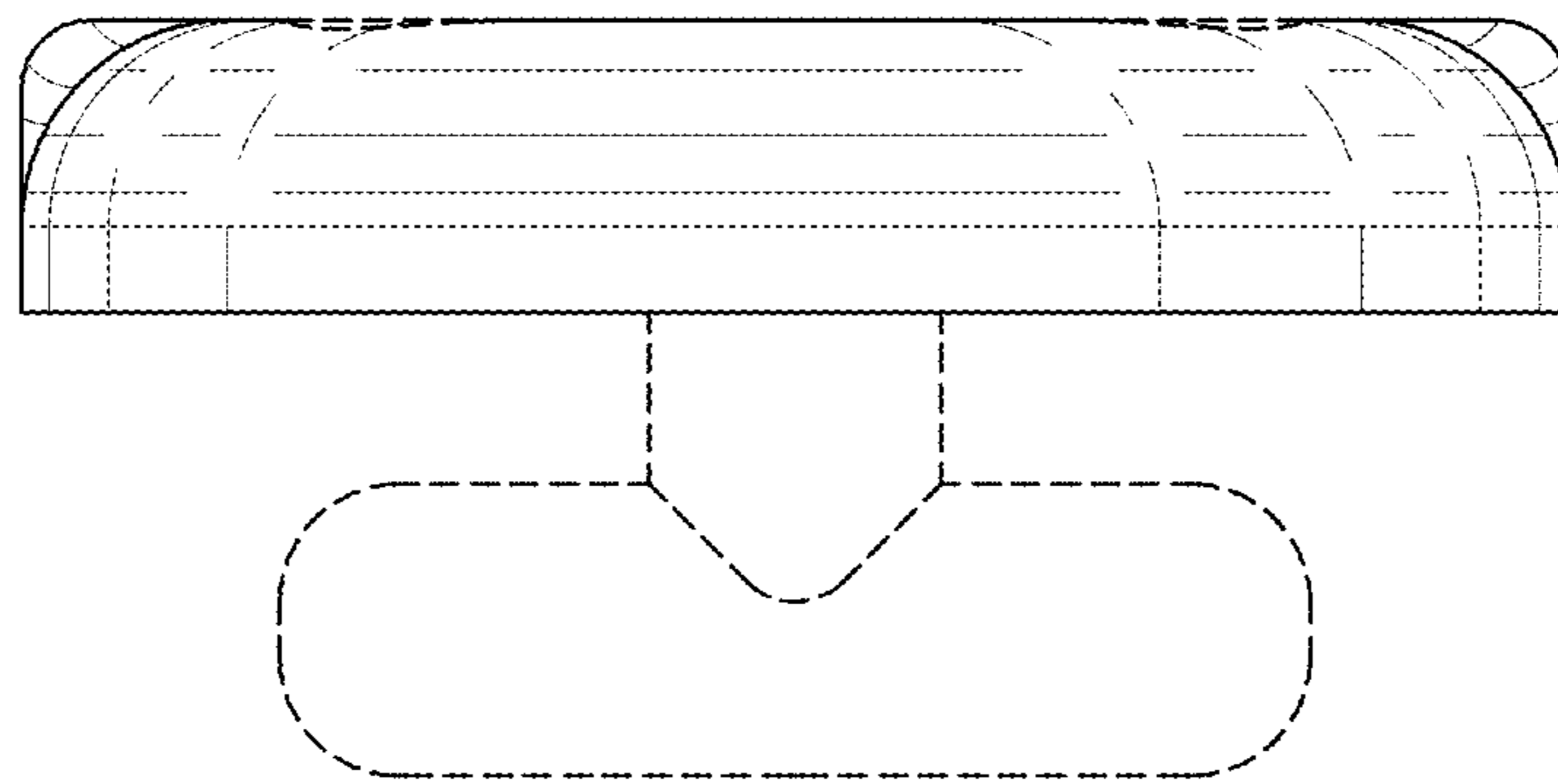


Fig. 5

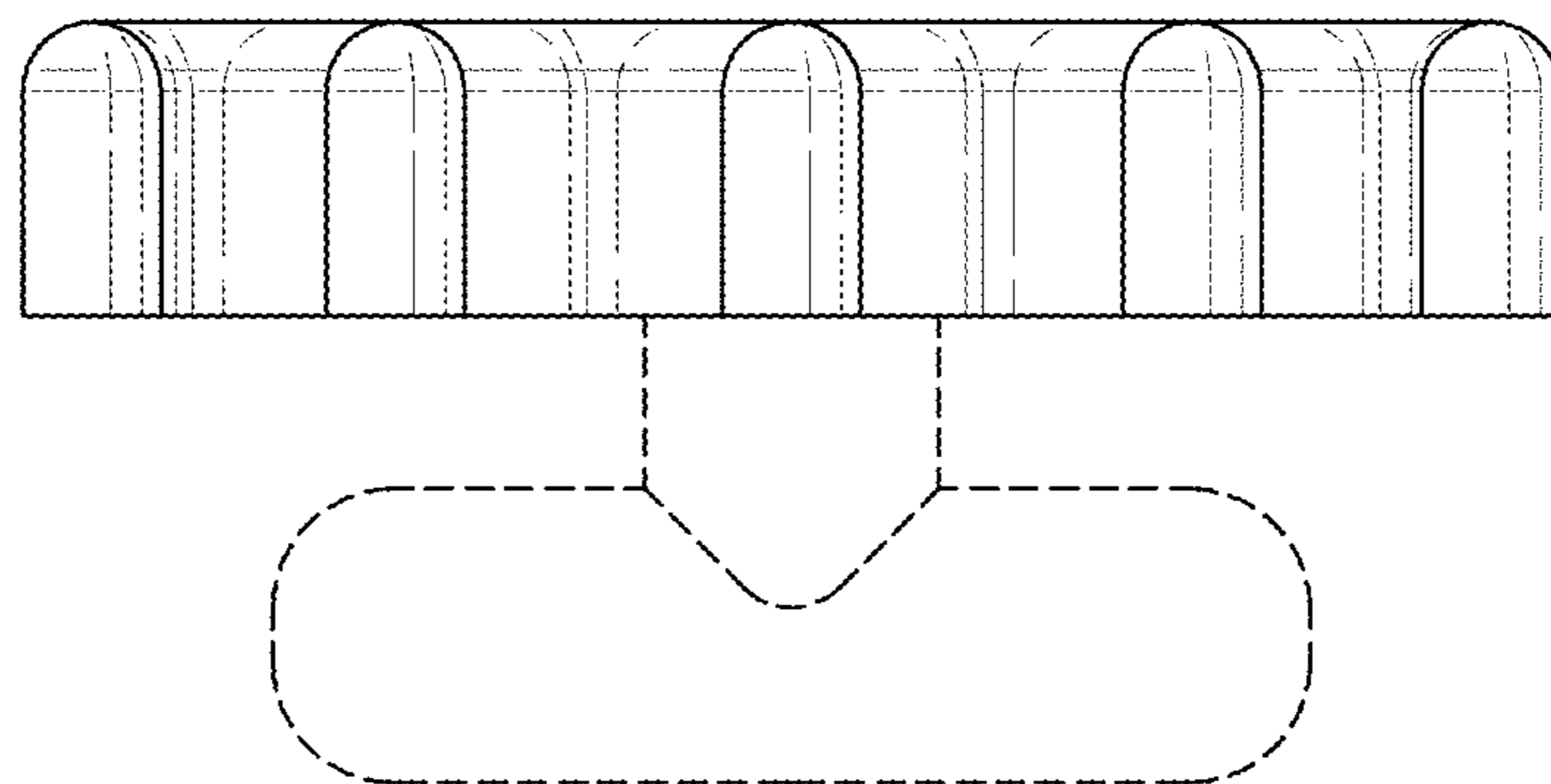


Fig. 6

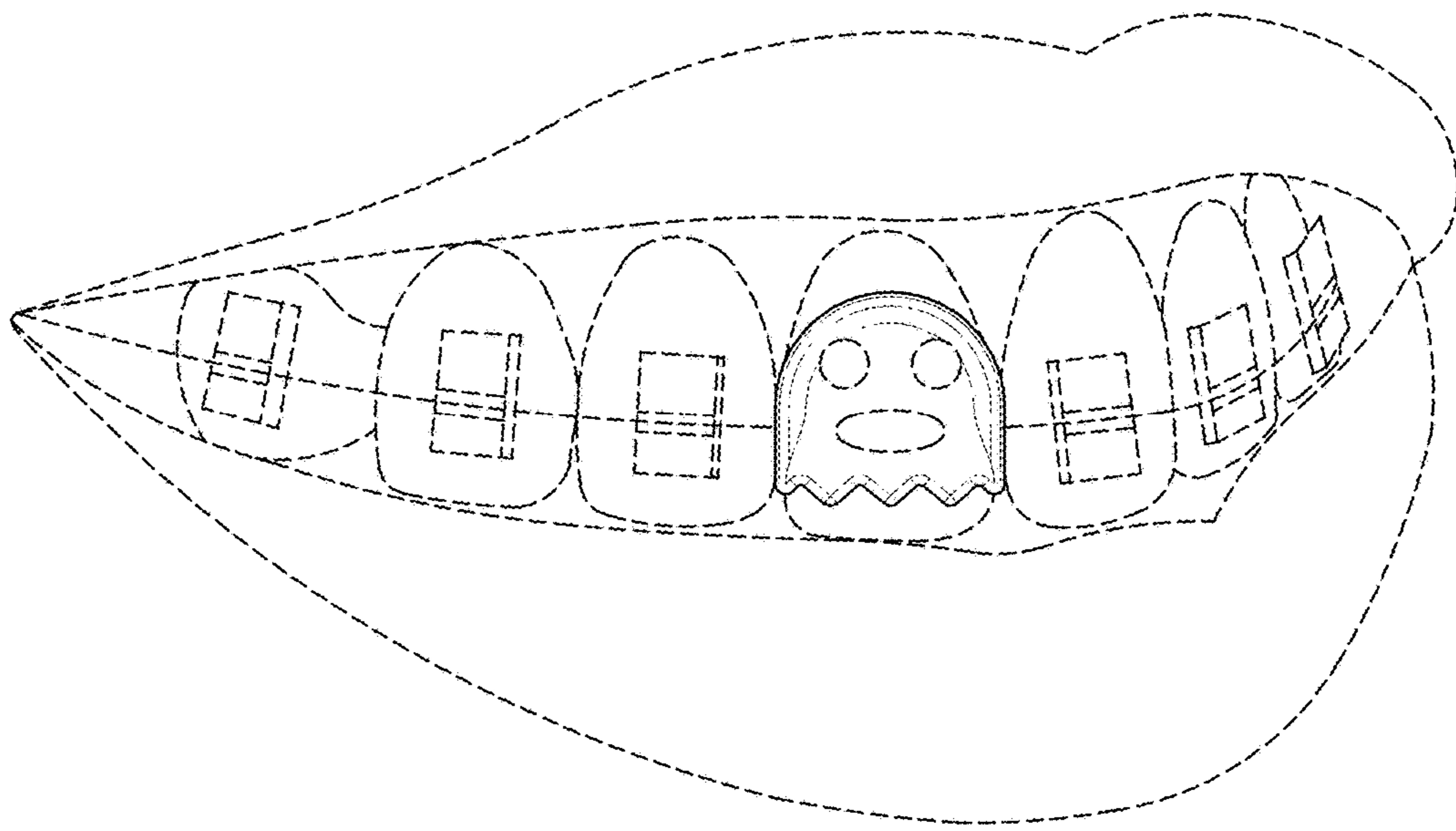


Fig. 7