



US00D969324S

(12) **United States Design Patent** (10) **Patent No.:** **US D969,324 S**
Dyer (45) **Date of Patent:** **** Nov. 8, 2022**

(54) **ORTHODONTIC ELASTOMERIC LIGATURE TIE**

B000YAYXB8/ref=sr_1_12?crd=3M2N3KGE441YK&keywords=alphabet+soup&qid=1663270842&srefix=alphabet+soup%2Caps%2C78&sr=8-12 (Year: 2019).*

(71) Applicant: **Message Ties, LLC**, Birmingham, AL (US)

(Continued)

(72) Inventor: **William Riley Dyer**, Birmingham, AL (US)

Primary Examiner — Jennifer L Rempfer

Assistant Examiner — Danielle Nichole Bowly

(74) *Attorney, Agent, or Firm* — Meunier Carlin & Curfman LLC

(73) Assignee: **Message Ties, LLC**, Birmingham, AL (US)

(57) **CLAIM**

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

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

(21) Appl. No.: **29/839,816**

DESCRIPTION

(22) Filed: **May 24, 2022**

(51) **LOC (13) Cl.** **24-02**

FIG. 1 is a perspective view of a first embodiment of my new design.

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

FIG. 2 is a front view of the design shown in FIG. 1.

(58) **Field of Classification Search**
USPC D24/133, 144, 147, 176, 180, 181;
D18/24; D20/12

FIG. 3 is a rear view of the design shown in FIG. 1.

FIG. 4 is a right-side view of the design shown in FIG. 1.

FIG. 5 is a left-side view of the design shown in FIG. 1.

FIG. 6 is a top view of the design shown in FIG. 1.

FIG. 7 is a bottom view of the design shown in FIG. 1.

FIG. 8 is a perspective view of the design shown in FIG. 1 in use.

(Continued)

(56) **References Cited**

FIG. 9 is a perspective view of a second embodiment of my new design.

U.S. PATENT DOCUMENTS

D18,971 S * 3/1889 Lauschke D18/24
D25,979 S * 8/1896 Updike et al. D18/24

FIG. 10 is a front view of the design shown in FIG. 9.

FIG. 11 is a rear view of the design shown in FIG. 9.

FIG. 12 is a right-side view of the design shown in FIG. 9.

FIG. 13 is a left-side view of the design shown in FIG. 9.

FIG. 14 is a top view of the design shown in FIG. 9.

FIG. 15 is a bottom view of the design shown in FIG. 9.

FIG. 16 is a perspective view of the design shown in FIG. 9 in use.

(Continued)

FOREIGN PATENT DOCUMENTS

CA 176962 * 11/2017
CN 304589711 * 4/2018

FIG. 17 is a perspective view of a third embodiment of my new design.

FIG. 18 is a front view of the design shown in FIG. 17.

FIG. 19 is a rear view of the design shown in FIG. 17.

FIG. 20 is a right-side view of the design shown in FIG. 17.

FIG. 21 is a left-side view of the design shown in FIG. 17.

(Continued)

OTHER PUBLICATIONS

Maggi Noodle Alphabet Soup, Amazon.com, date reviewed Jul. 8, 2019—date retrieved Sep. 15, 2022—29839816—<https://www.amazon.com/Maggi-Appetit-Buchstaben-Noodle-Alphabet/dp/>

(Continued)

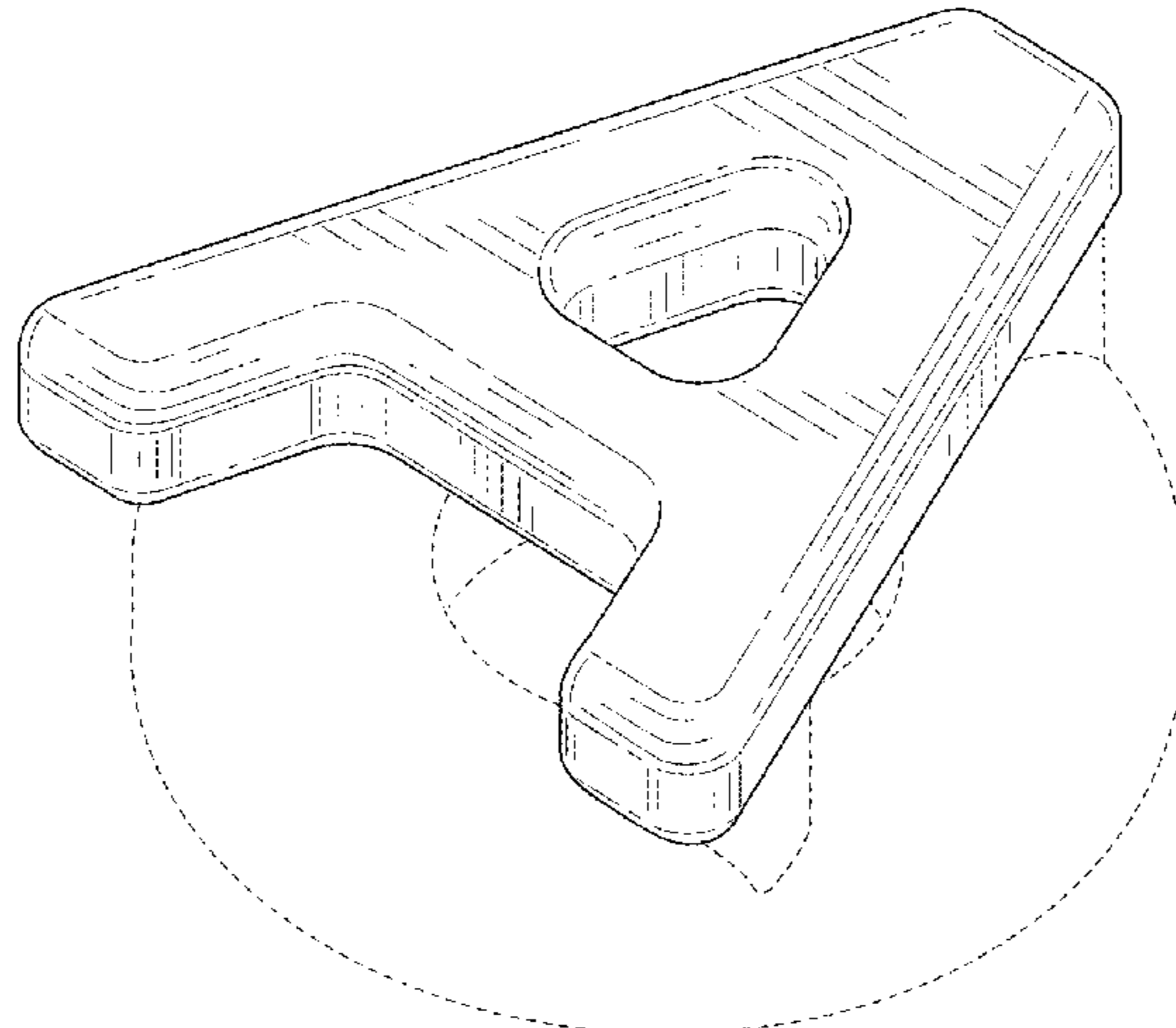


FIG. 22 is a top view of the design shown in FIG. 17.
FIG. 23 is a bottom view of the design shown in FIG. 17.
FIG. 24 is a perspective view of the design shown in FIG. 17 in use.
FIG. 25 is a perspective view of a fourth embodiment of my new design.
FIG. 26 is a front view of the design shown in FIG. 25.
FIG. 27 is a rear view of the design shown in FIG. 25.
FIG. 28 is a right-side view of the design shown in FIG. 25.
FIG. 29 is a left-side view of the design shown in FIG. 25.
FIG. 30 is a top view of the design shown in FIG. 25.
FIG. 31 is a bottom view of the design shown in FIG. 25.
FIG. 32 is a perspective view of the design shown in FIG. 25 in use.
FIG. 33 is a perspective view of a fifth embodiment of my new design.
FIG. 34 is a front view of the design shown in FIG. 33.
FIG. 35 is a rear view of the design shown in FIG. 33.
FIG. 36 is a right-side view of the design shown in FIG. 33.
FIG. 37 is a left-side view of the design shown in FIG. 33.
FIG. 38 is a top view of the design shown in FIG. 33.
FIG. 39 is a bottom view of the design shown in FIG. 33.
FIG. 40 is a perspective view of the design shown in FIG. 33 in use.
FIG. 41 is a perspective view of a sixth embodiment of my new design.
FIG. 42 is a front view of the design shown in FIG. 41.
FIG. 43 is a rear view of the design shown in FIG. 41.
FIG. 44 is a right-side view of the design shown in FIG. 41.
FIG. 45 is a left-side view of the design shown in FIG. 41.
FIG. 46 is a top view of the design shown in FIG. 41.
FIG. 47 is a bottom view of the design shown in FIG. 41.
FIG. 48 is a perspective view of the design shown in FIG. 41 in use.
FIG. 49 is a perspective view of a seventh embodiment of my new design.
FIG. 50 is a front view of the design shown in FIG. 49.
FIG. 51 is a rear view of the design shown in FIG. 49.
FIG. 52 is a right-side view of the design shown in FIG. 49.
FIG. 53 is a left-side view of the design shown in FIG. 49.
FIG. 54 is a top view of the design shown in FIG. 49.
FIG. 55 is a bottom view of the design shown in FIG. 49.
FIG. 56 is a perspective view of the design shown in FIG. 49 in use.
FIG. 57 is a perspective view of an eighth embodiment of my new design.
FIG. 58 is a front view of the design shown in FIG. 57.
FIG. 59 is a rear view of the design shown in FIG. 57.
FIG. 60 is a right-side view of the design shown in FIG. 57.
FIG. 61 is a left-side view of the design shown in FIG. 57.
FIG. 62 is a top view of the design shown in FIG. 57.
FIG. 63 is a bottom view of the design shown in FIG. 57.
FIG. 64 is a perspective view of the design shown in FIG. 57 in use.
FIG. 65 is a perspective view of a ninth embodiment of my new design.
FIG. 66 is a front view of the design shown in FIG. 65.
FIG. 67 is a rear view of the design shown in FIG. 65.
FIG. 68 is a right-side view of the design shown in FIG. 65.
FIG. 69 is a left-side view of the design shown in FIG. 65.
FIG. 70 is a top view of the design shown in FIG. 65.
FIG. 71 is a bottom view of the design shown in FIG. 65.
FIG. 72 is a perspective view of the design shown in FIG. 65 in use.

FIG. 73 is a perspective view of a tenth embodiment of my new design.
FIG. 74 is a front view of the design shown in FIG. 73.
FIG. 75 is a rear view of the design shown in FIG. 73.
FIG. 76 is a right-side view of the design shown in FIG. 73.
FIG. 77 is a left-side view of the design shown in FIG. 73.
FIG. 78 is a top view of the design shown in FIG. 73.
FIG. 79 is a bottom view of the design shown in FIG. 73.
FIG. 80 is a perspective view of the design shown in FIG. 73 in use.
FIG. 81 is a perspective view of an eleventh embodiment of my new design.
FIG. 82 is a front view of the design shown in FIG. 81.
FIG. 83 is a rear view of the design shown in FIG. 81.
FIG. 84 is a right-side view of the design shown in FIG. 81.
FIG. 85 is a left-side view of the design shown in FIG. 81.
FIG. 86 is a top view of the design shown in FIG. 81.
FIG. 87 is a bottom view of the design shown in FIG. 81.
FIG. 88 is a perspective view of the design shown in FIG. 81 in use.
FIG. 89 is a perspective view of a twelfth embodiment of my new design.
FIG. 90 is a front view of the design shown in FIG. 89.
FIG. 91 is a rear view of the design shown in FIG. 89.
FIG. 92 is a right-side view of the design shown in FIG. 89.
FIG. 93 is a left-side view of the design shown in FIG. 89.
FIG. 94 is a top view of the design shown in FIG. 89.
FIG. 95 is a bottom view of the design shown in FIG. 89.
FIG. 96 is a perspective view of the design shown in FIG. 89 in use.
FIG. 97 is a perspective view of a thirteenth embodiment of my new design.
FIG. 98 is a front view of the design shown in FIG. 97.
FIG. 99 is a rear view of the design shown in FIG. 97.
FIG. 100 is a right-side view of the design shown in FIG. 97.
FIG. 101 is a left-side view of the design shown in FIG. 97.
FIG. 102 is a top view of the design shown in FIG. 97.
FIG. 103 is a bottom view of the design shown in FIG. 97.
FIG. 104 is a perspective view of the design shown in FIG. 97 in use.
FIG. 105 is a perspective view of a fourteenth embodiment of my new design.
FIG. 106 is a front view of the design shown in FIG. 105.
FIG. 107 is a rear view of the design shown in FIG. 105.
FIG. 108 is a right-side view of the design shown in FIG. 105.
FIG. 109 is a left-side view of the design shown in FIG. 105.
FIG. 110 is a top view of the design shown in FIG. 105.
FIG. 111 is a bottom view of the design shown in FIG. 105.
FIG. 112 is a perspective view of the design shown in FIG. 105 in use.
FIG. 113 is a perspective view of a fifteenth embodiment of my new design.
FIG. 114 is a front view of the design shown in FIG. 113.
FIG. 115 is a rear view of the design shown in FIG. 113.
FIG. 116 is a right-side view of the design shown in FIG. 113.
FIG. 117 is a left-side view of the design shown in FIG. 113.
FIG. 118 is a top view of the design shown in FIG. 113.
FIG. 119 is a bottom view of the design shown in FIG. 113.
FIG. 120 is a perspective view of the design shown in FIG. 113 in use.
FIG. 121 is a perspective view of a sixteenth embodiment of my new design.

FIG. 122 is a front view of the design shown in FIG. 121.
FIG. 123 is a rear view of the design shown in FIG. 121.
FIG. 124 is a right-side view of the design shown in FIG. 121.

FIG. 125 is a left-side view of the design shown in FIG. 121.
FIG. 126 is a top view of the design shown in FIG. 121.
FIG. 127 is a bottom view of the design shown in FIG. 121.
FIG. 128 is a perspective view of the design shown in FIG. 121 in use.

FIG. 129 is a perspective view of a seventeenth embodiment of my new design.

FIG. 130 is a front view of the design shown in FIG. 129.
FIG. 131 is a rear view of the design shown in FIG. 129.
FIG. 132 is a right-side view of the design shown in FIG. 129.

FIG. 133 is a left-side view of the design shown in FIG. 129.
FIG. 134 is a top view of the design shown in FIG. 129.
FIG. 135 is a bottom view of the design shown in FIG. 129.
FIG. 136 is a perspective view of the design shown in FIG. 129 in use.

FIG. 137 is a perspective view of an eighteenth embodiment of my new design.

FIG. 138 is a front view of the design shown in FIG. 137.
FIG. 139 is a rear view of the design shown in FIG. 137.
FIG. 140 is a right-side view of the design shown in FIG. 137.

FIG. 141 is a left-side view of the design shown in FIG. 137.
FIG. 142 is a top view of the design shown in FIG. 137.
FIG. 143 is a bottom view of the design shown in FIG. 137.
FIG. 144 is a perspective view of the design shown in FIG. 137 in use.

FIG. 145 is a perspective view of a nineteenth embodiment of my new design.

FIG. 146 is a front view of the design shown in FIG. 145.
FIG. 147 is a rear view of the design shown in FIG. 145.
FIG. 148 is a right-side view of the design shown in FIG. 145.

FIG. 149 is a left-side view of the design shown in FIG. 145.
FIG. 150 is a top view of the design shown in FIG. 145.
FIG. 151 is a bottom view of the design shown in FIG. 145.
FIG. 152 is a perspective view of the design shown in FIG. 145 in use.

FIG. 153 is a perspective view of a twentieth embodiment of my new design.

FIG. 154 is a front view of the design shown in FIG. 153.
FIG. 155 is a rear view of the design shown in FIG. 153.
FIG. 156 is a right-side view of the design shown in FIG. 153.

FIG. 157 is a left-side view of the design shown in FIG. 153.
FIG. 158 is a top view of the design shown in FIG. 153.
FIG. 159 is a bottom view of the design shown in FIG. 153.
FIG. 160 is a perspective view of the design shown in FIG. 153 in use.

FIG. 161 is a perspective view of a twenty-first embodiment of my new design.

FIG. 162 is a front view of the design shown in FIG. 161.
FIG. 163 is a rear view of the design shown in FIG. 161.
FIG. 164 is a right-side view of the design shown in FIG. 161.

FIG. 165 is a left-side view of the design shown in FIG. 161.
FIG. 166 is a top view of the design shown in FIG. 161.
FIG. 167 is a bottom view of the design shown in FIG. 161.
FIG. 168 is a perspective view of the design shown in FIG. 161 in use.

FIG. 169 is a perspective view of a twenty-second embodiment of my new design.

FIG. 170 is a front view of the design shown in FIG. 169.
FIG. 171 is a rear view of the design shown in FIG. 169.
FIG. 172 is a right-side view of the design shown in FIG. 169.

FIG. 173 is a left-side view of the design shown in FIG. 169.
FIG. 174 is a top view of the design shown in FIG. 169.
FIG. 175 is a bottom view of the design shown in FIG. 169.
FIG. 176 is a perspective view of the design shown in FIG. 169 in use.

FIG. 177 is a perspective view of a twenty-third embodiment of my new design.

FIG. 178 is a front view of the design shown in FIG. 177.
FIG. 179 is a rear view of the design shown in FIG. 177.
FIG. 180 is a right-side view of the design shown in FIG. 177.

FIG. 181 is a left-side view of the design shown in FIG. 177.
FIG. 182 is a top view of the design shown in FIG. 177.
FIG. 183 is a bottom view of the design shown in FIG. 177.
FIG. 184 is a perspective view of the design shown in FIG. 177 in use.

FIG. 185 is a perspective view of a twenty-fourth embodiment of my new design.

FIG. 186 is a front view of the design shown in FIG. 185.
FIG. 187 is a rear view of the design shown in FIG. 185.
FIG. 188 is a right-side view of the design shown in FIG. 185.

FIG. 189 is a left-side view of the design shown in FIG. 185.
FIG. 190 is a top view of the design shown in FIG. 185.
FIG. 191 is a bottom view of the design shown in FIG. 185.
FIG. 192 is a perspective view of the design shown in FIG. 185 in use.

FIG. 193 is a perspective view of a twenty-fifth embodiment of my new design.

FIG. 194 is a front view of the design shown in FIG. 193.
FIG. 195 is a rear view of the design shown in FIG. 193.
FIG. 196 is a right-side view of the design shown in FIG. 193.

FIG. 197 is a left-side view of the design shown in FIG. 193.
FIG. 198 is a top view of the design shown in FIG. 193.
FIG. 199 is a bottom view of the design shown in FIG. 193.
FIG. 200 is a perspective view of the design shown in FIG. 193 in use.

FIG. 201 is a perspective view of a twenty-sixth embodiment of my new design.

FIG. 202 is a front view of the design shown in FIG. 201.
FIG. 203 is a rear view of the design shown in FIG. 201.
FIG. 204 is a right-side view of the design shown in FIG. 201.

FIG. 205 is a left-side view of the design shown in FIG. 201.
FIG. 206 is a top view of the design shown in FIG. 201.
FIG. 207 is a bottom view of the design shown in FIG. 201;
and,

FIG. 208 is a perspective view of the design shown in FIG. 201 in use.

The mouth and teeth rendered in short broken lines in FIGS. 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104, 112, 120, 128, 136, 144, 152, 160, 168, 176, 184, 192, 200, and 208, illustrate environmental subject matter intended to assist in showing how the design appears when in use and forms no part of the claim. The short broken lines showing elements

of the orthodontic elastomeric ligature tie in the drawings illustrate features of the article of manufacture that form no part of the claimed design.

1 Claim, 130 Drawing Sheets

(58) Field of Classification Search

CPC A61C 7/28; A61C 7/30; A61C 13/275; A61C 13/267

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

D49,008 S * 5/1916 Benton D18/24
 D172,495 S * 6/1954 Dom D18/24
 3,052,027 A * 9/1962 Wallshein A61C 7/12
 433/22
 D194,170 S * 11/1962 Craw D18/24
 3,138,872 A * 6/1964 Lazarus A61C 7/12
 433/23
 D211,293 S * 6/1968 Devin, Jr. D18/24
 D221,187 S * 7/1971 Munzberg D18/24
 D290,040 S 5/1987 Kelly
 D302,588 S 8/1989 Jones
 D304,077 S 10/1989 Pospisil
 D315,957 S 4/1991 Kelly
 D340,523 S 10/1993 Bamgrover
 D383,844 S 9/1997 Kelly
 D388,818 S * 1/1998 Bajic D18/26
 D412,363 S 7/1999 Stevens
 D412,579 S 8/1999 Stevens
 D412,988 S 8/1999 Stevens
 D447,804 S * 9/2001 Stevens D24/180
 D532,036 S * 11/2006 Munch D18/24
 D606,658 S 12/2009 Blancoacevedo
 D648,030 S 11/2011 Bryant et al.
 D660,435 S 5/2012 Smith
 D660,436 S 5/2012 Dupray
 D660,968 S 5/2012 Smith
 D687,554 S 8/2013 Kooiman
 D717,870 S * 11/2014 Wamble D20/12
 D725,279 S 3/2015 Markova
 D747,808 S 1/2016 Ji
 D766,444 S 9/2016 Stevens
 D804,037 S 11/2017 Payne
 D809,145 S 1/2018 Wigal
 D820,457 S 6/2018 Sommer
 10,028,806 B2 7/2018 Wigal
 10,034,724 B2 7/2018 Wigal
 D830,558 S * 10/2018 Wigal D24/180
 D832,446 S 10/2018 Wigal
 D833,017 S * 11/2018 Wigal D24/180
 D833,019 S * 11/2018 Wigal D24/180
 D833,020 S 11/2018 Wigal
 D938,596 S 12/2021 Hung
 2003/0064342 A1 * 4/2003 Fukutomi A61C 7/141
 433/8

2013/0130189 A1* 5/2013 Roncone A61C 7/30
 433/11
 2014/0205962 A1* 7/2014 Damon A61C 7/14
 433/10
 2017/0000587 A1* 1/2017 Wigal A44C 15/007
 2017/0065376 A1* 3/2017 Nazeck A61C 7/287
 2017/0281317 A1* 10/2017 Bukhary A61C 7/146
 2018/0214251 A1* 8/2018 Aronen A61C 7/28

FOREIGN PATENT DOCUMENTS

CN 304902246 11/2018
 CN 305776870 5/2020
 CN 306323446 2/2021
 CN 306384995 3/2021
 CN 306393386 3/2021
 CN 306605471 6/2021
 CN 306909376 10/2021
 CN 307005501 12/2021
 EM 002594721 2/2015
 JP D1461486 2/2013
 JP D1517556 2/2015
 KR 300406571 3/2006
 KR 300460480 8/2007
 KR 300473576 12/2007
 KR 300586799 6/2009
 KR 300769077 11/2014
 KR 300833892 1/2016
 KR 300838680 2/2016
 KR 300913073 7/2017
 KR 300913074 7/2017
 KR 300946505 3/2018
 KR 300952334 4/2018
 KR 300985552 12/2018
 KR 301026023 10/2019
 KR 301057290 5/2020
 KR 301071763 8/2020
 KR 301071764 8/2020
 KR 301084385 11/2020
 KR 301112771 6/2021
 KR 301131062 10/2021

OTHER PUBLICATIONS

Number Fridge Magnets, salon.com,tineye, date published Jun. 23, 2014, date retrieved Sep 12, 2022—29839818—<https://tineye.com/search/cf4bb6ff55b029665d1f511239d9aa2fa0742928?sort=score&order=desc&page=2> (Year: 2014).*

CHUCHIK ABC Magnetic Number Set, Amazon.com, date reviewed Dec. 29, 2019,date retrieved Sep. 12, 2022—29839818—https://www.amazon.com/CHUCHIK-Magnetic-Numbers-Set-Numbers-5-colors/product-reviews/B07T1C7PF4/ref=cm_cr_getr_d_paging_btm_next_5?ie=UTF8&reviewerType=all_reviews&sortBy=recent&pageNumber=5 (Year: 2019).*

Mouth Grill Letters, alibaba.com,tineye, date published Aug. 30, 2020—date retrieved Sep. 12, 2022—29839818—<https://tineye.com/search/e07a69b95e9c7add80251e49942847471cfa8d2f?sort=score&order=desc&page=1> (Year: 2022).*

* cited by examiner

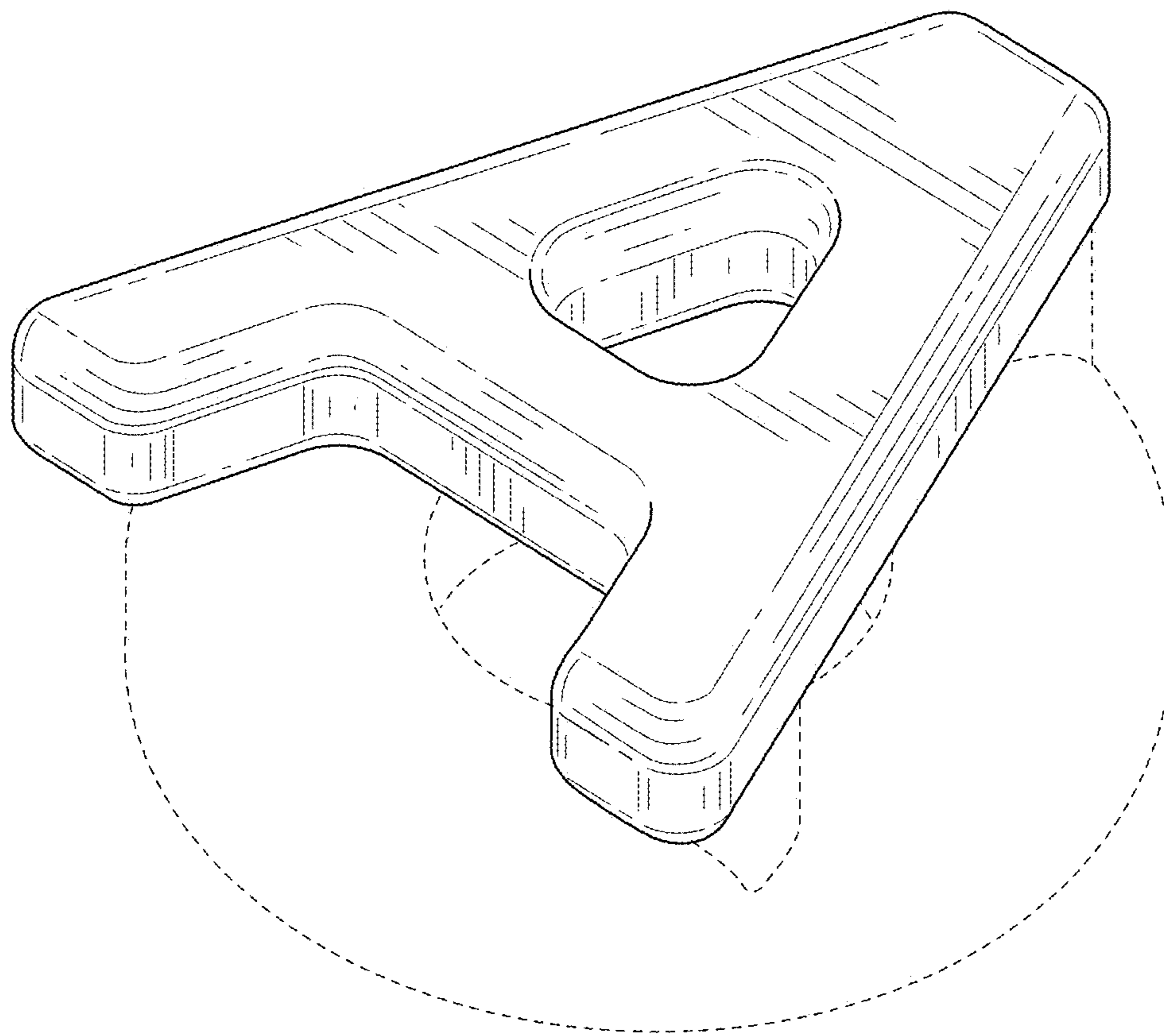


FIG. 1

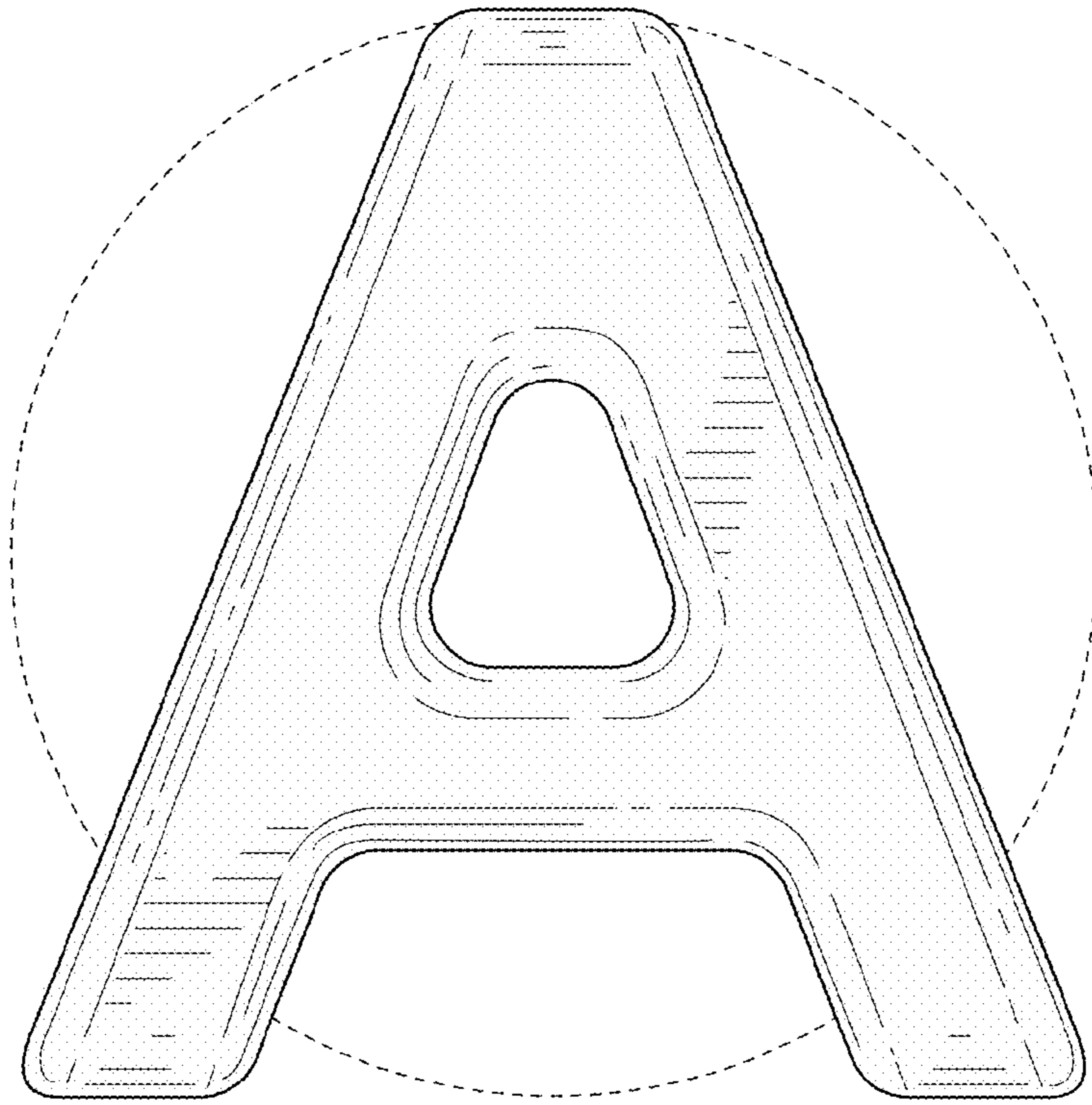


FIG. 2

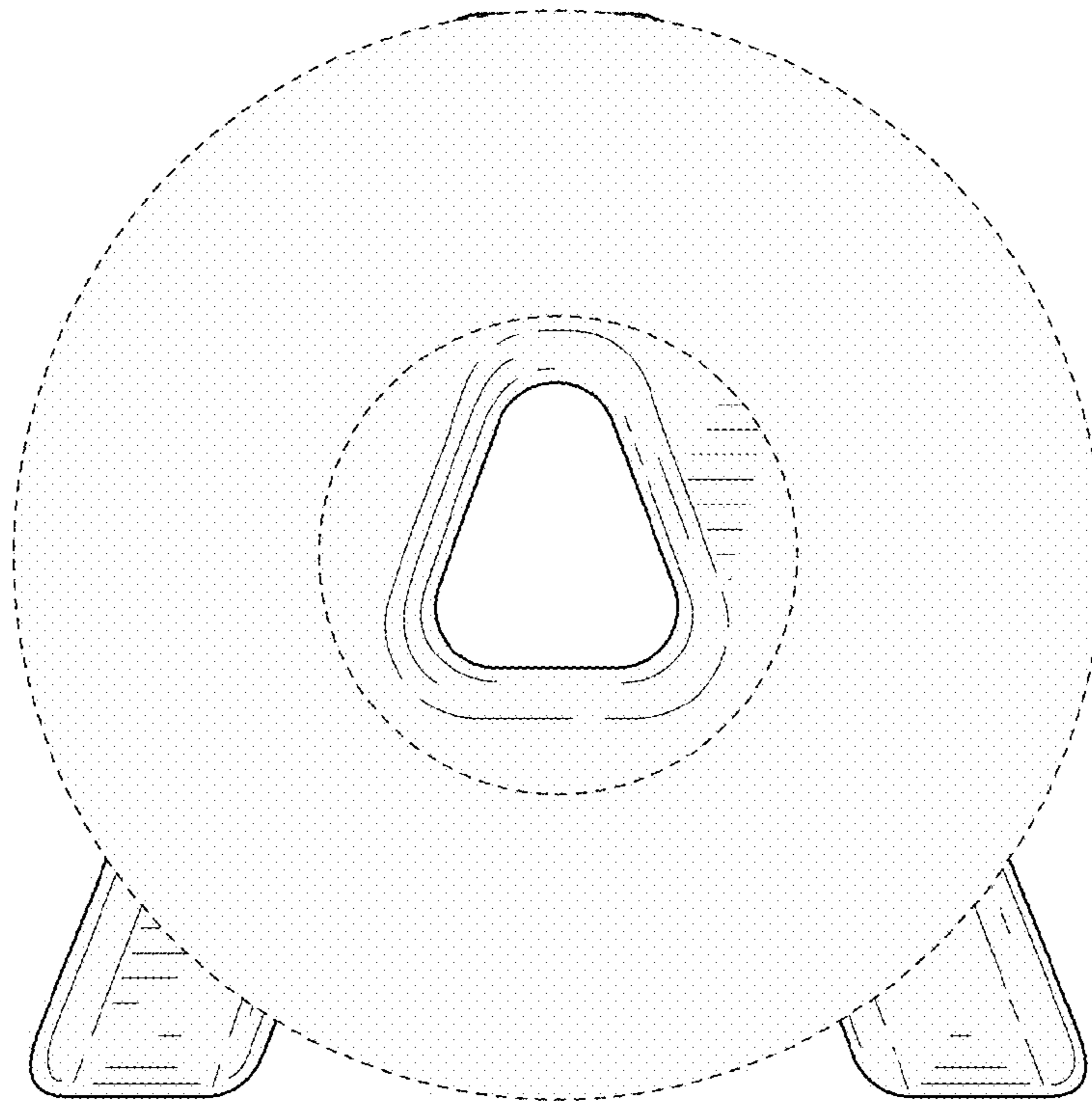


FIG. 3

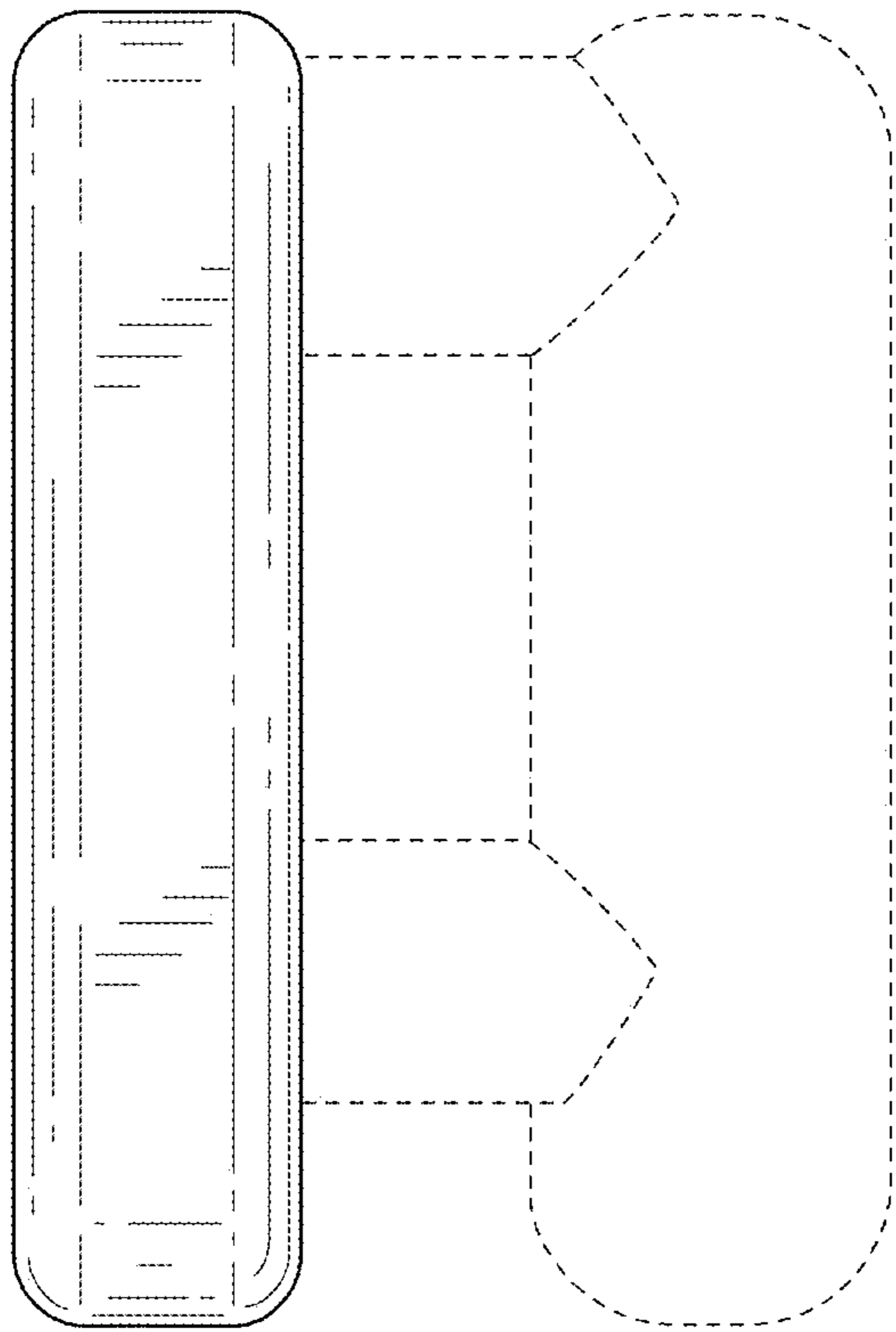


FIG. 4

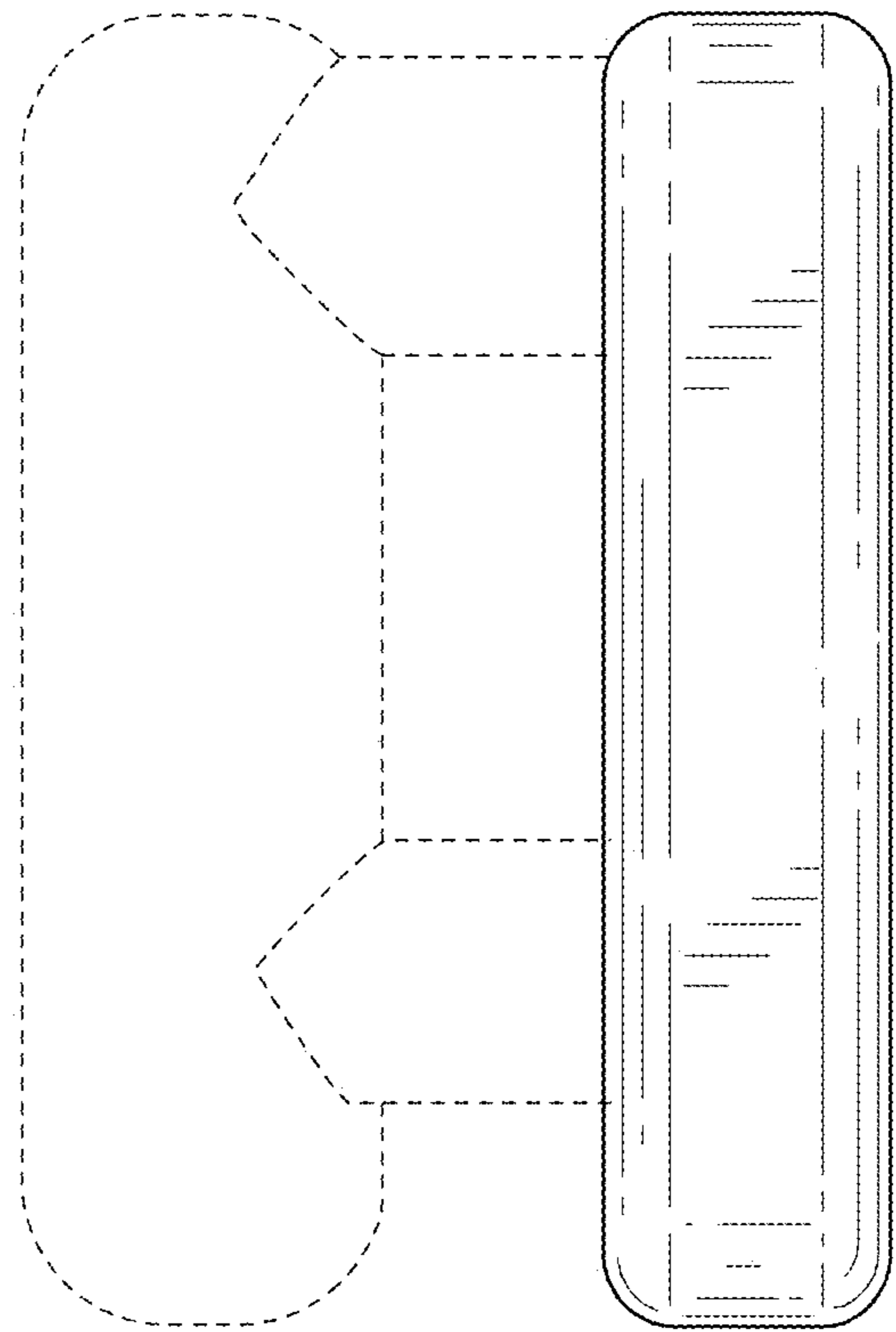


FIG. 5

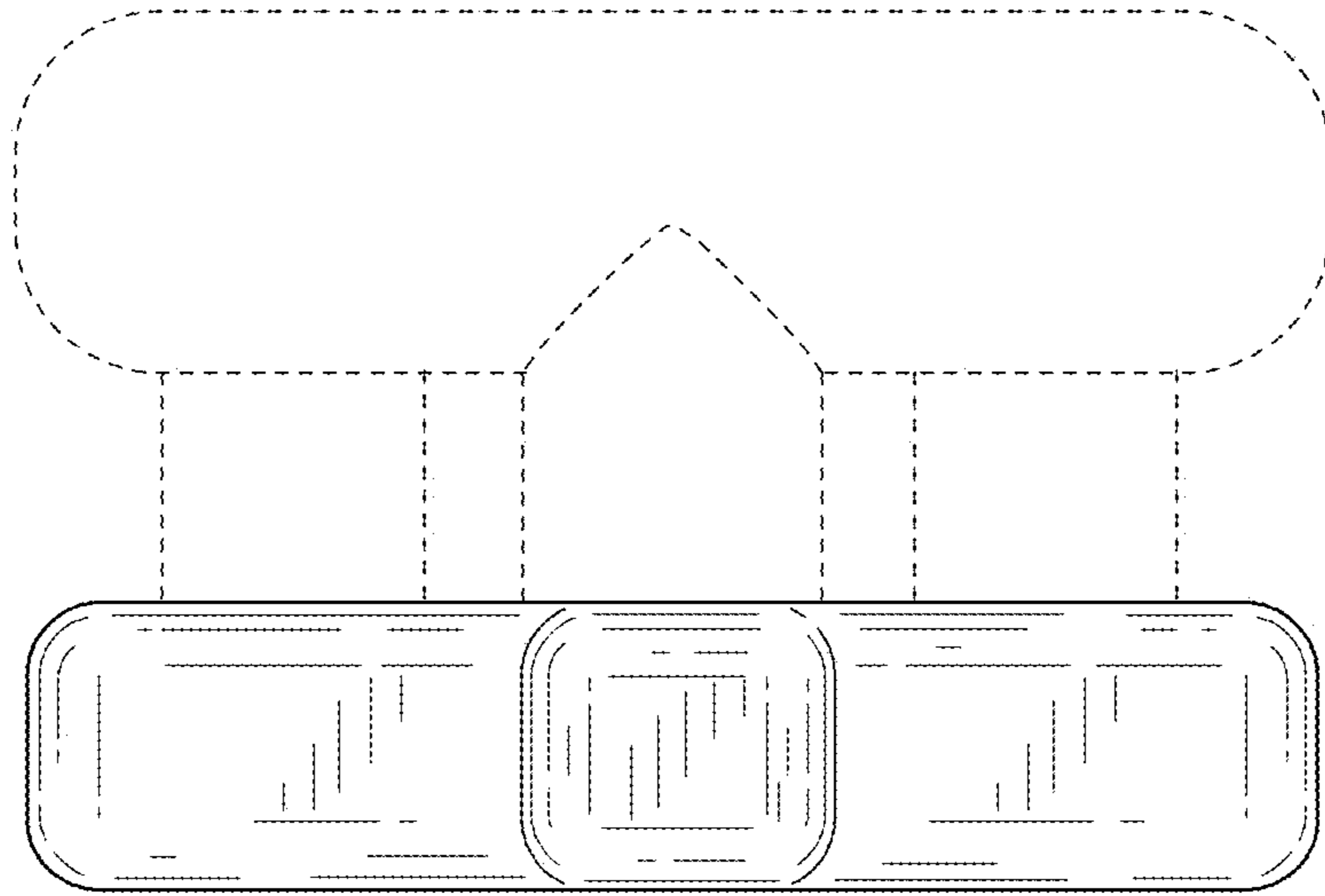


FIG. 6

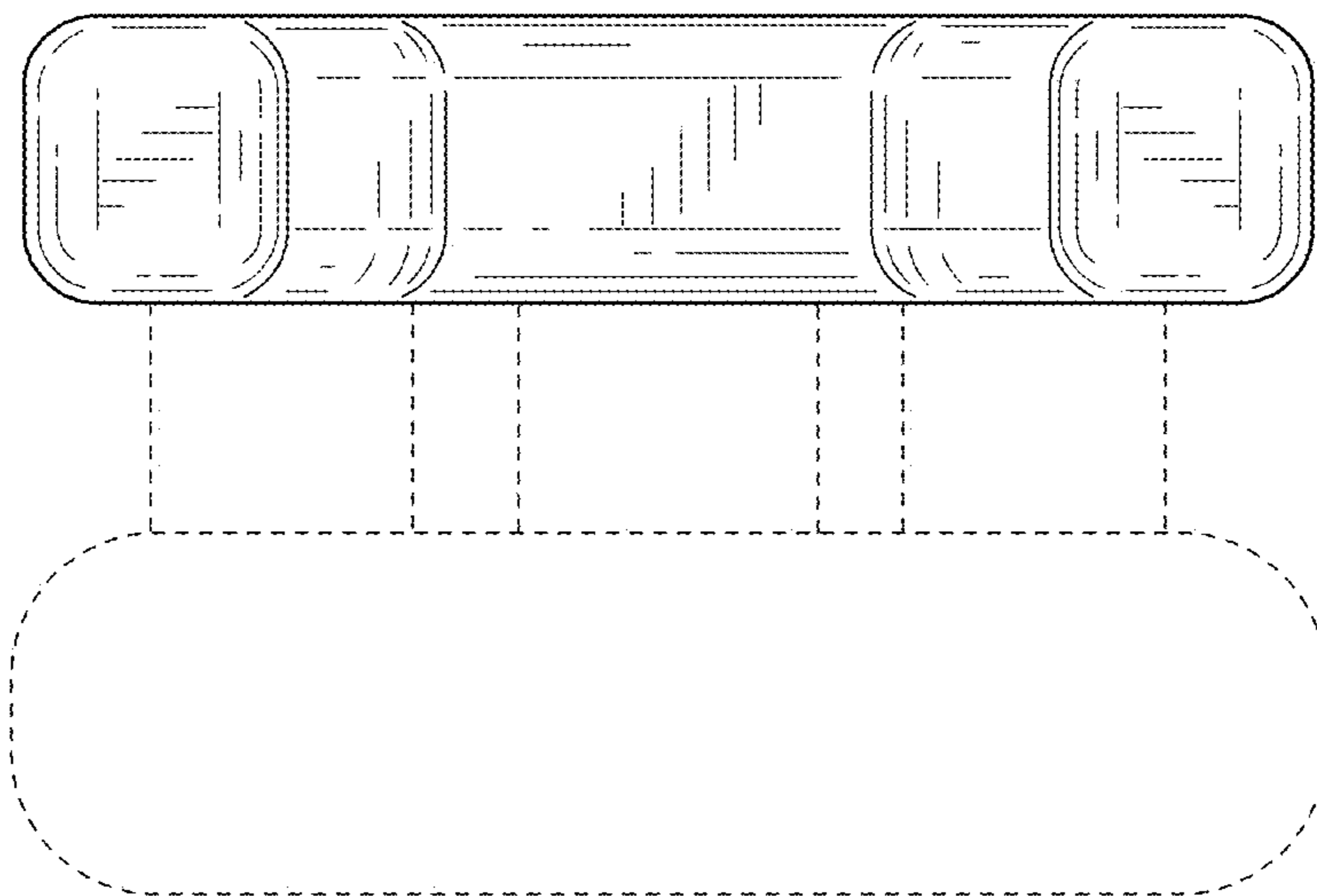


FIG. 7

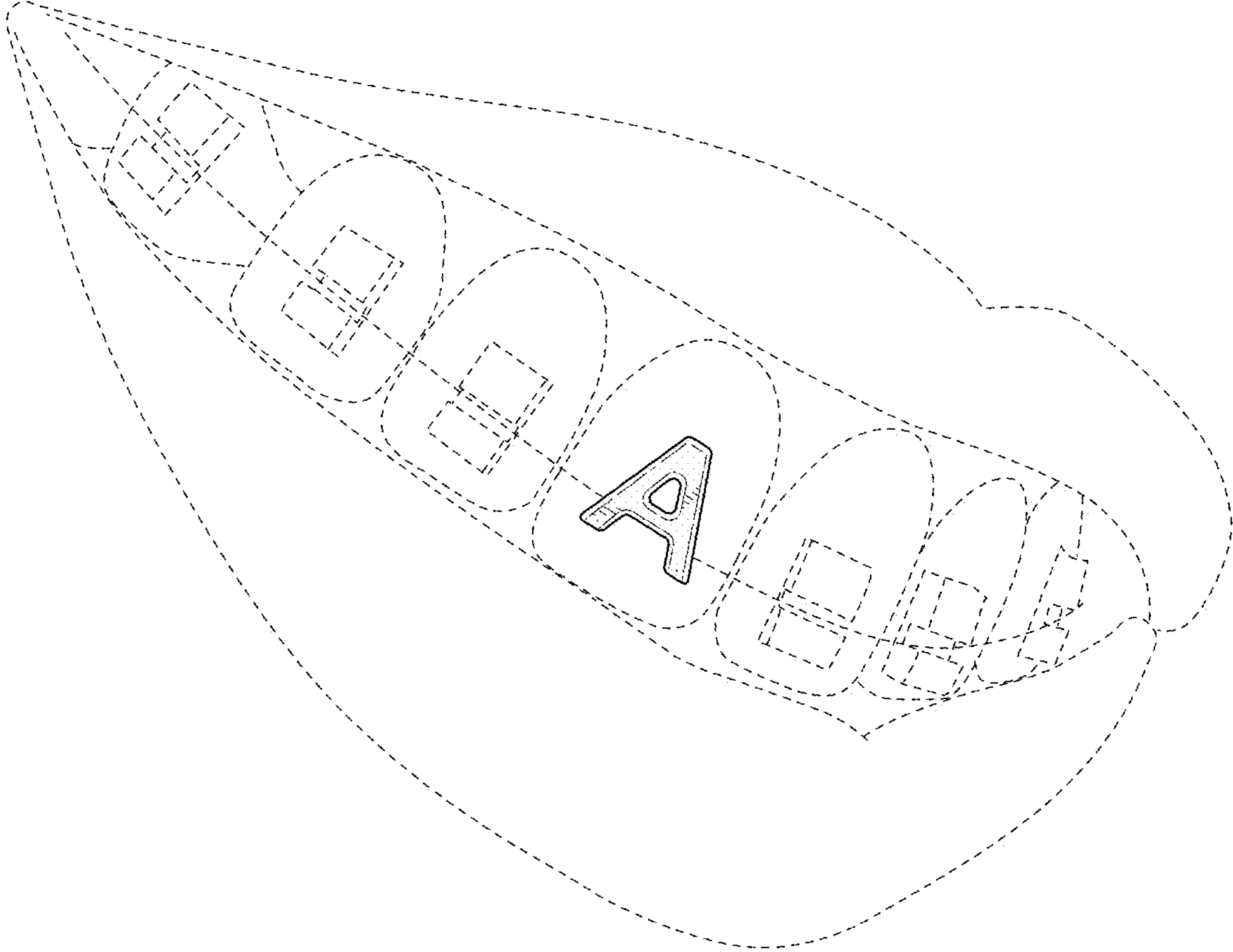


FIG. 8

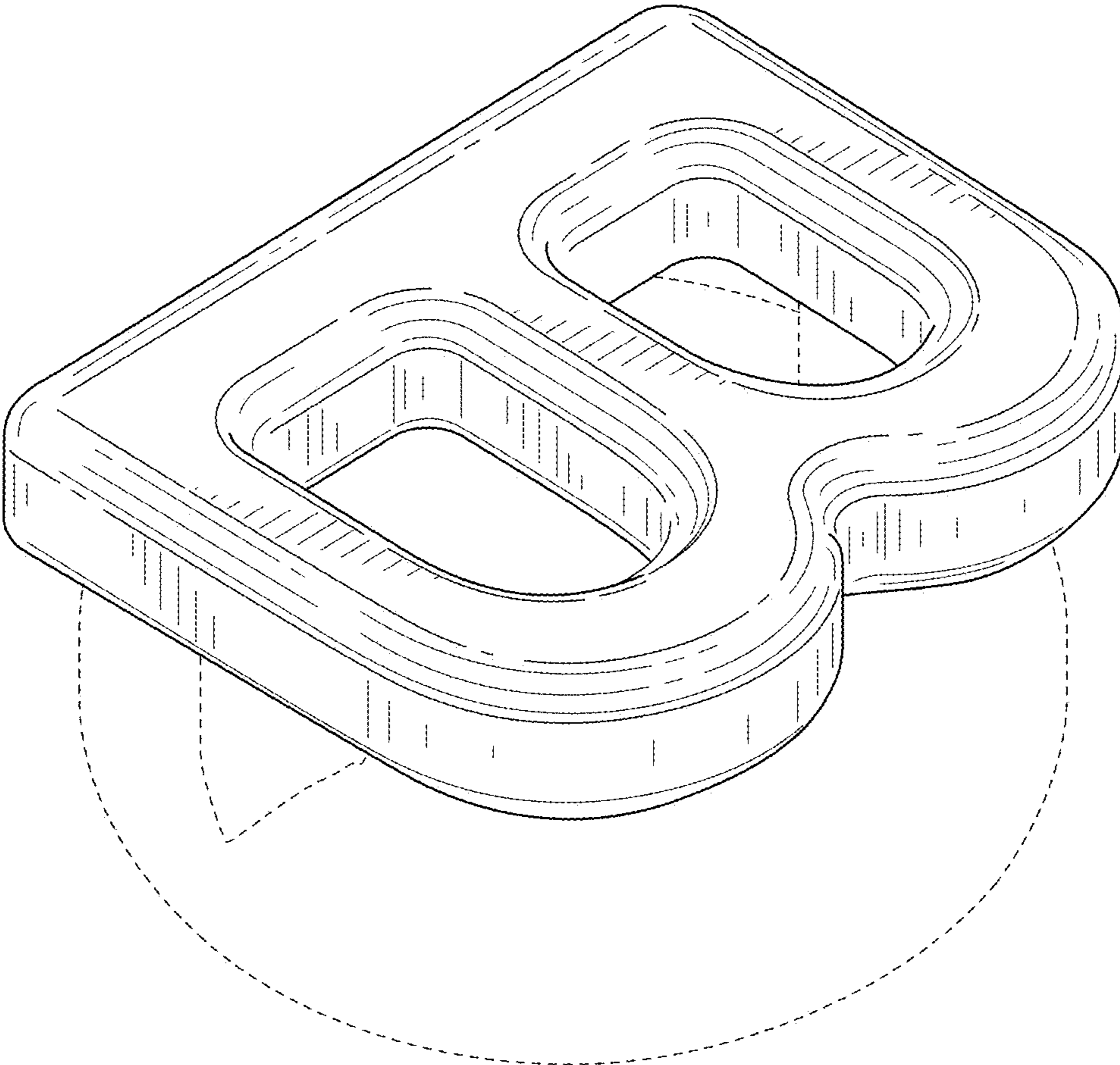


FIG. 9

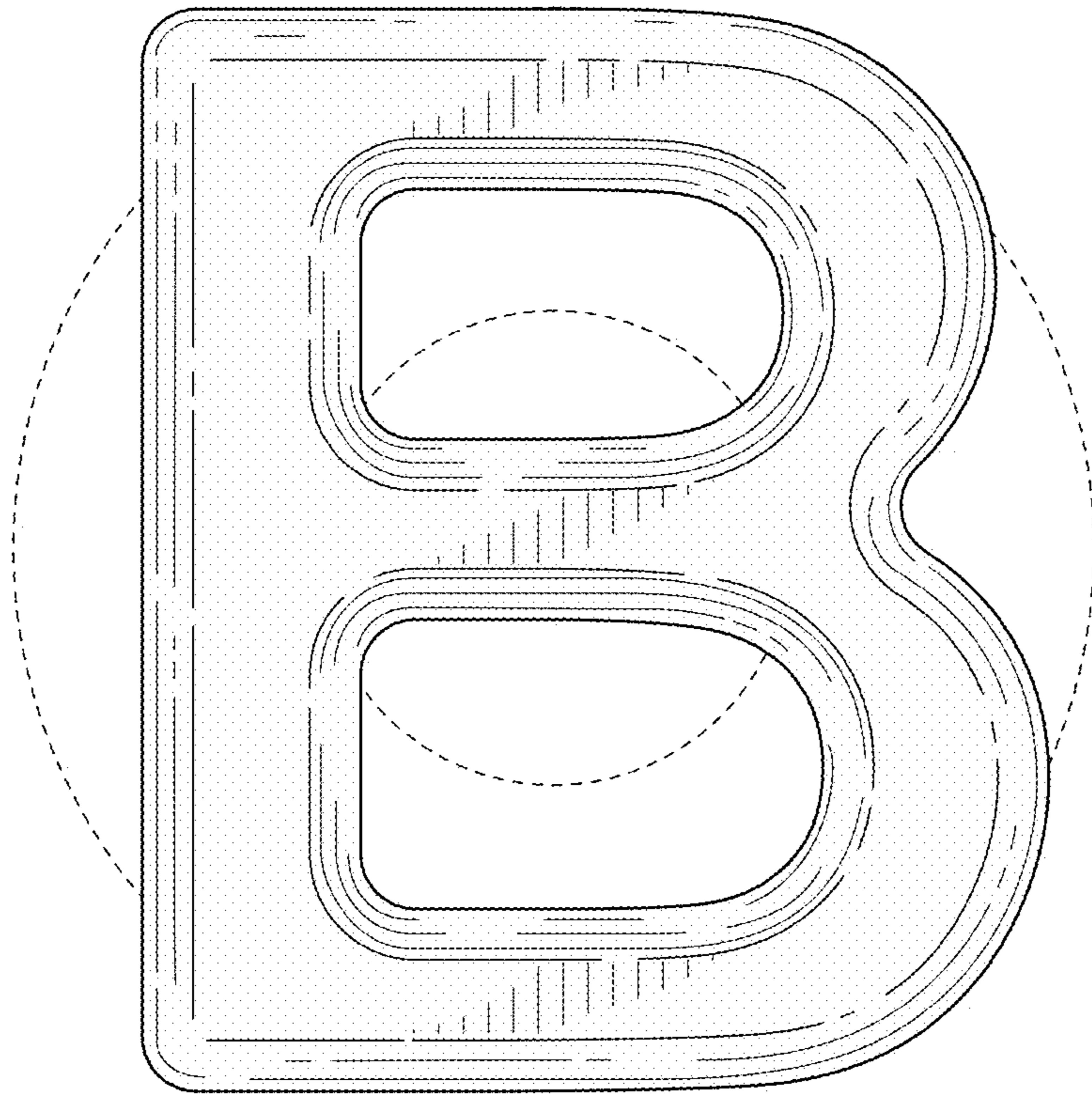


FIG. 10

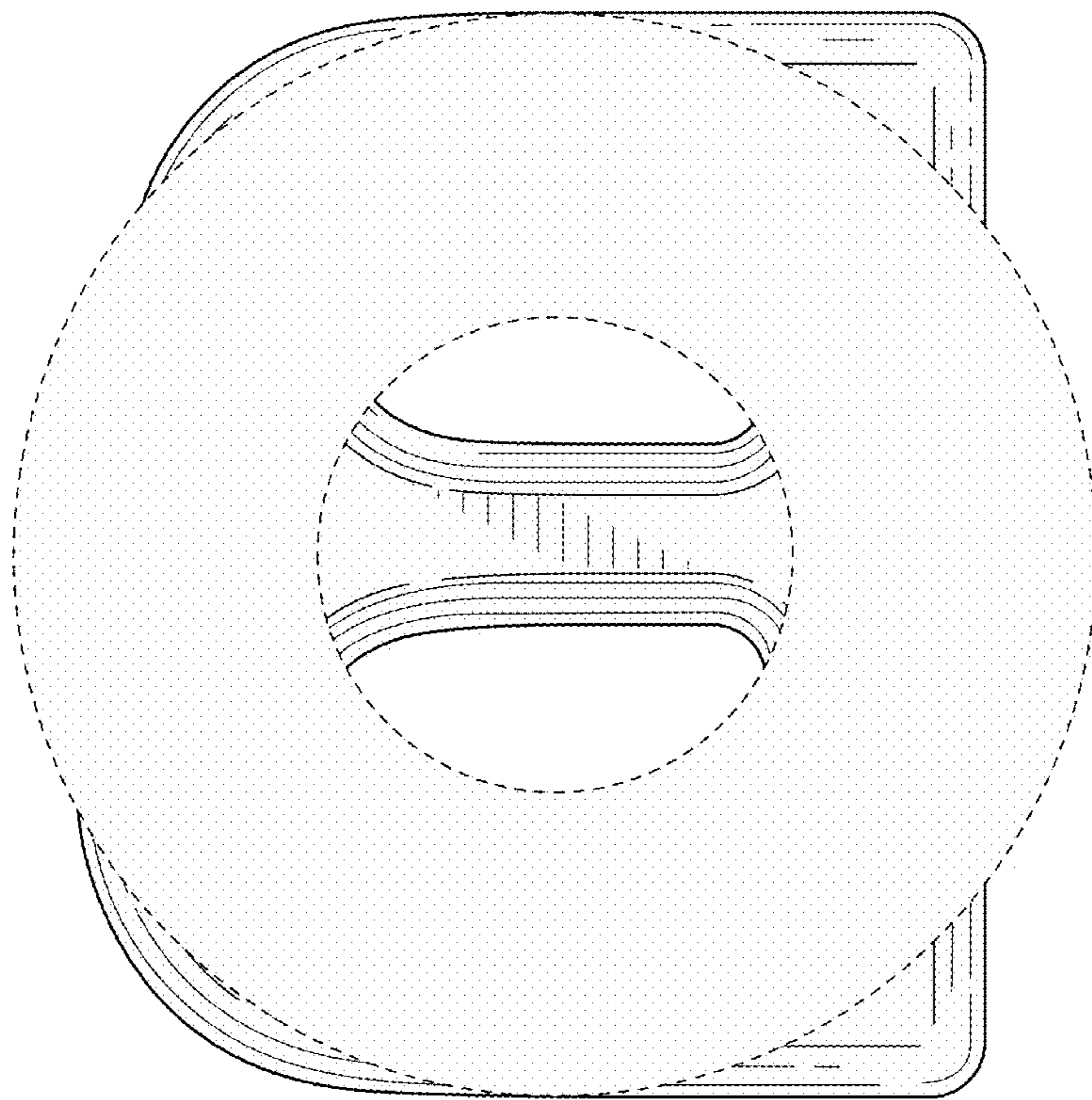


FIG. 11

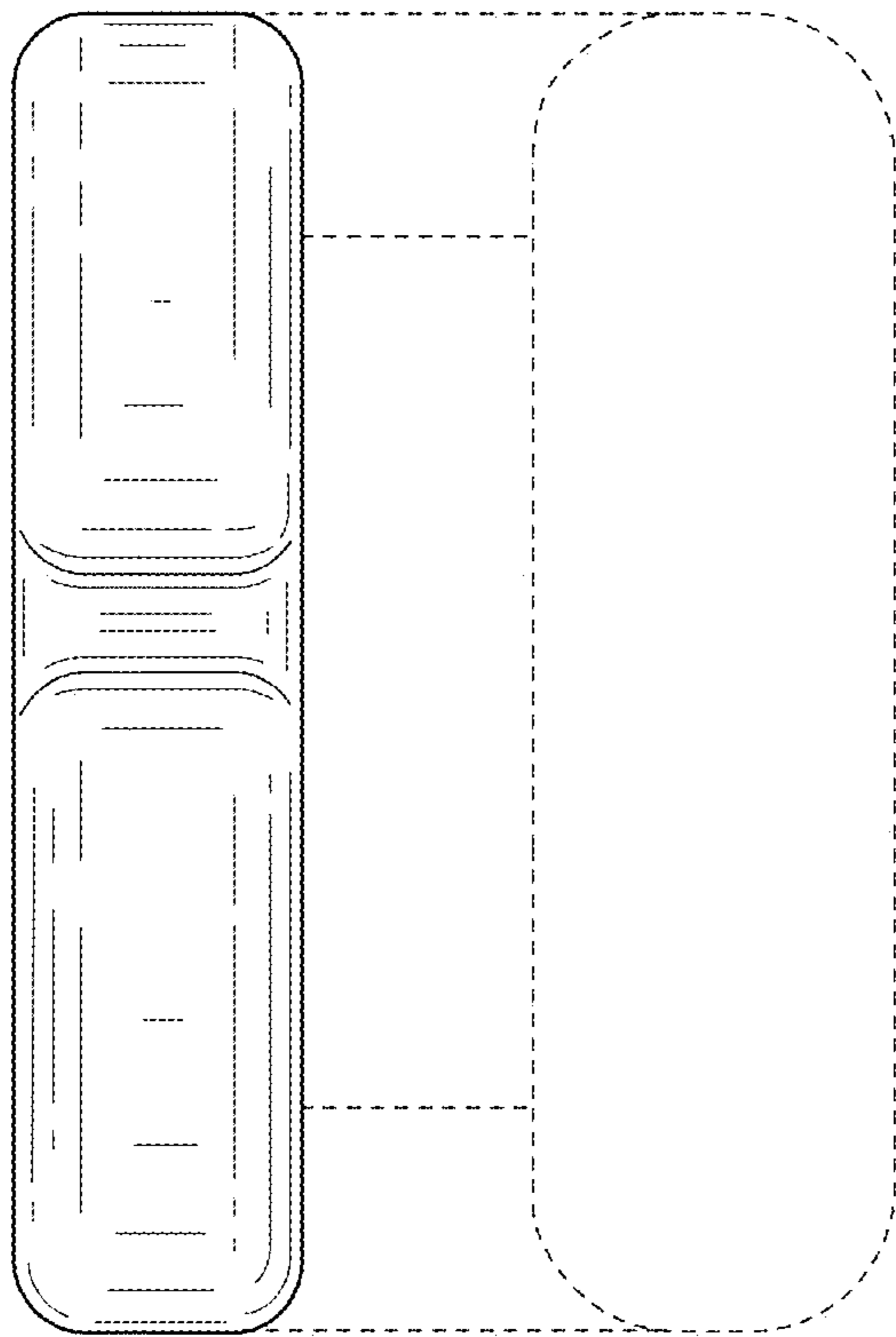


FIG. 12

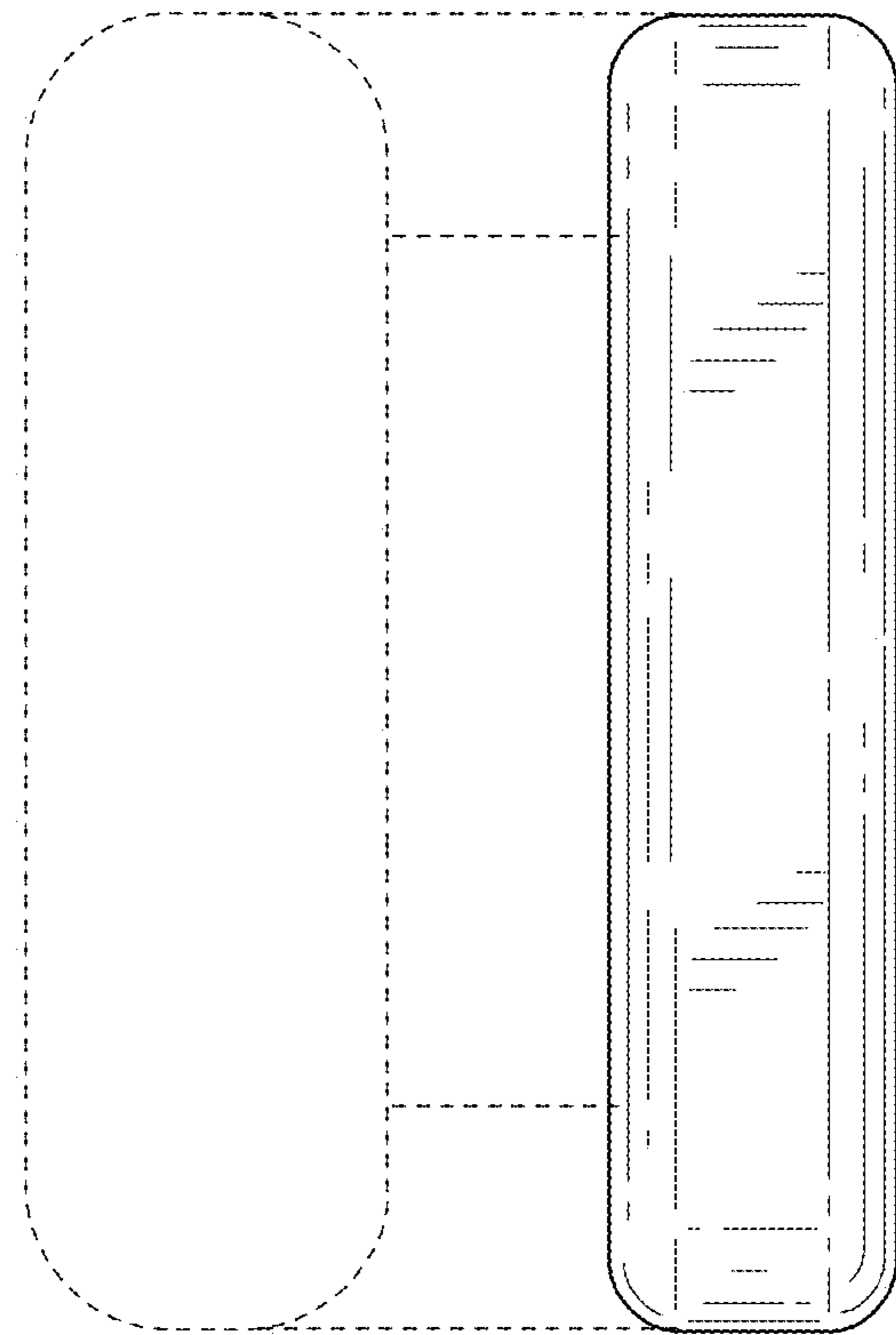


FIG. 13

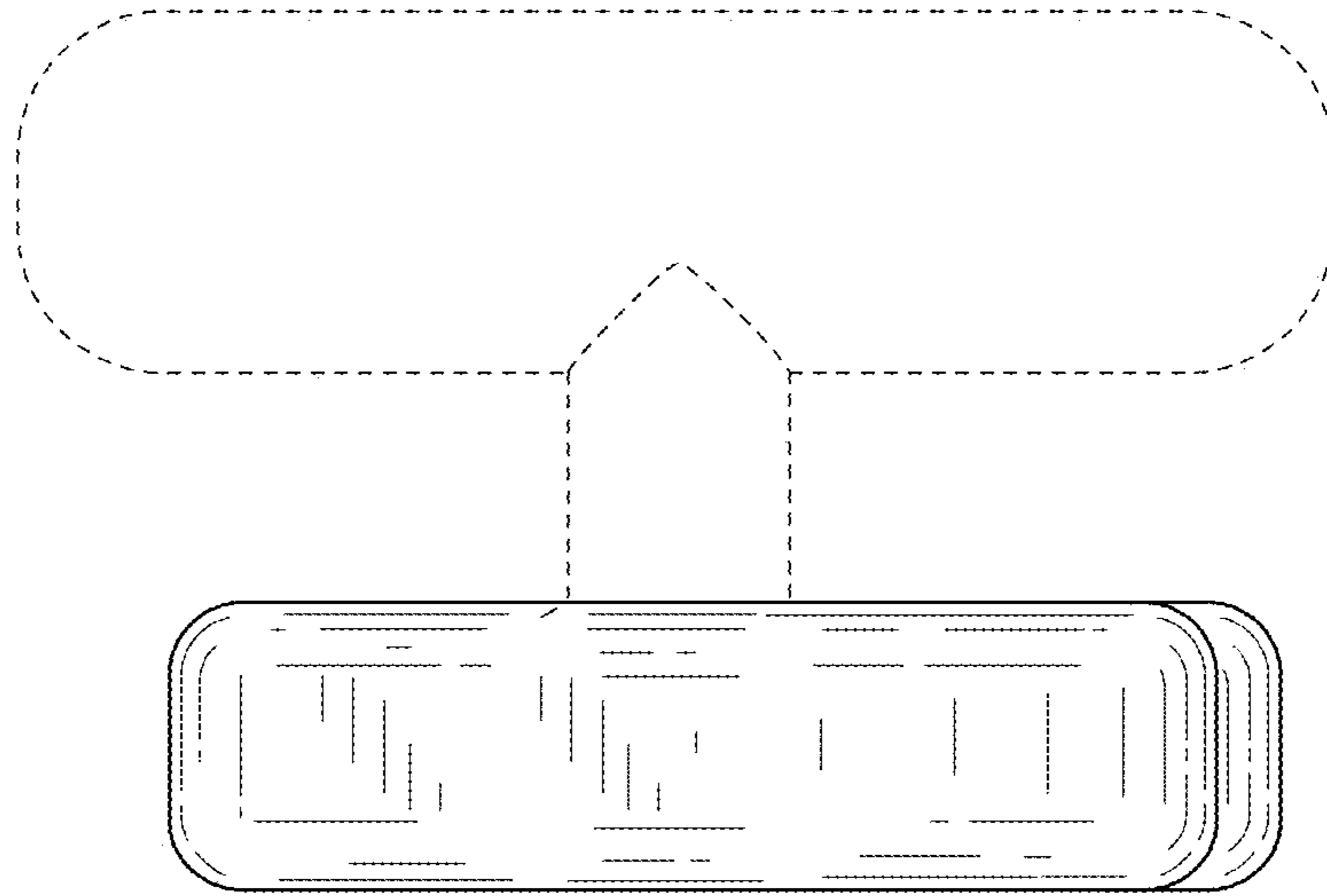


FIG. 14

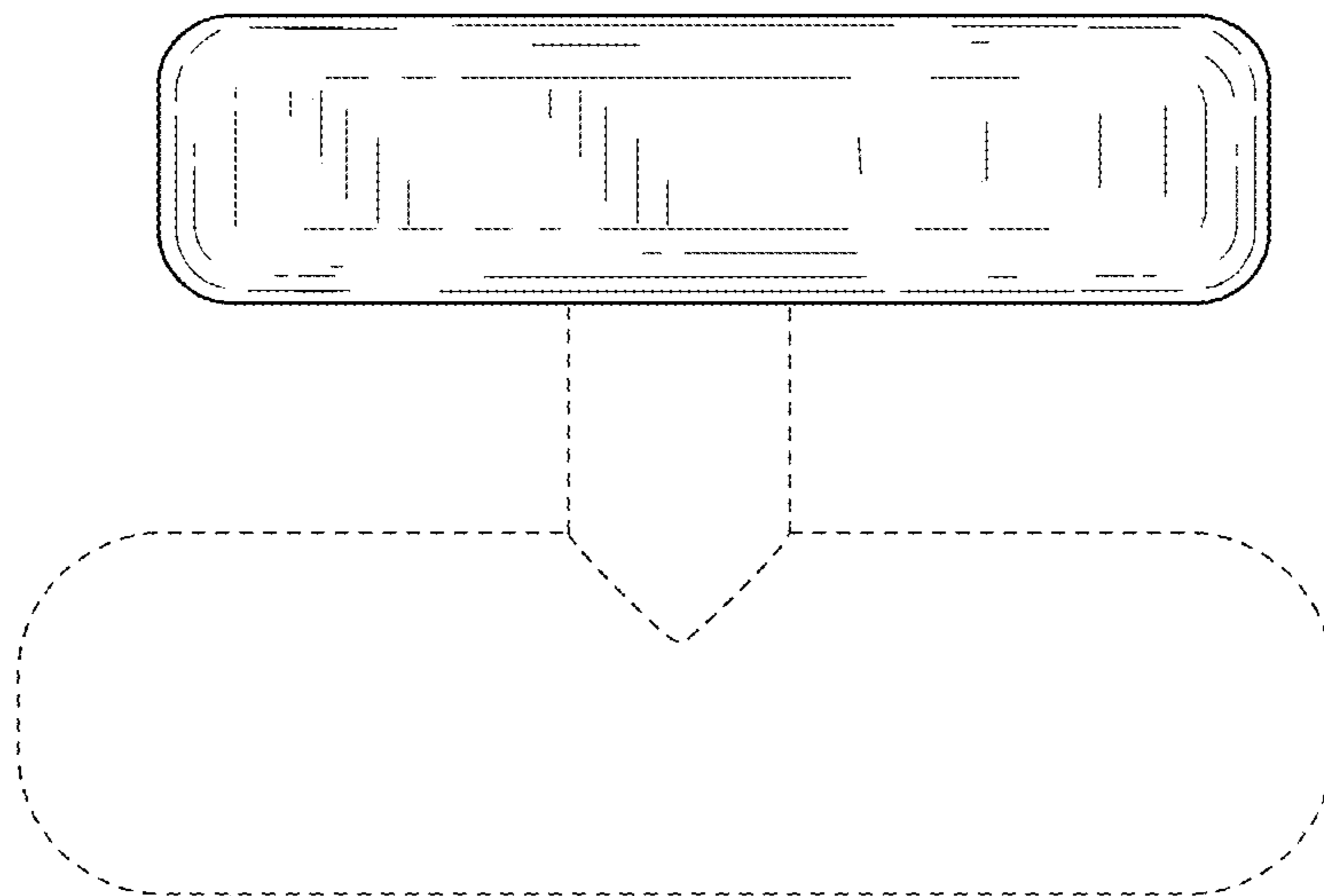


FIG. 15

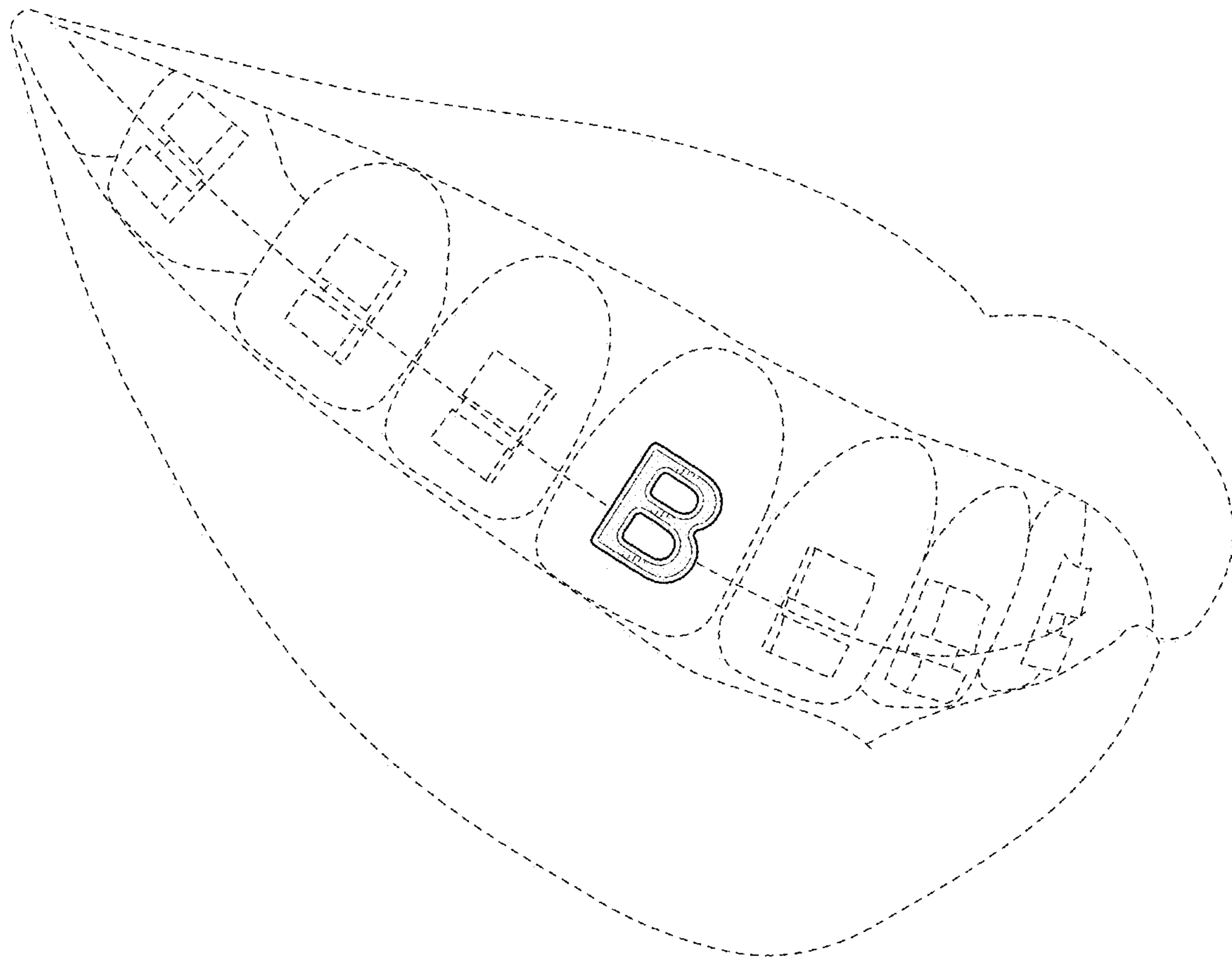


FIG. 16

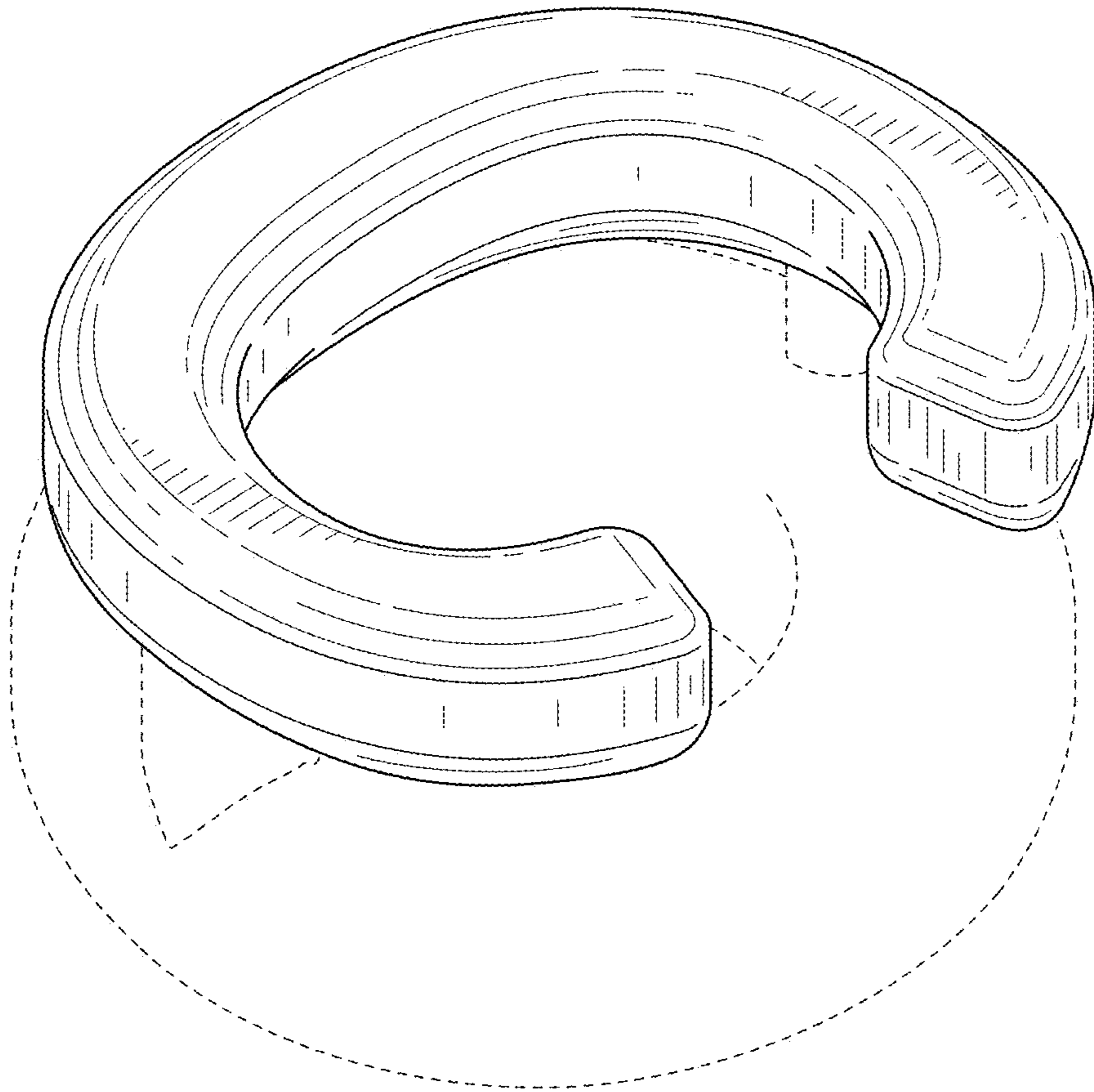


FIG. 17

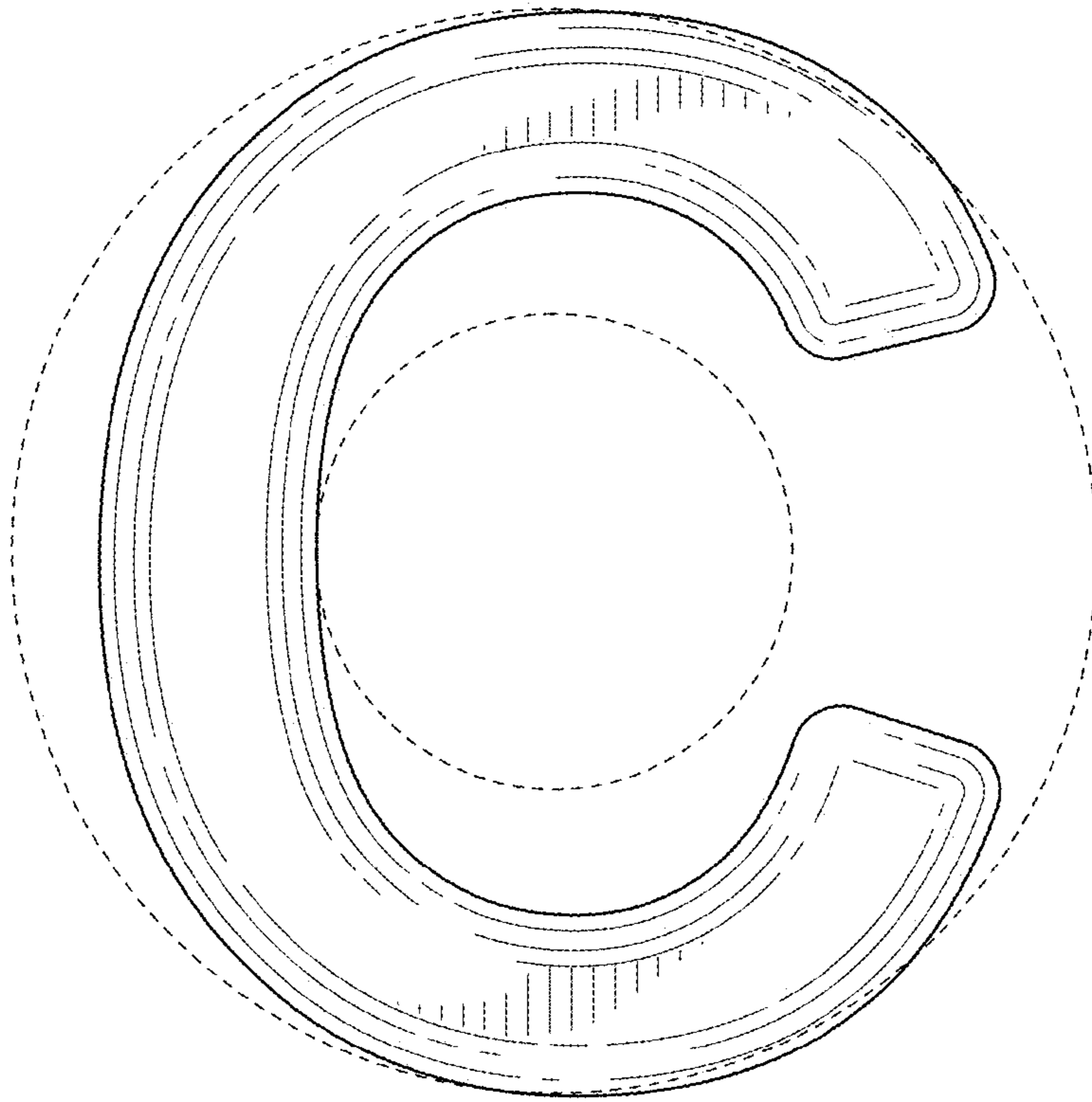


FIG. 18

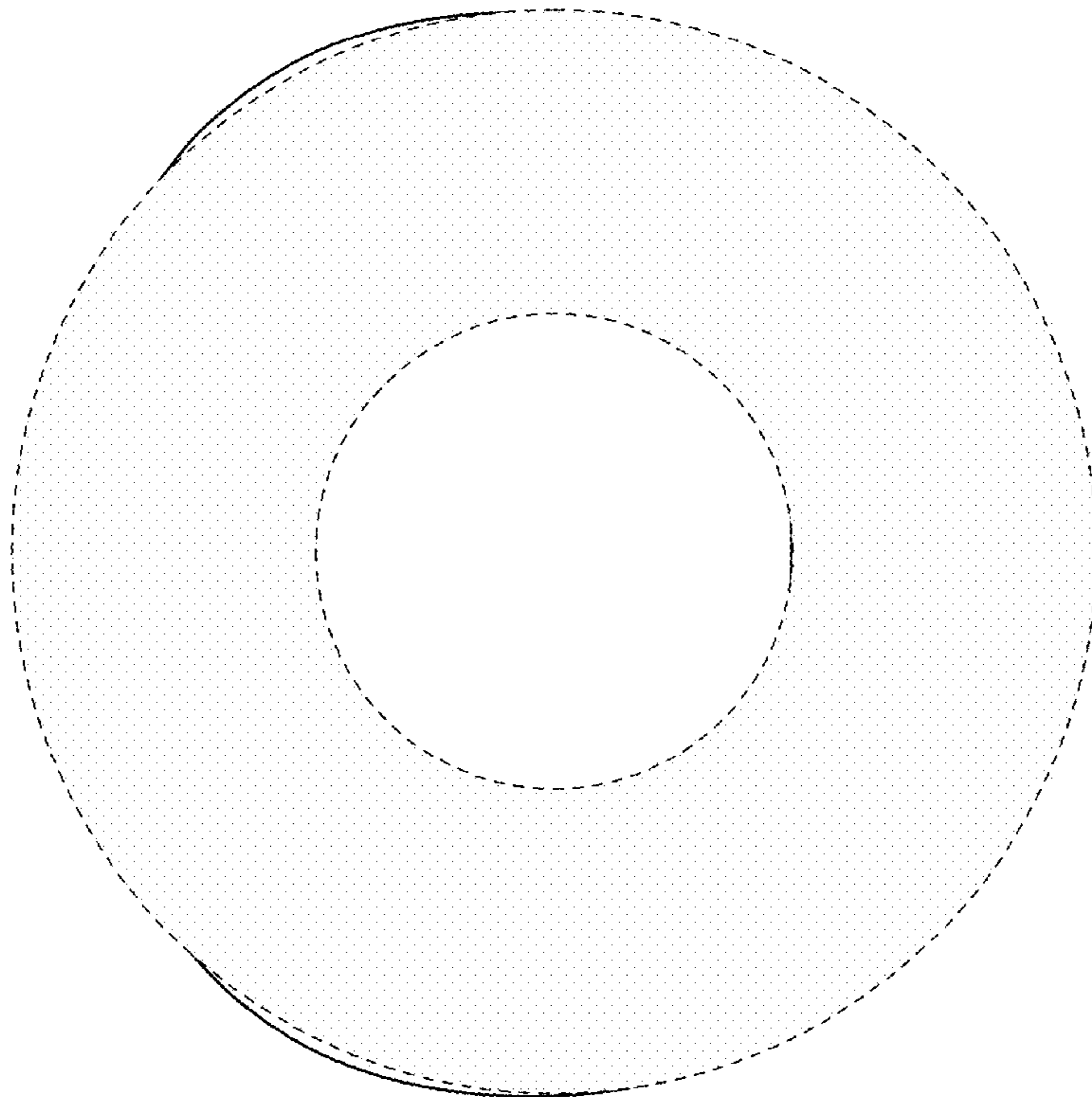


FIG. 19

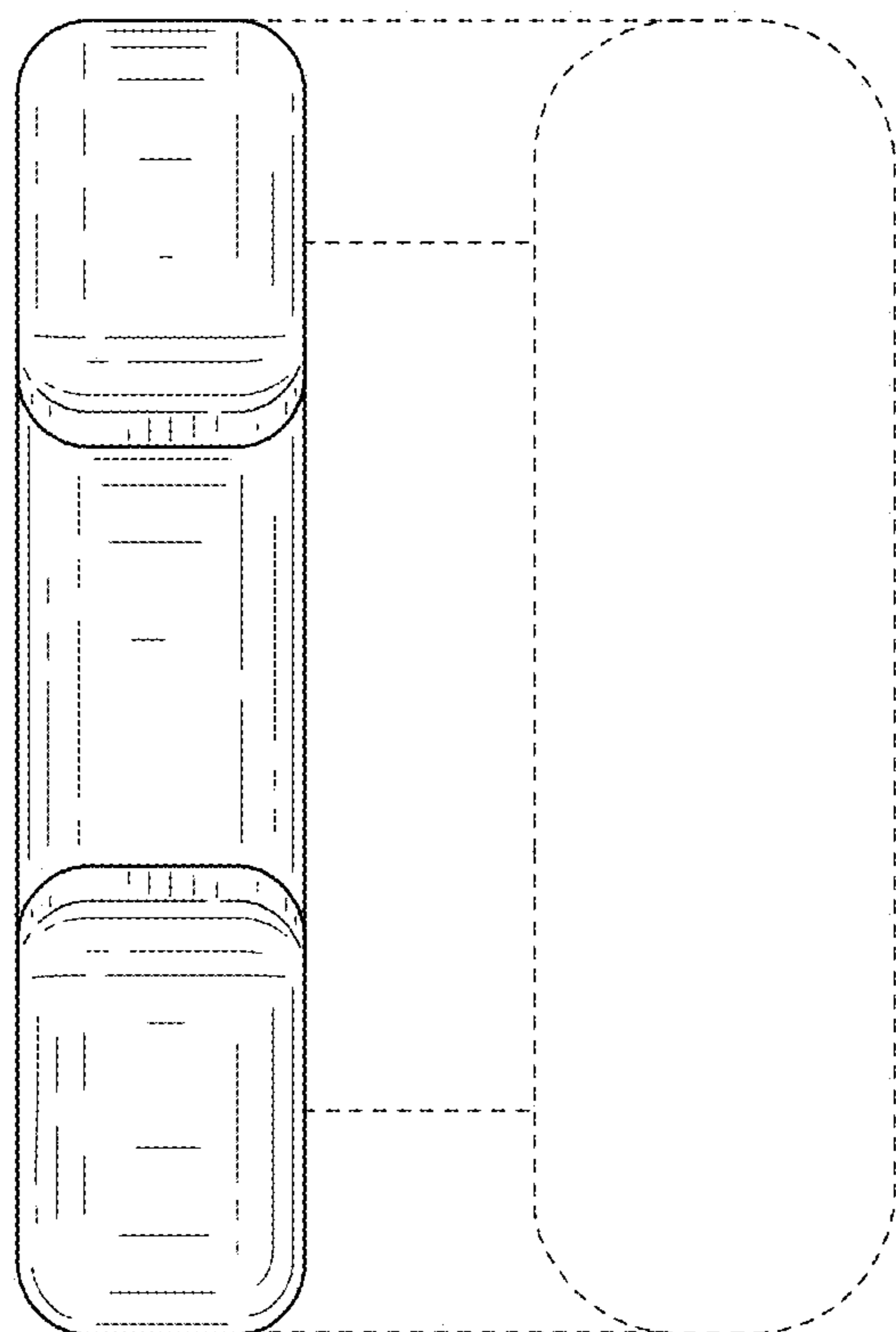


FIG. 20

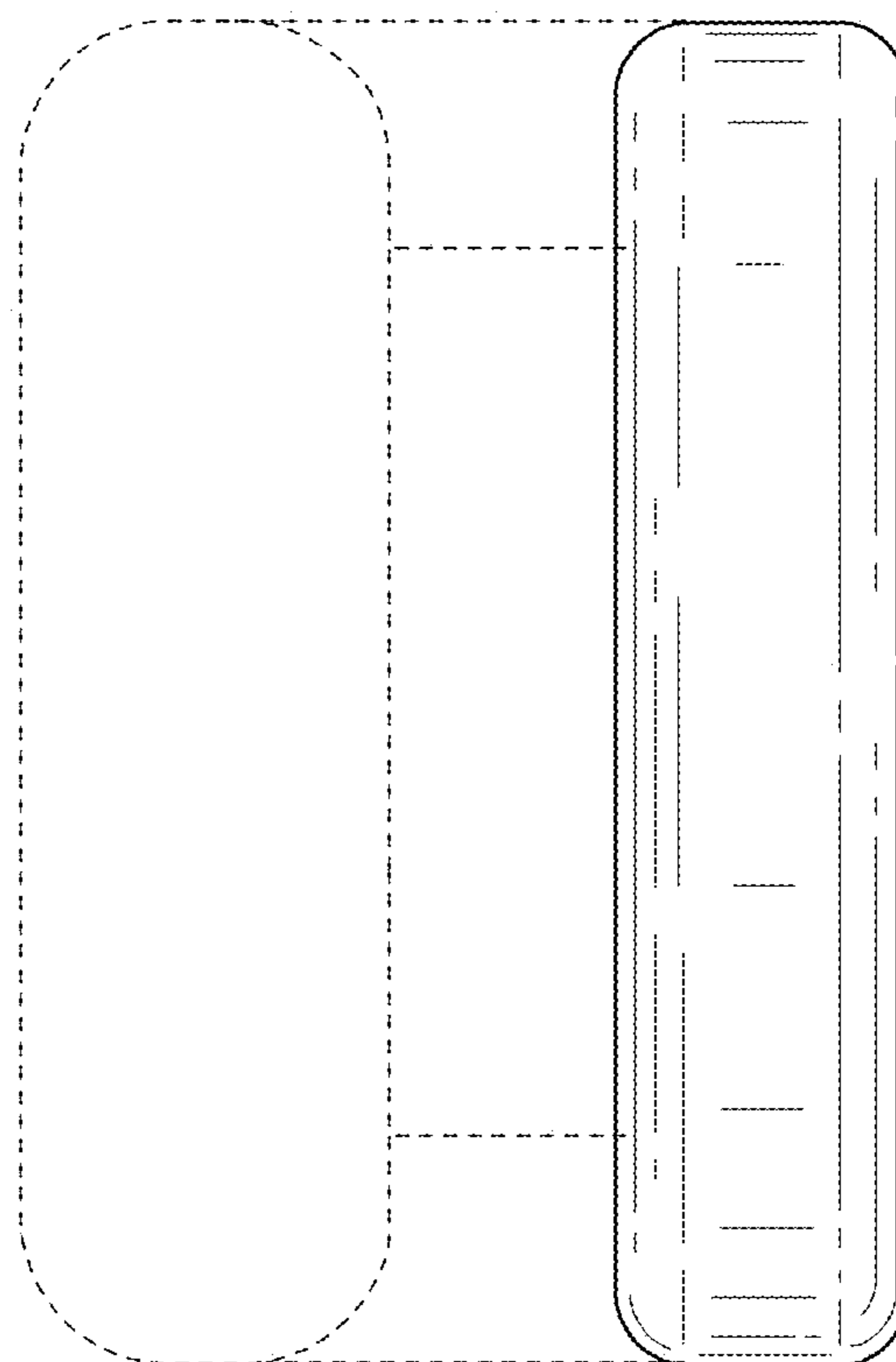


FIG. 21

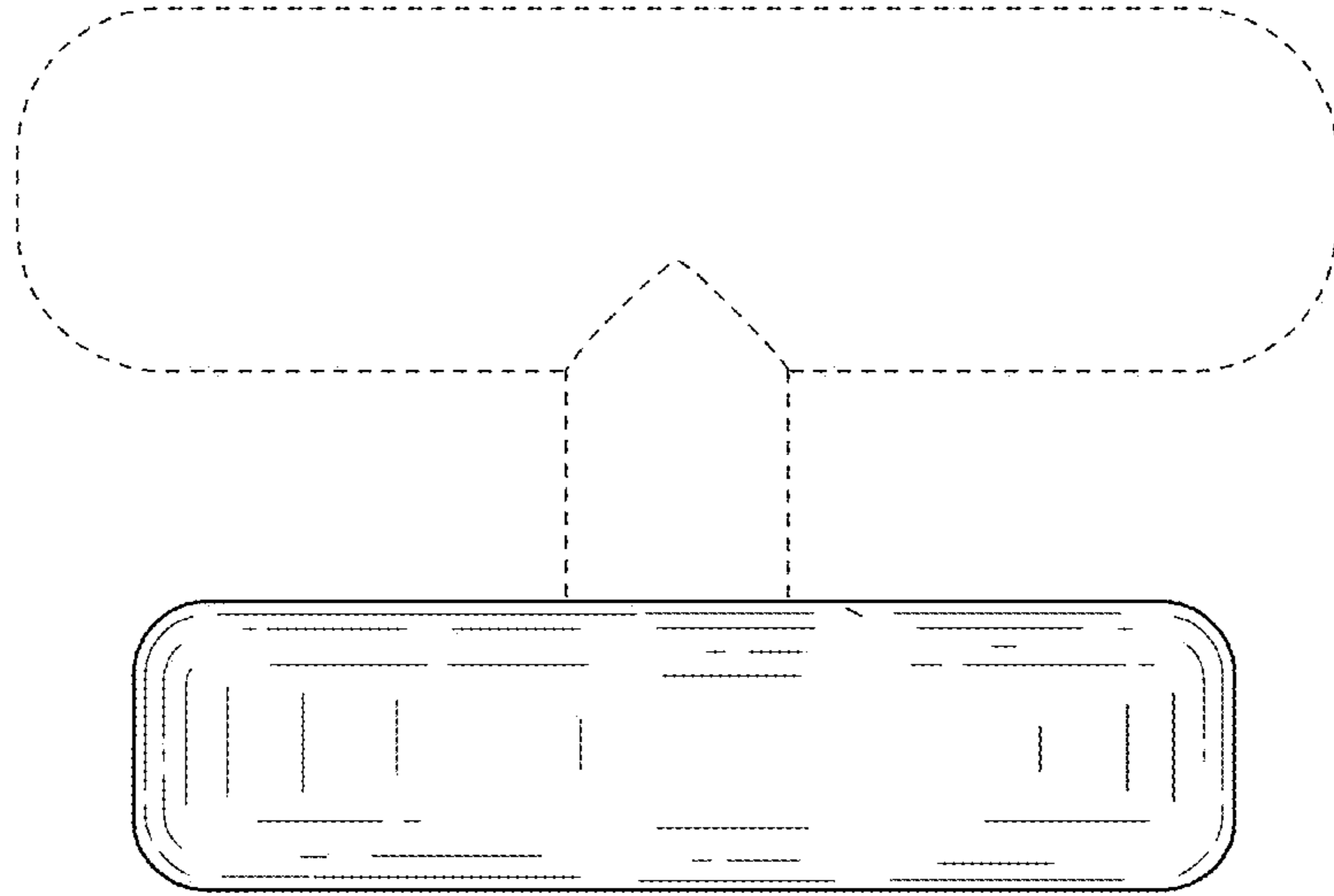


FIG. 22

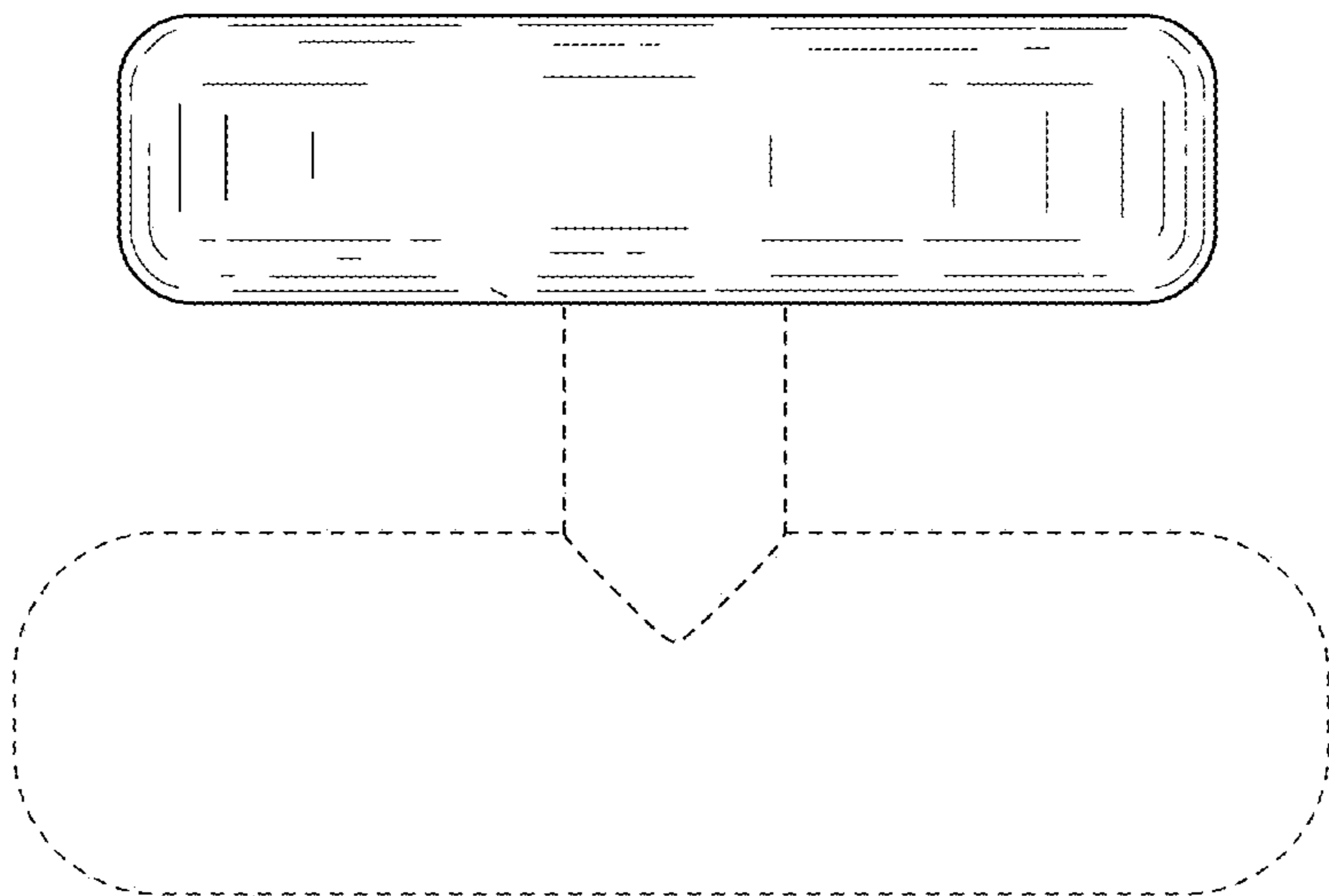


FIG. 23

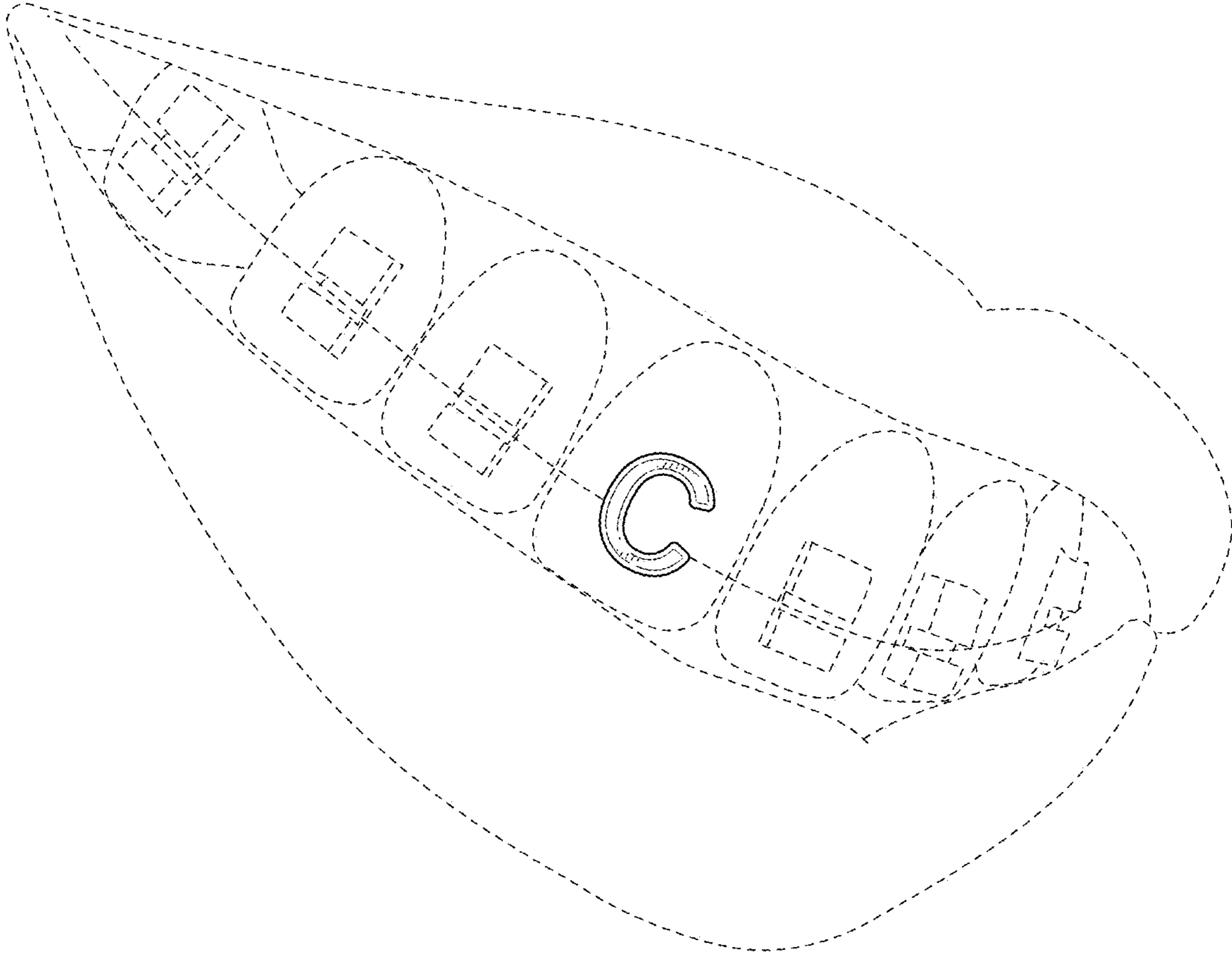


FIG. 24

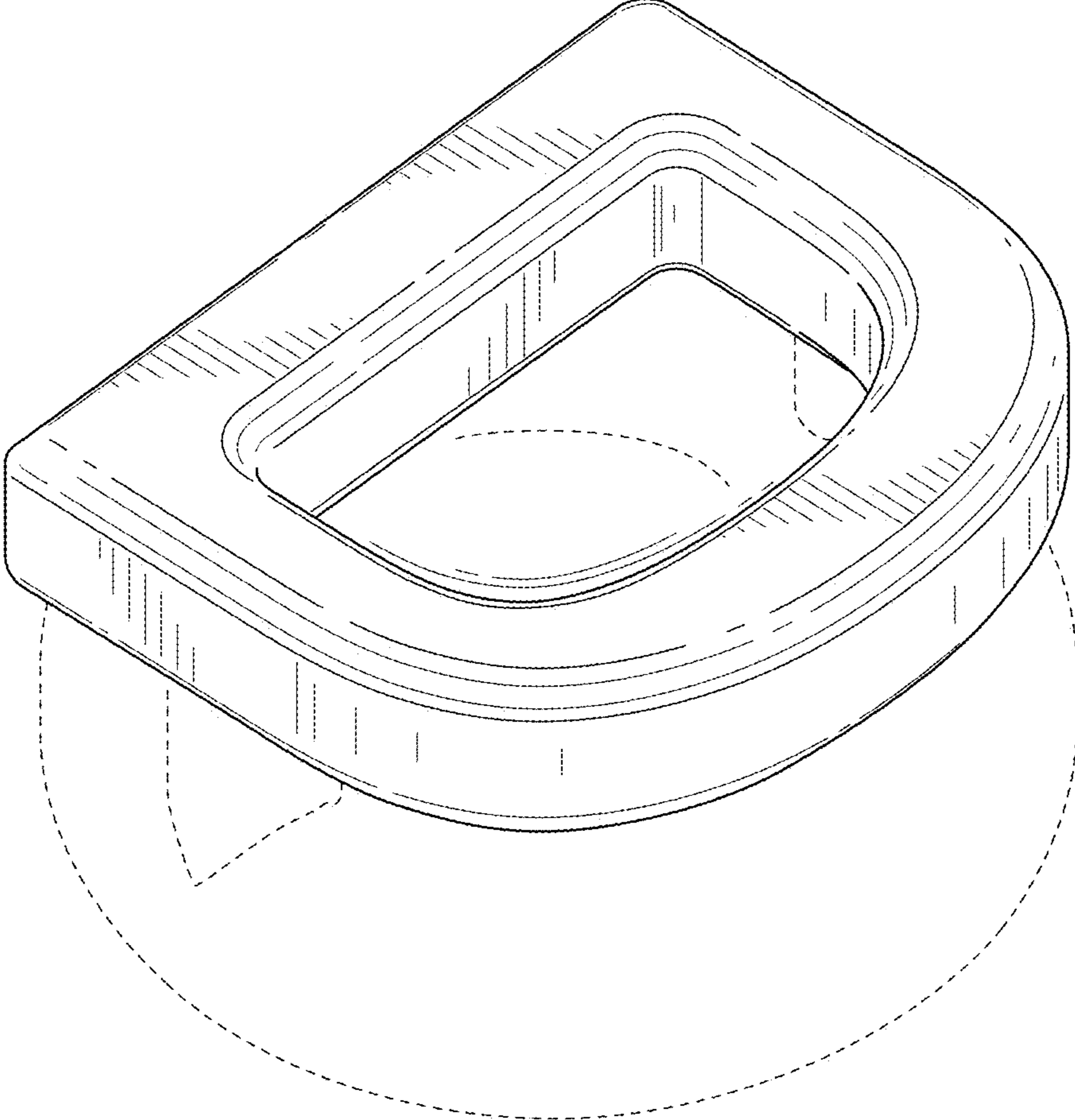


FIG. 25

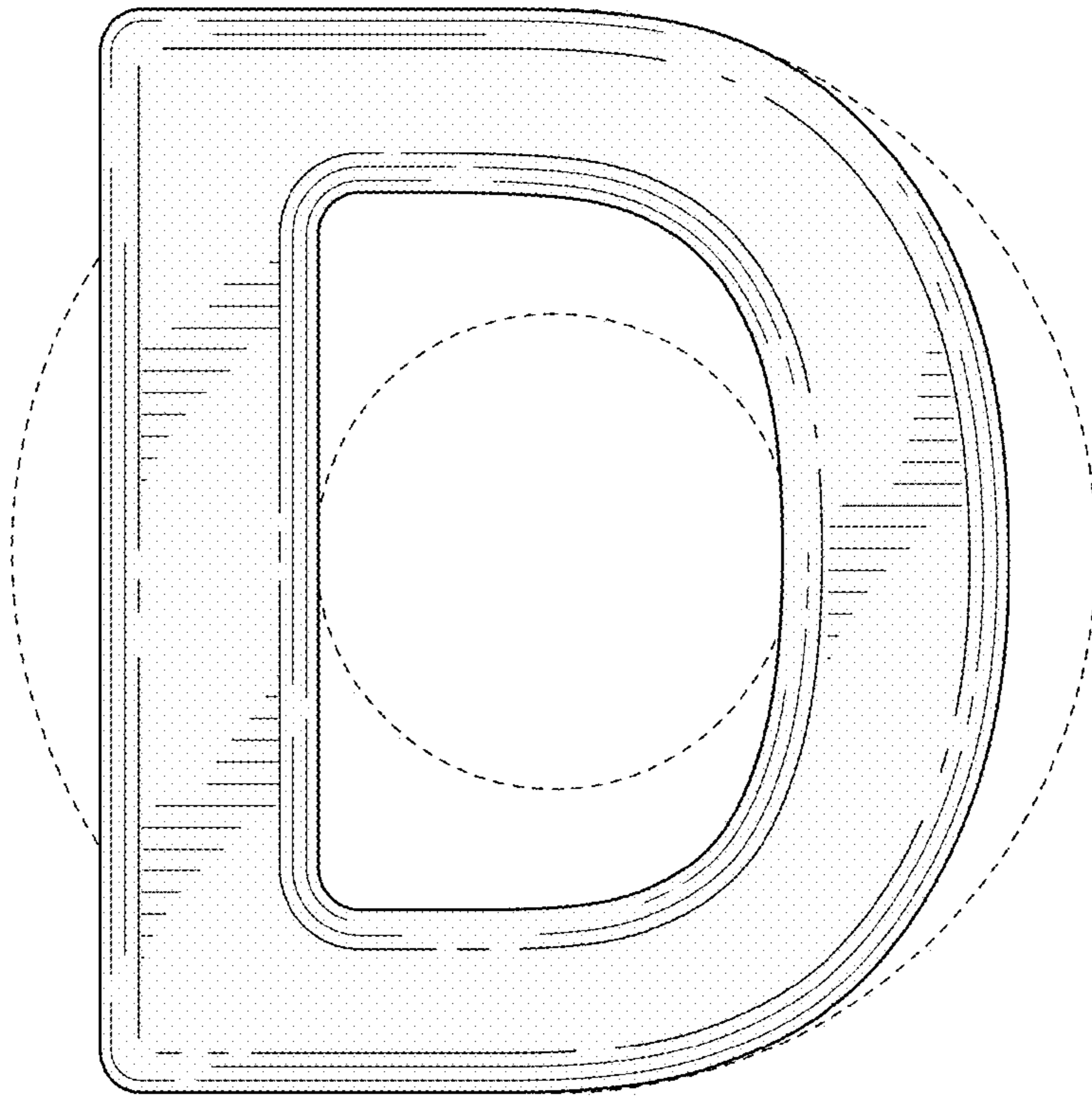


FIG. 26

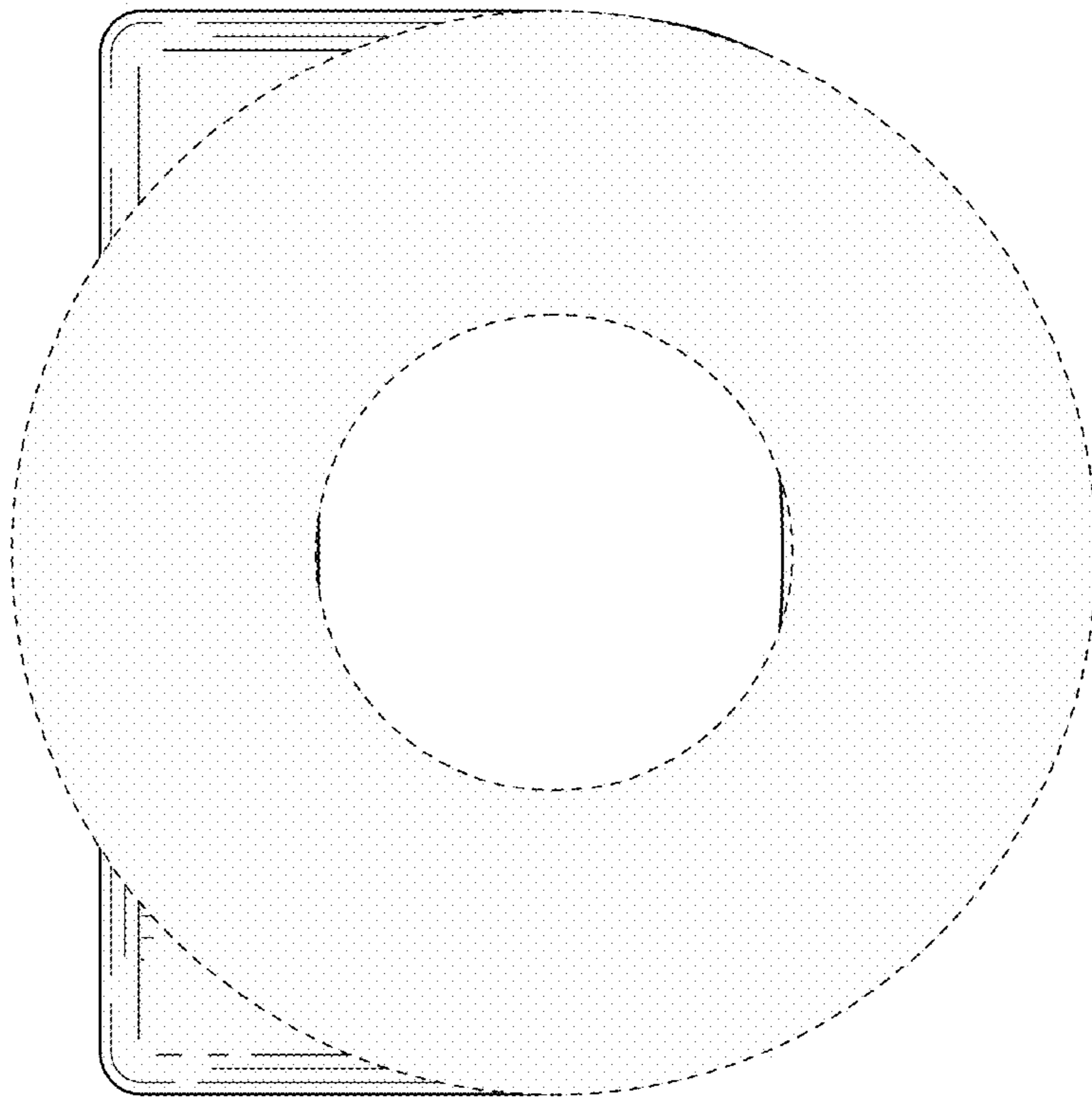


FIG. 27

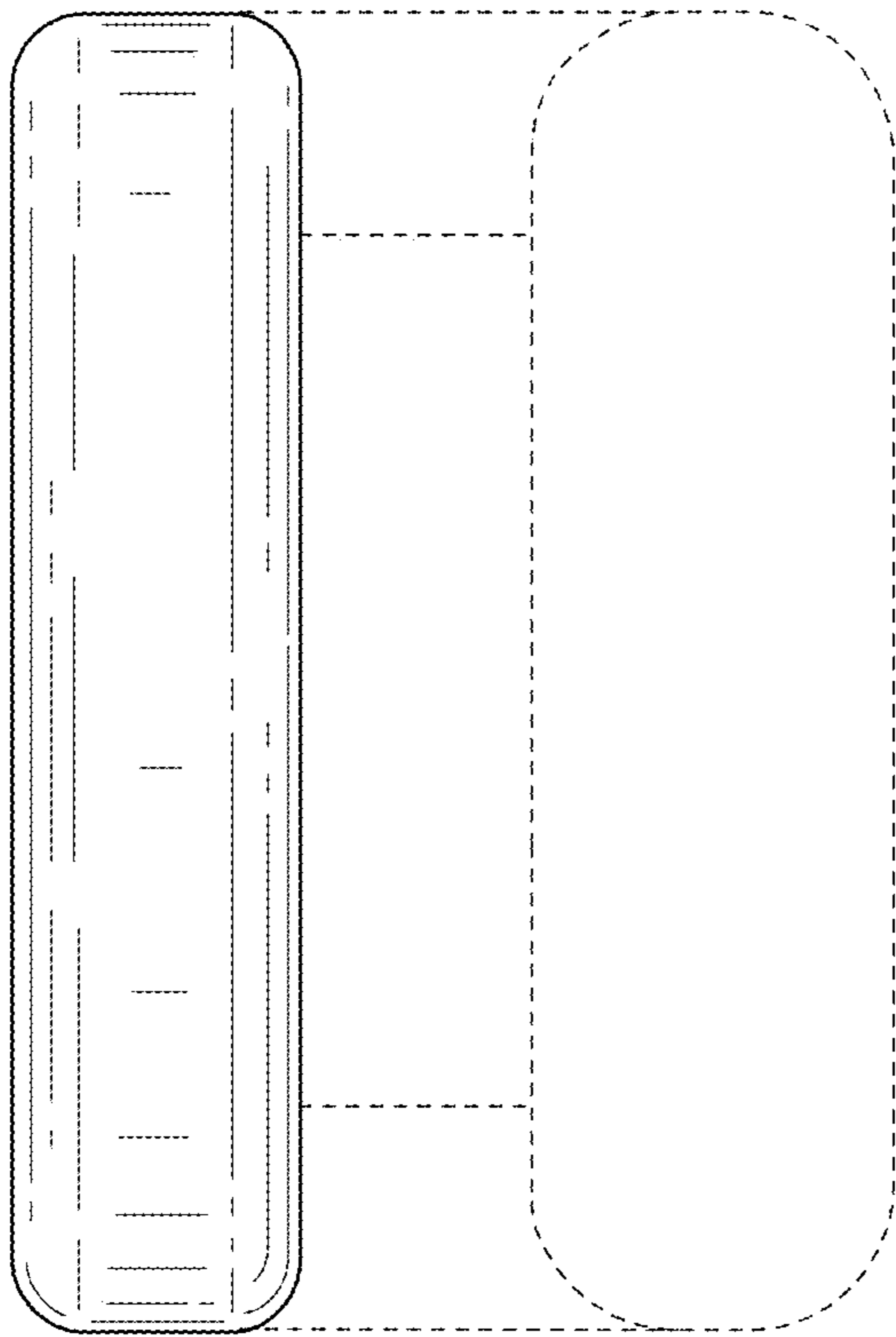


FIG. 28

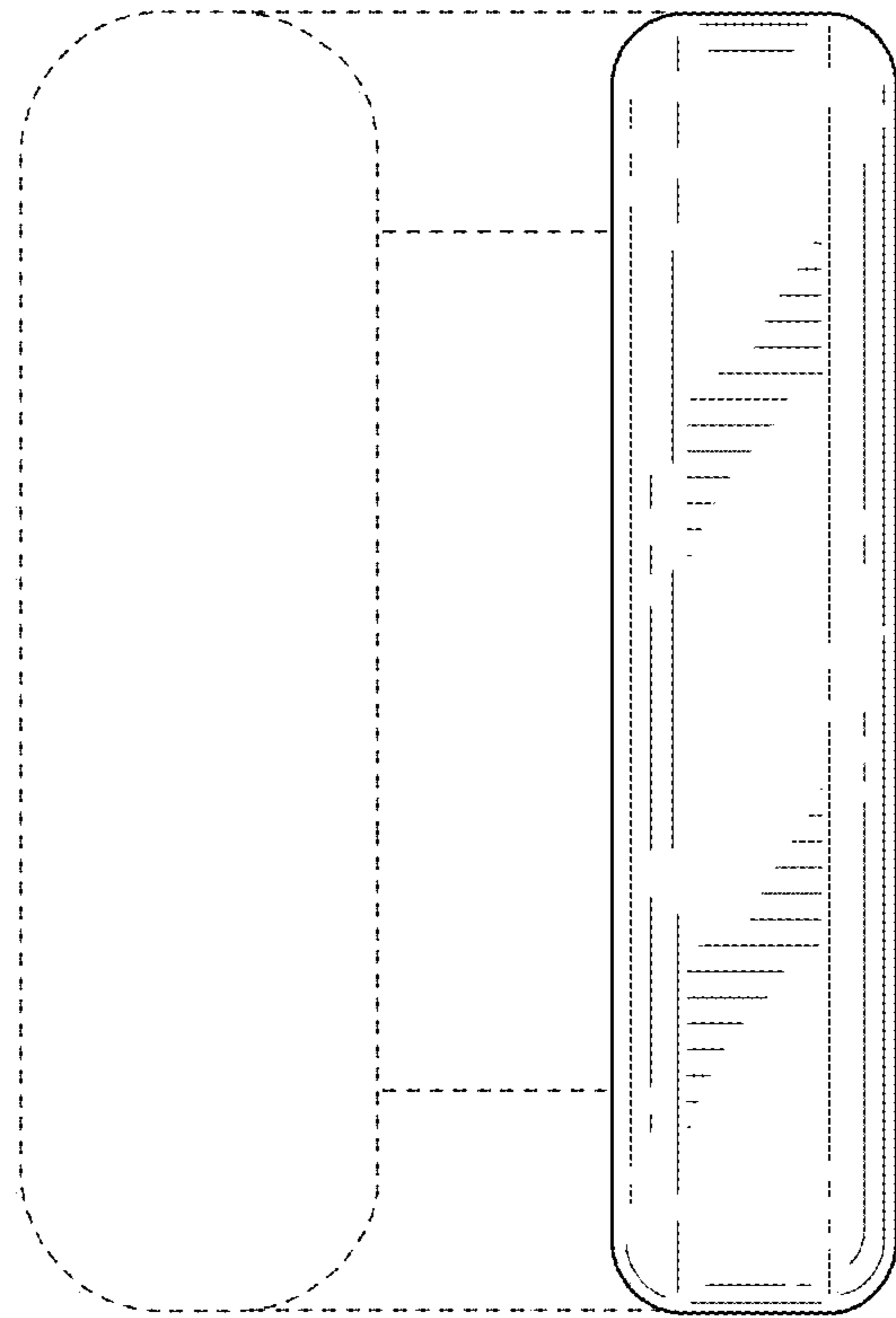


FIG. 29

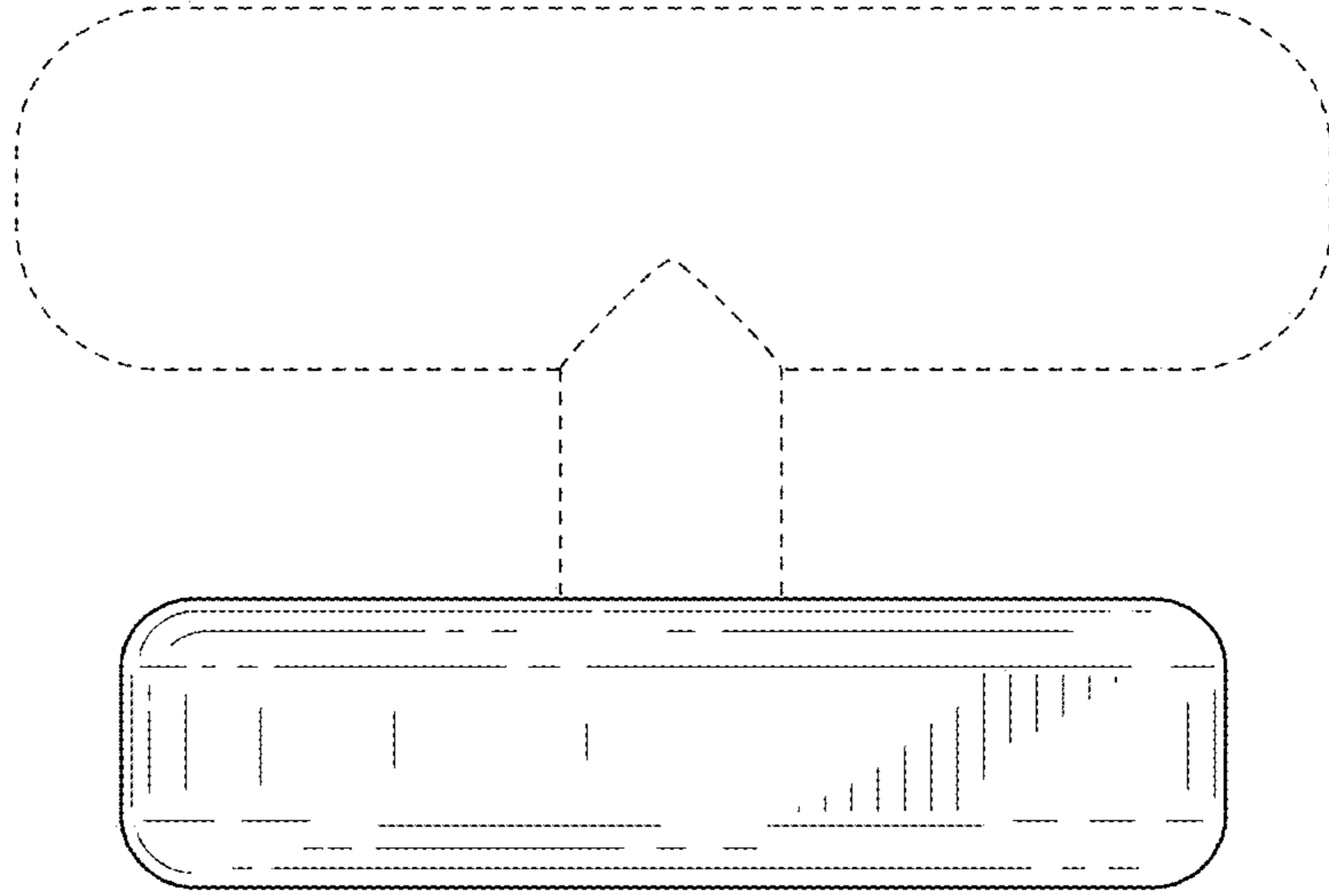


FIG. 30

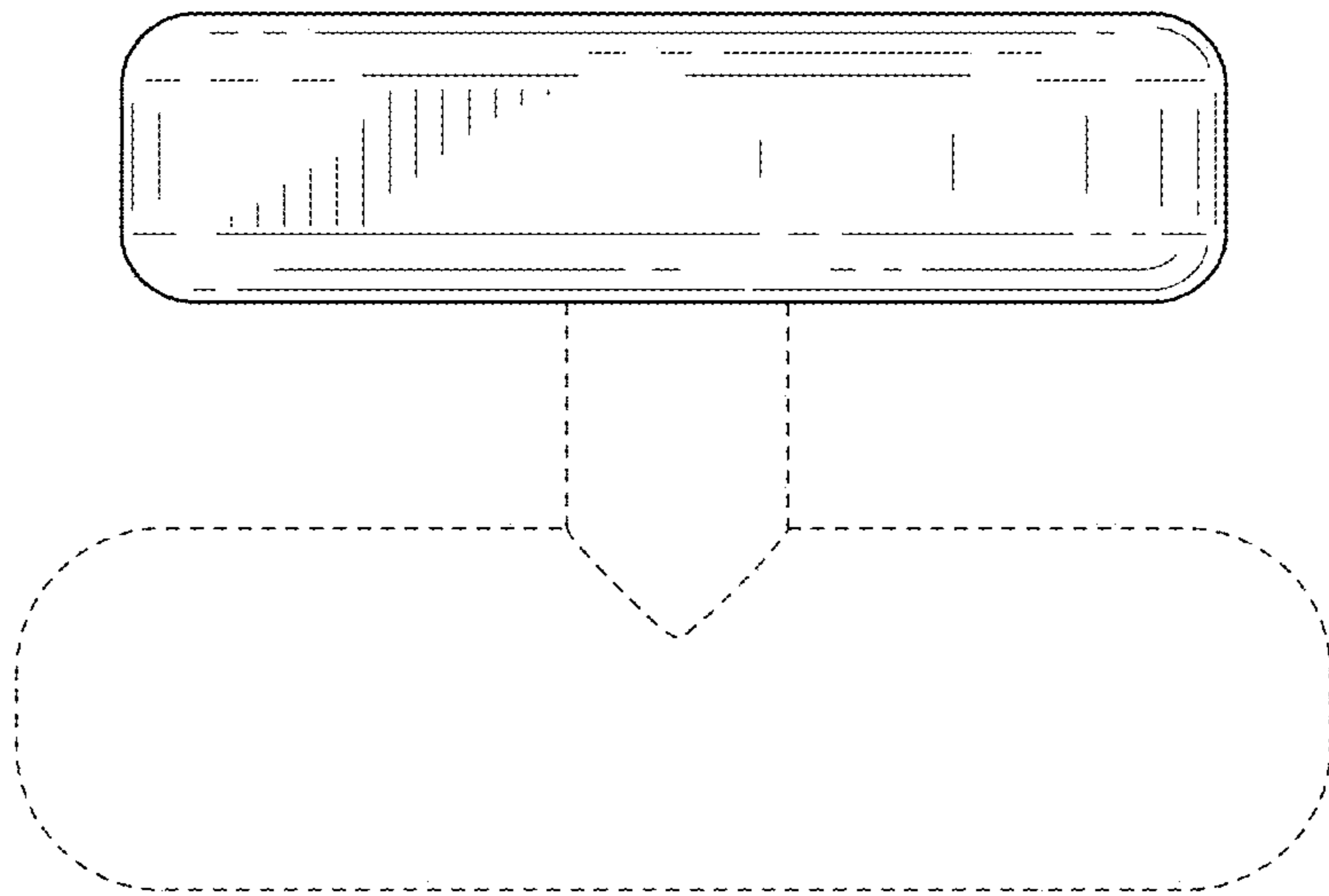


FIG. 31

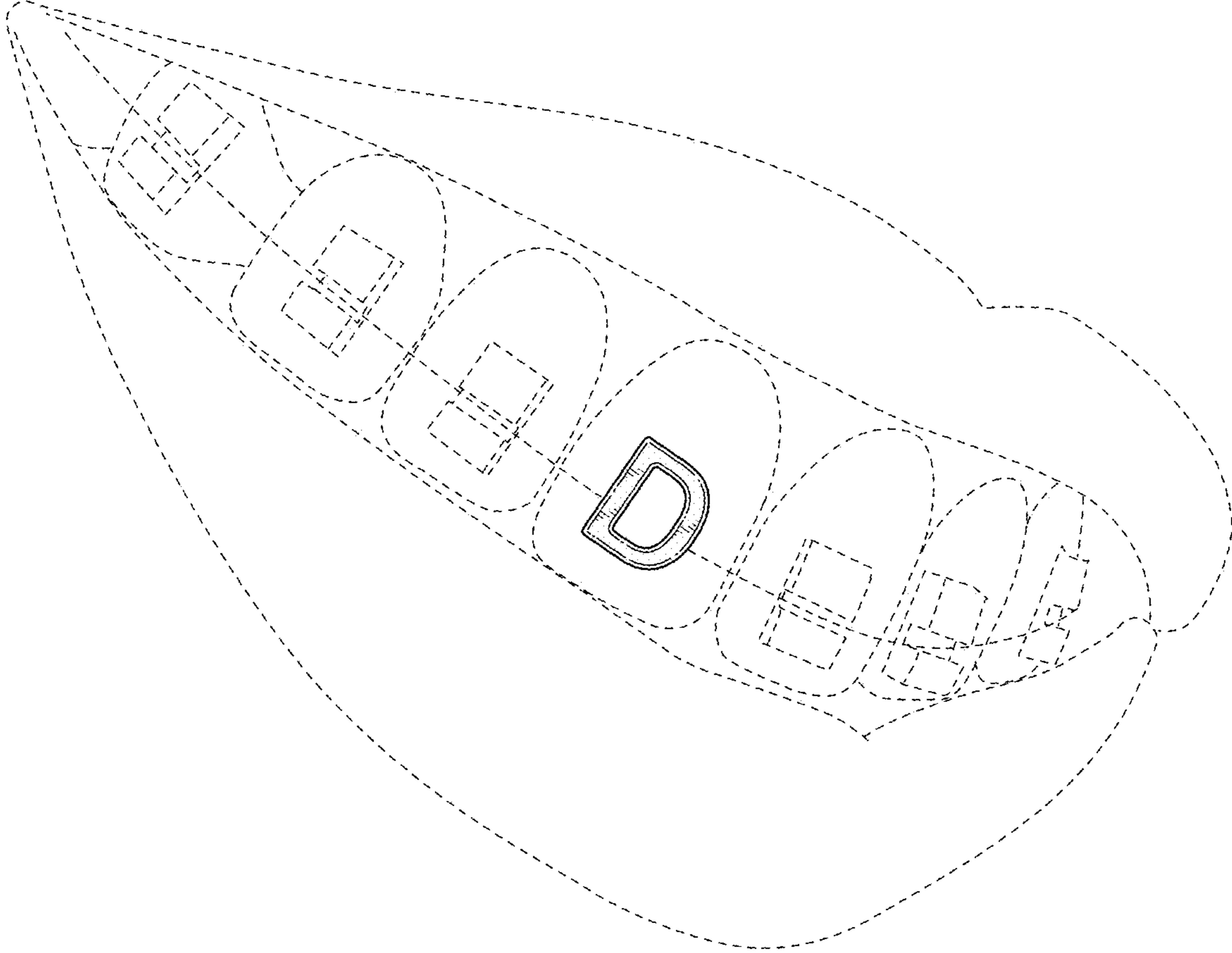


FIG. 32

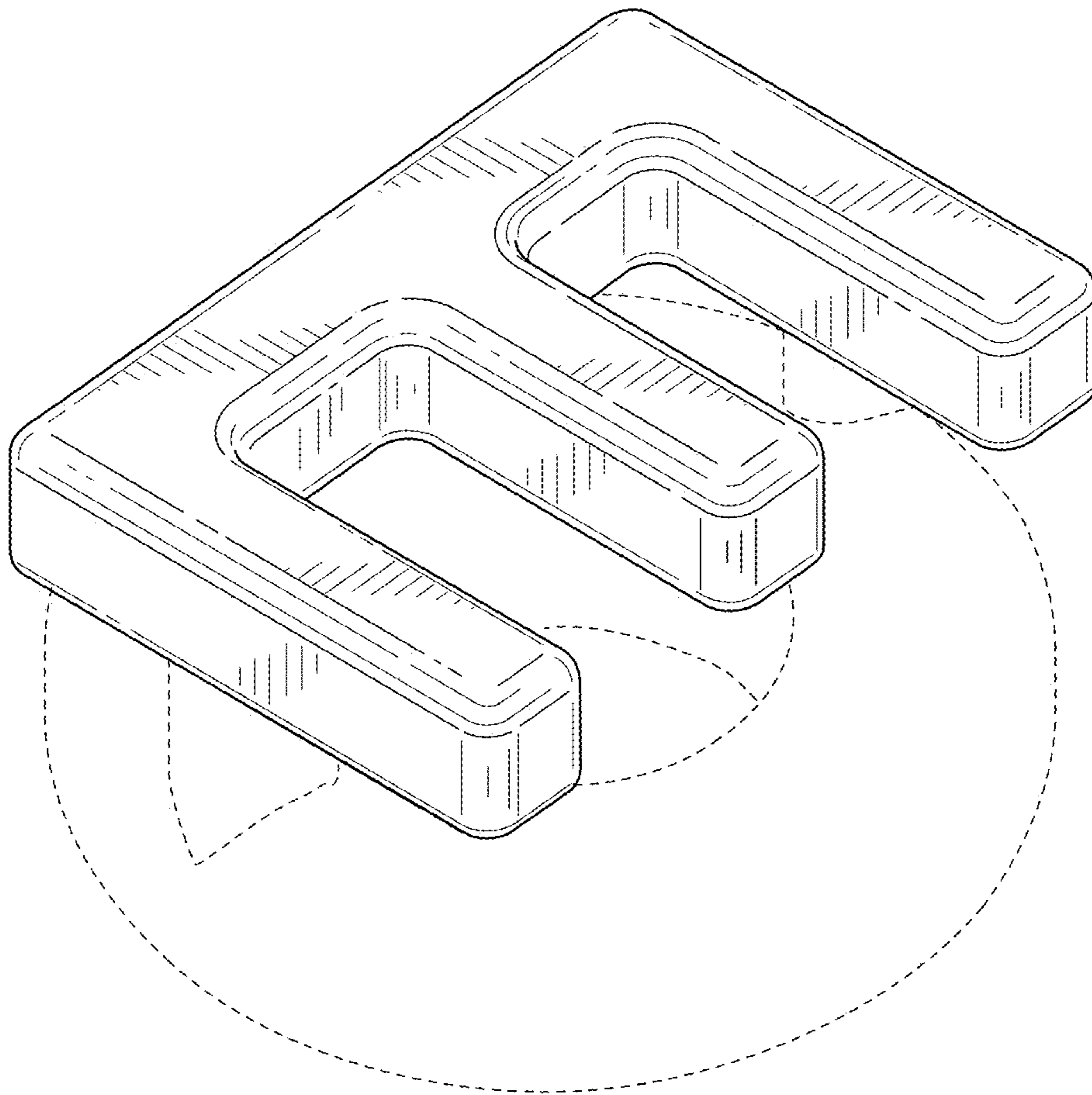


FIG. 33

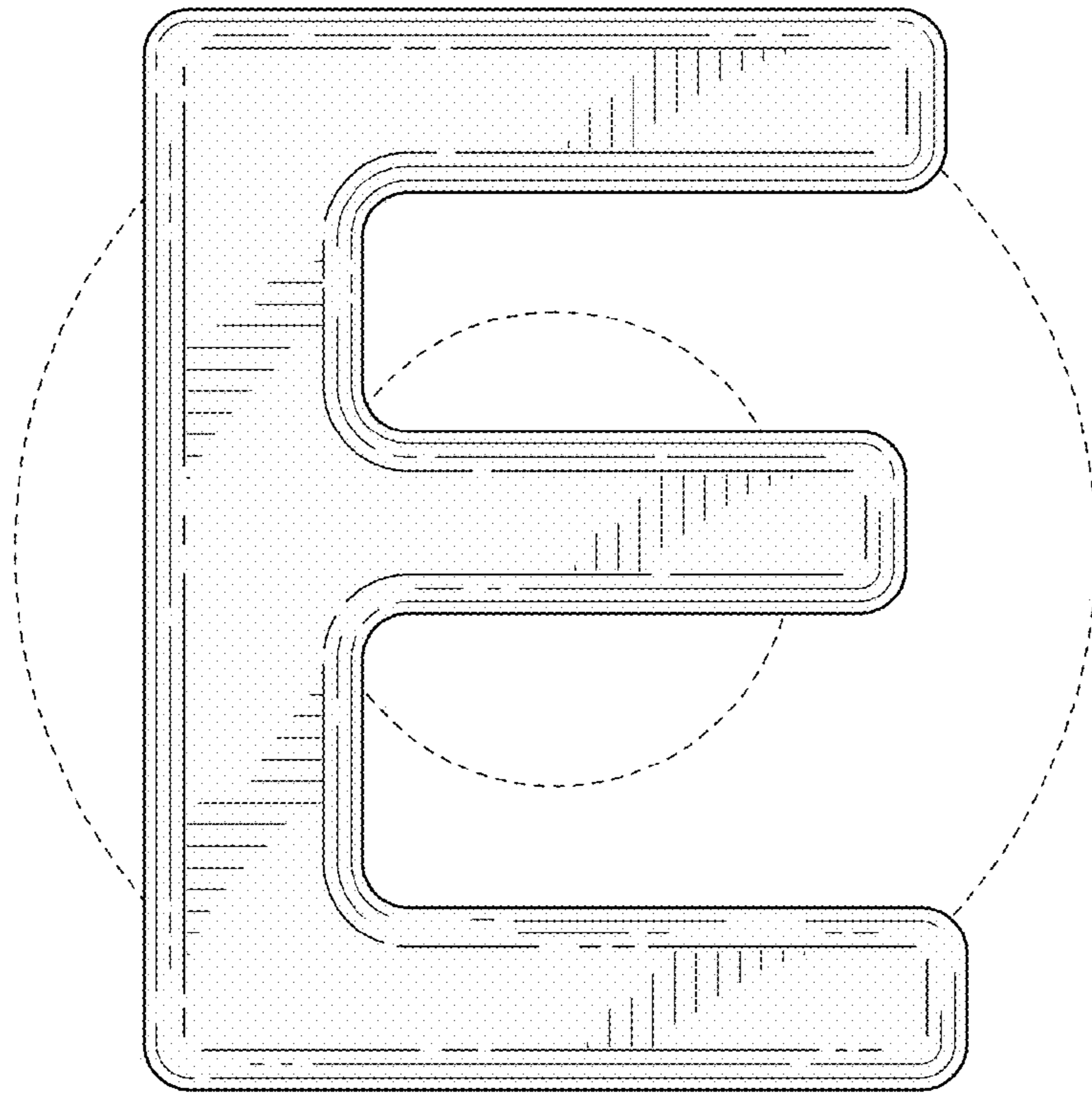


FIG. 34

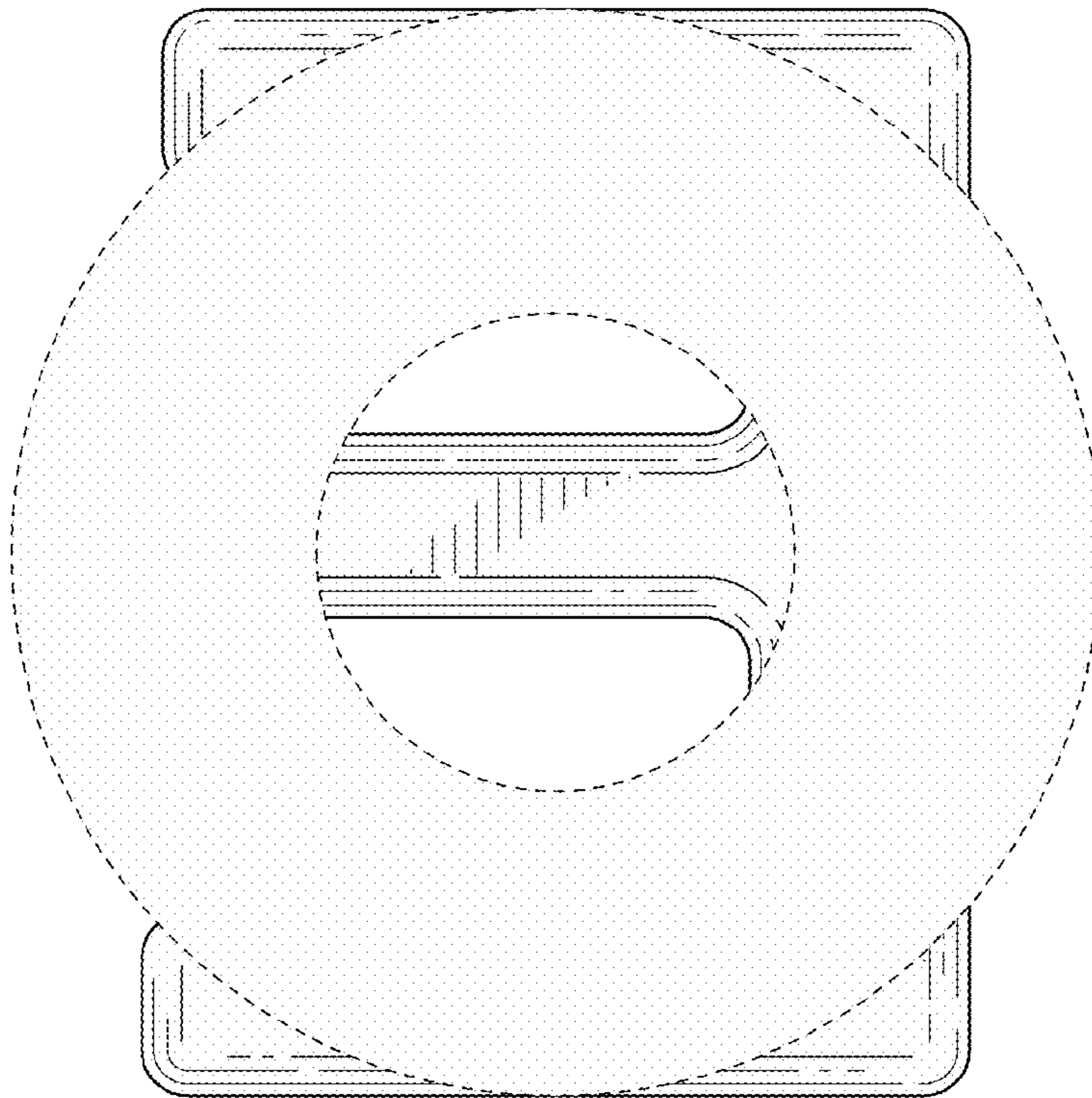


FIG. 35

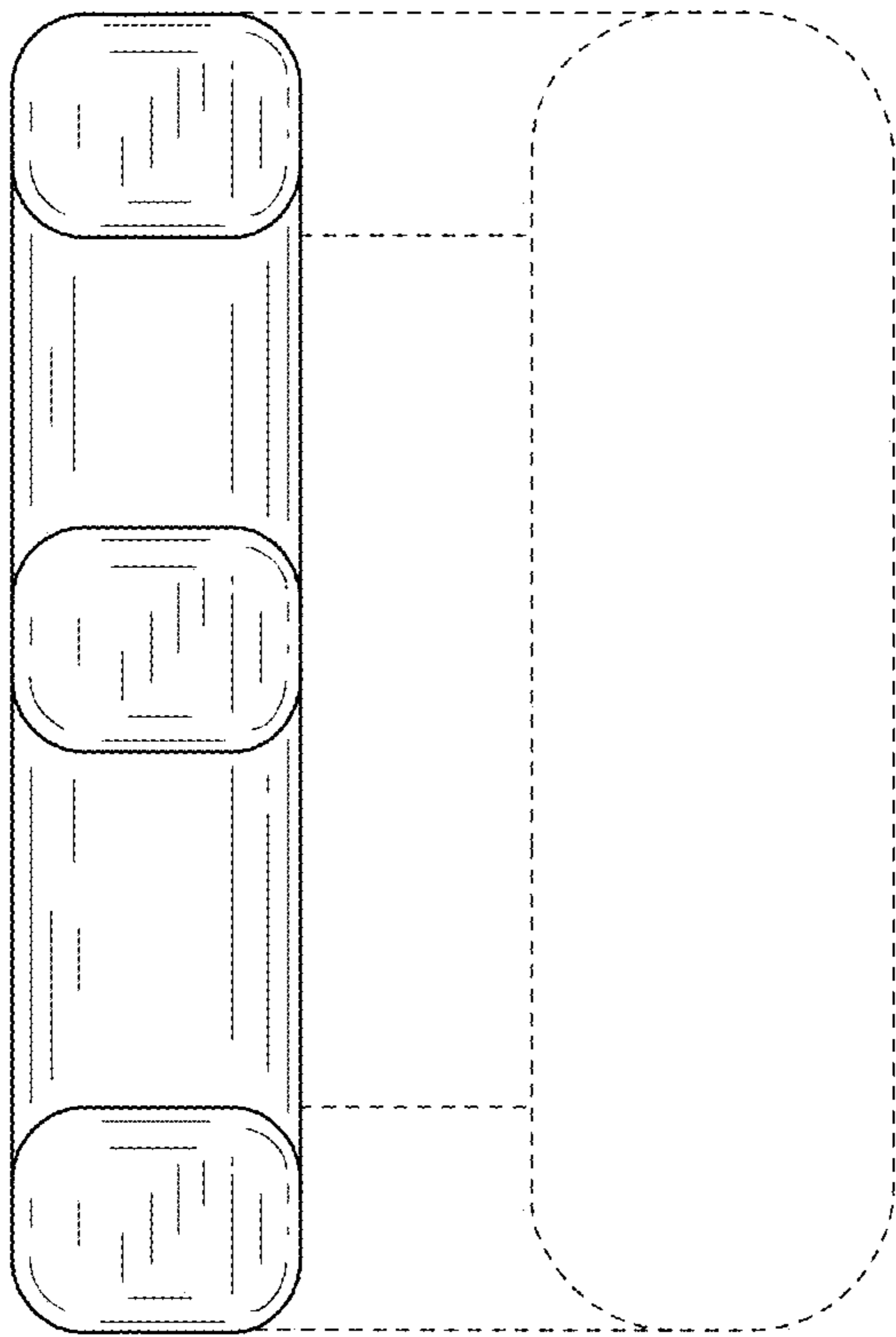


FIG. 36

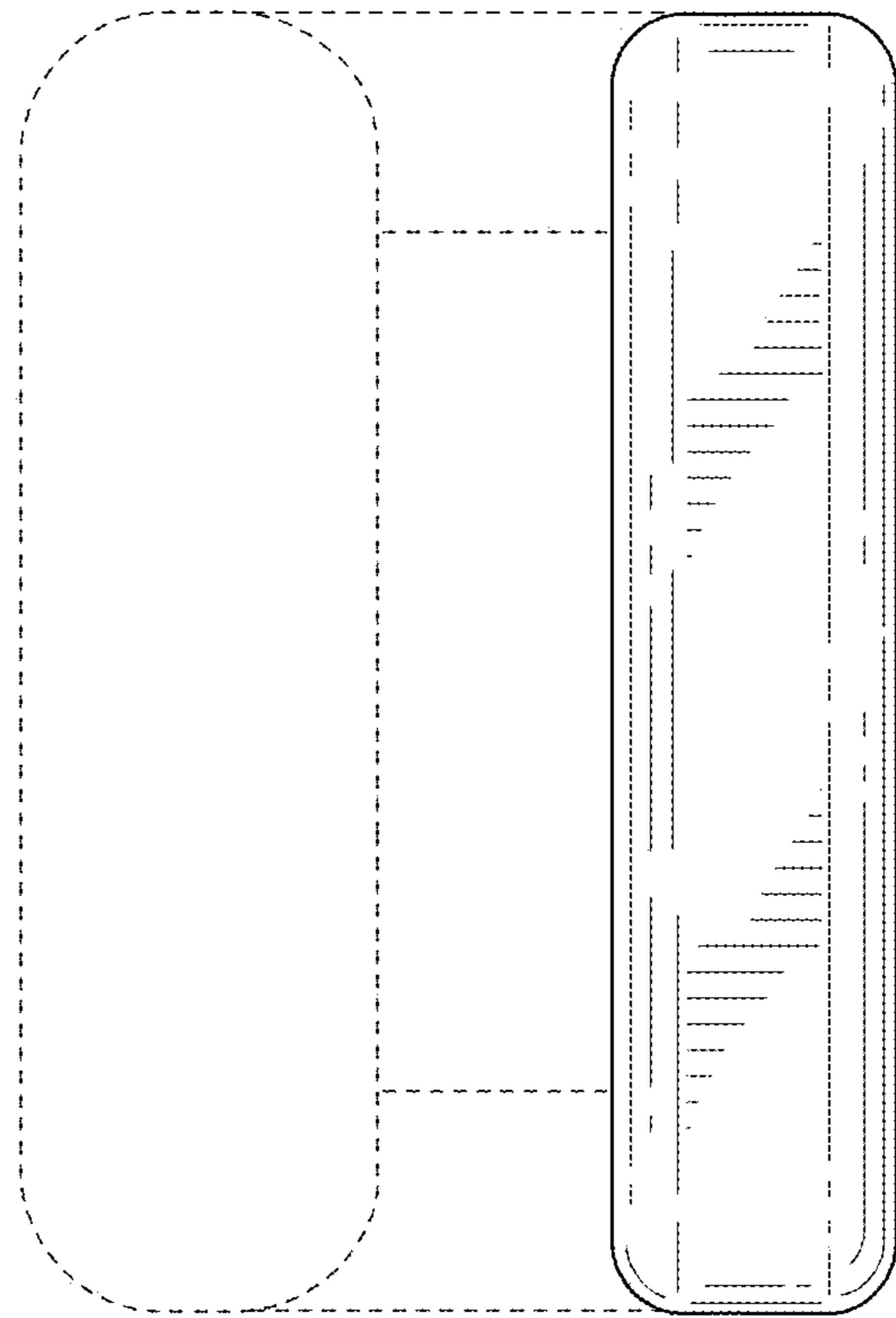


FIG. 37

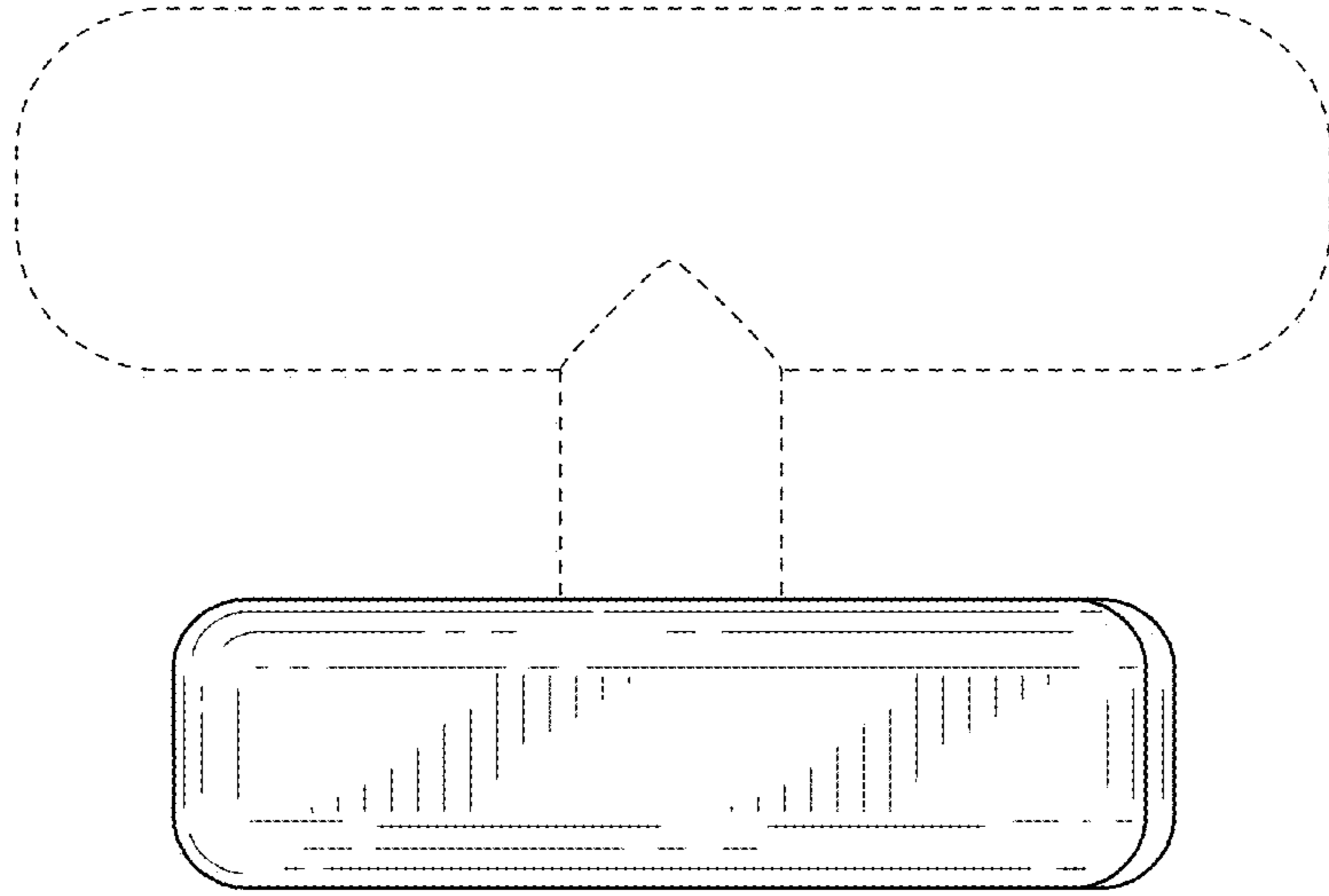


FIG. 38

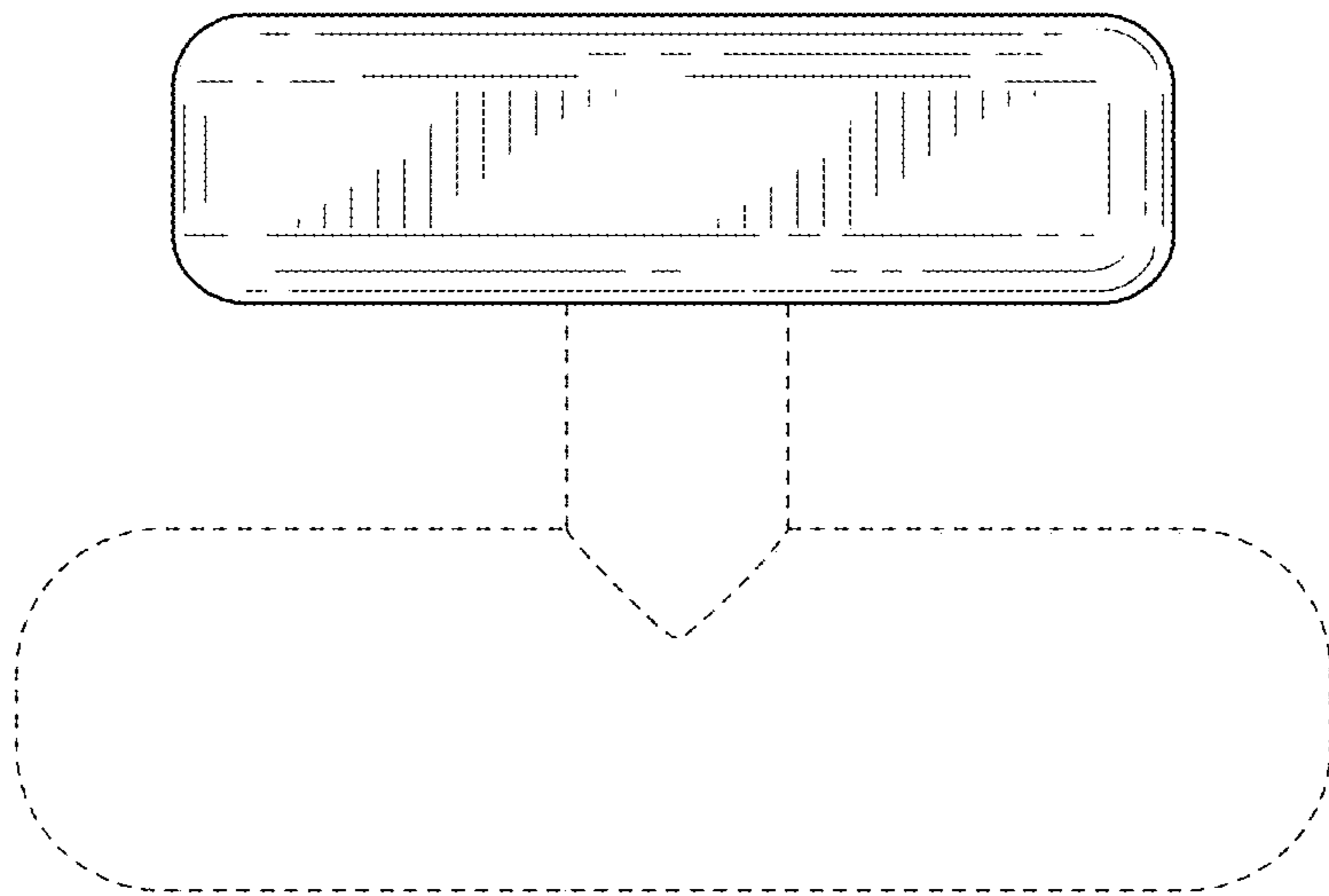


FIG. 39

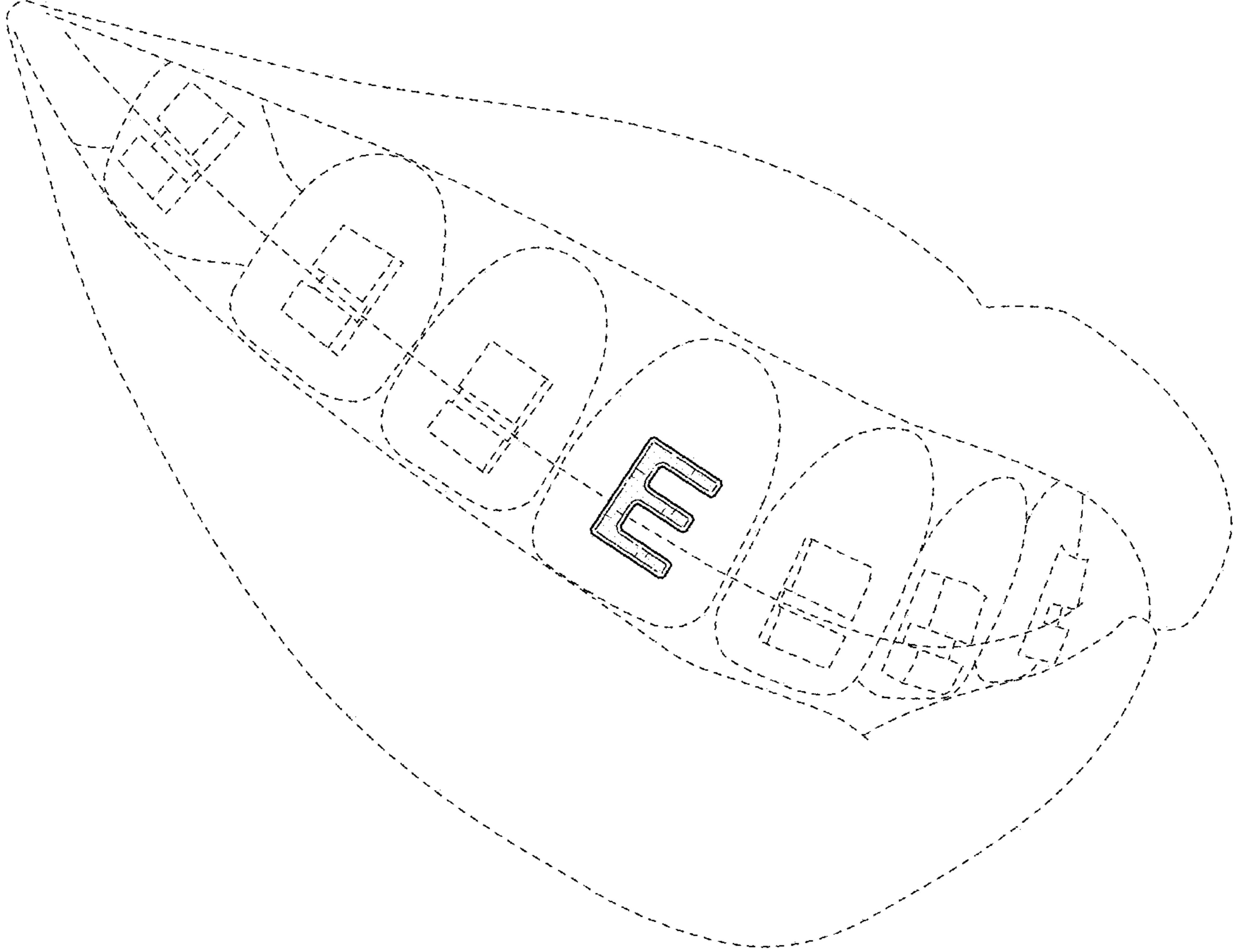


FIG. 40

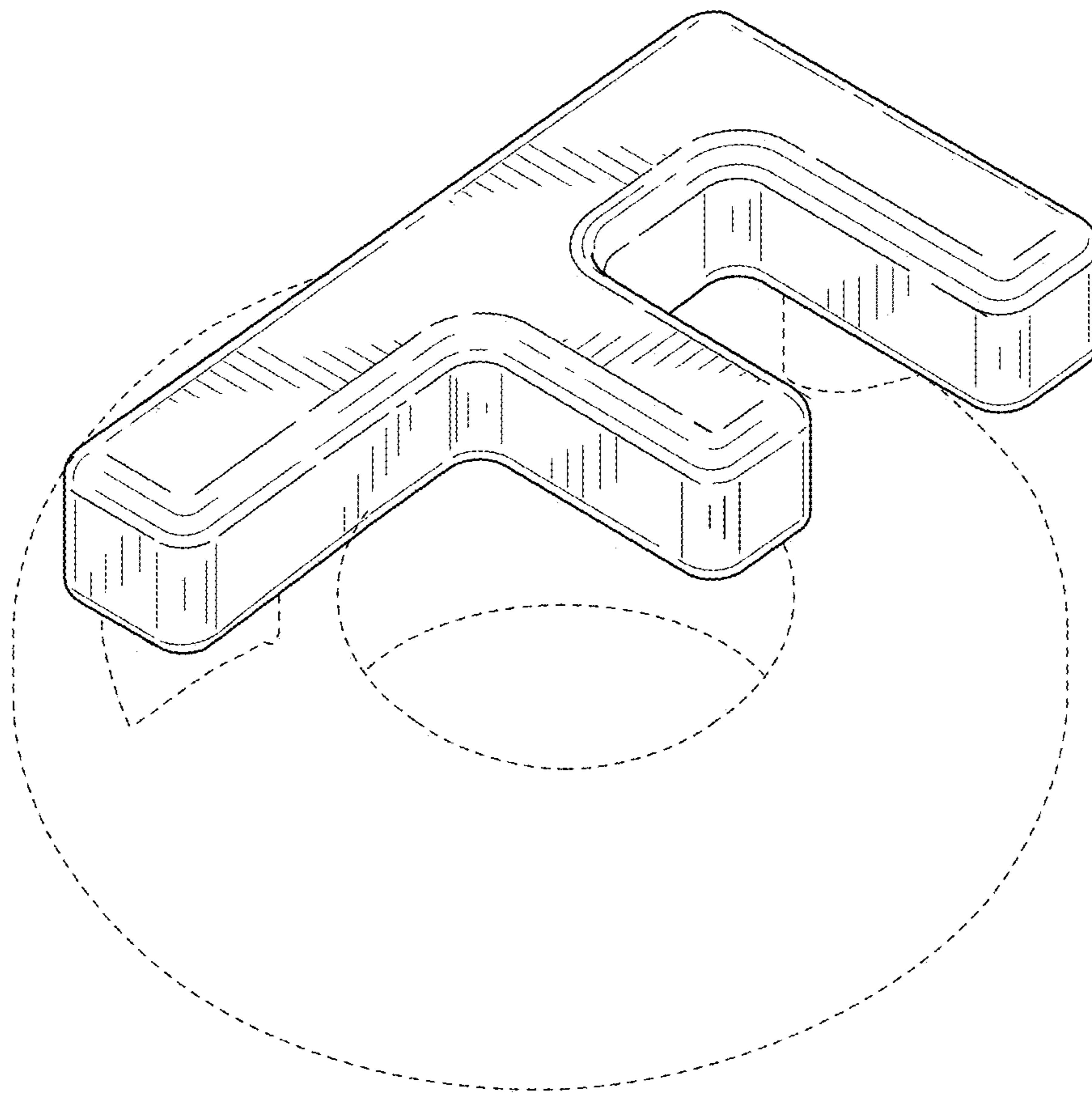


FIG. 41

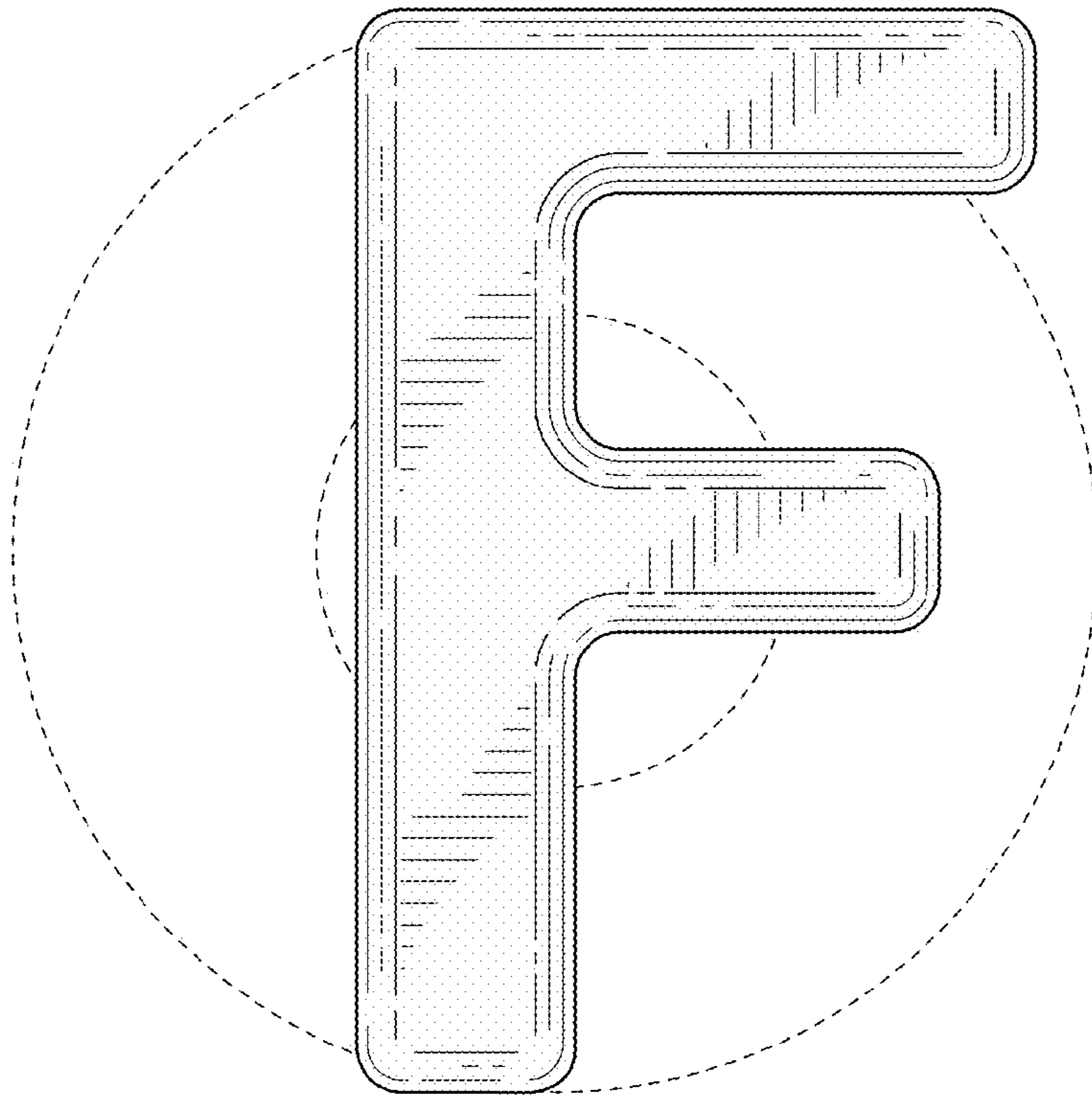


FIG. 42

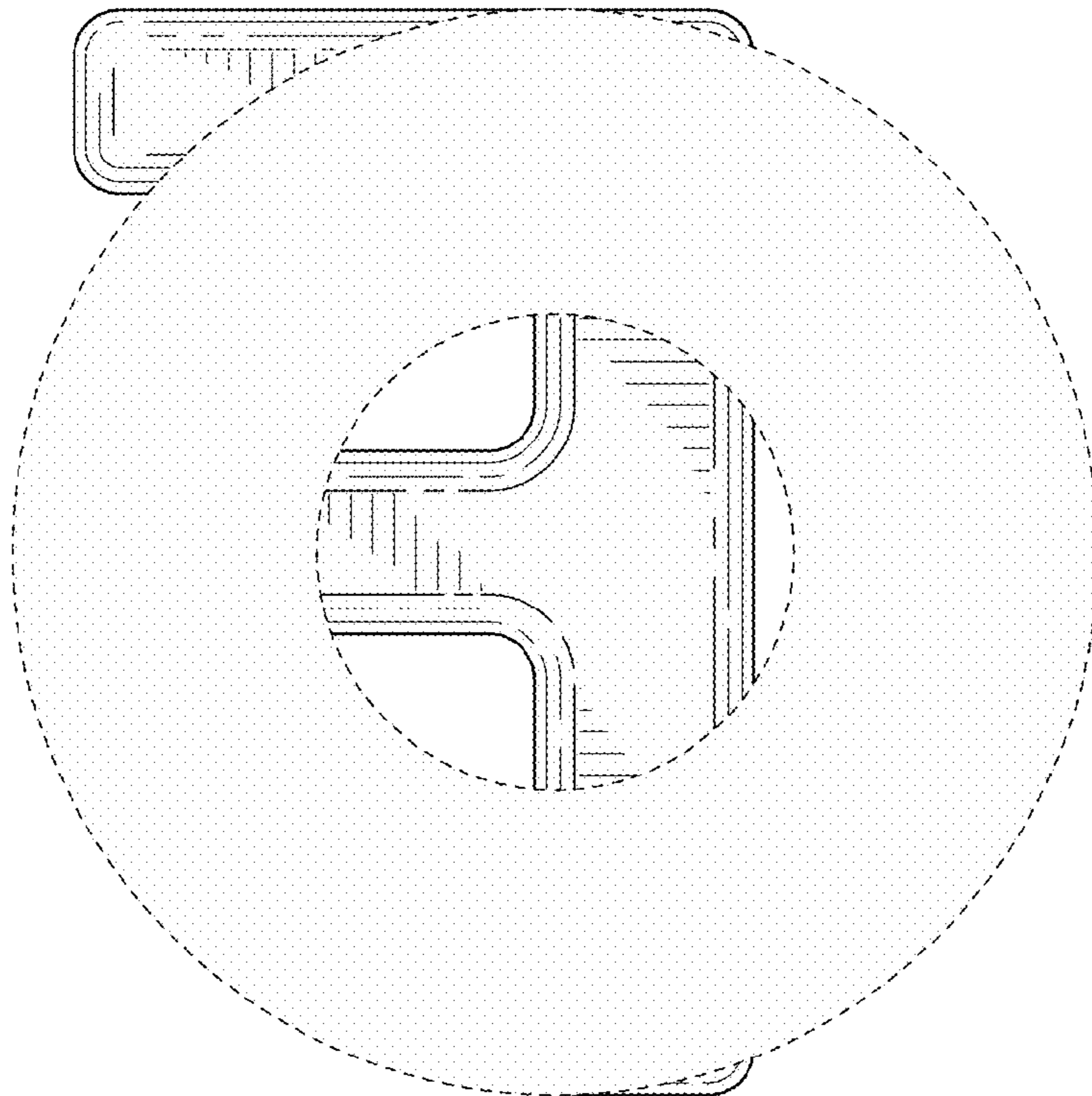


FIG. 43

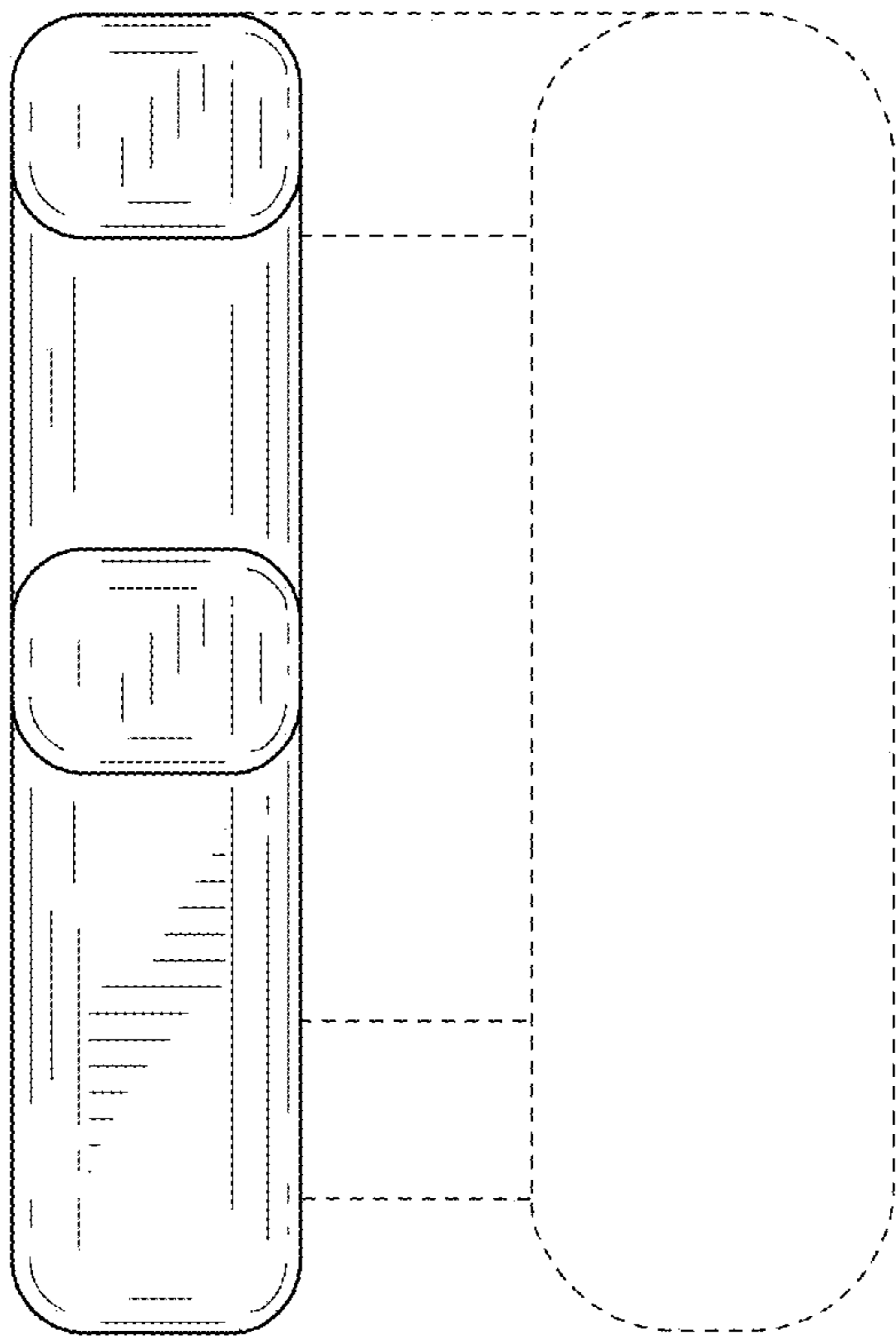


FIG. 44

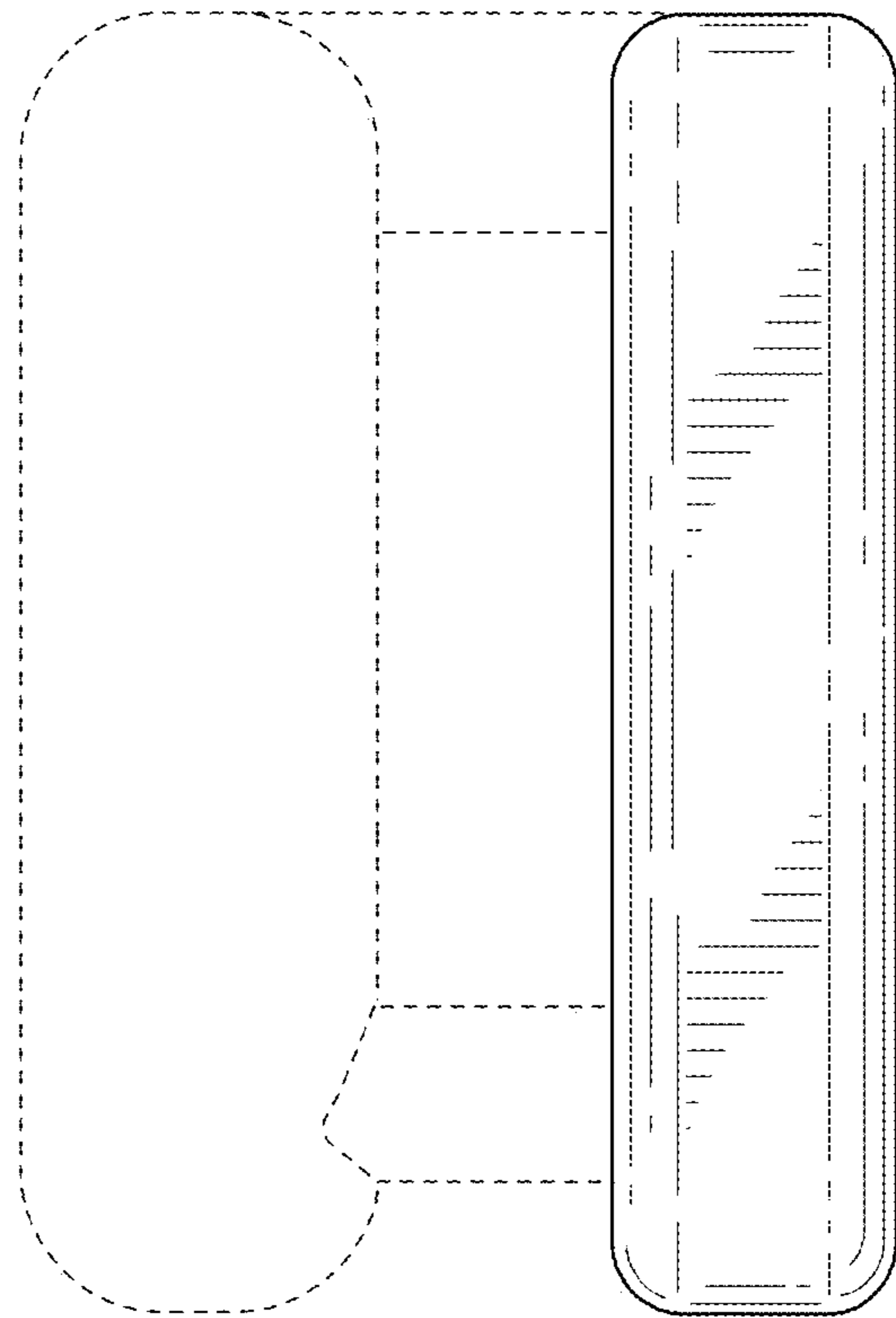


FIG. 45

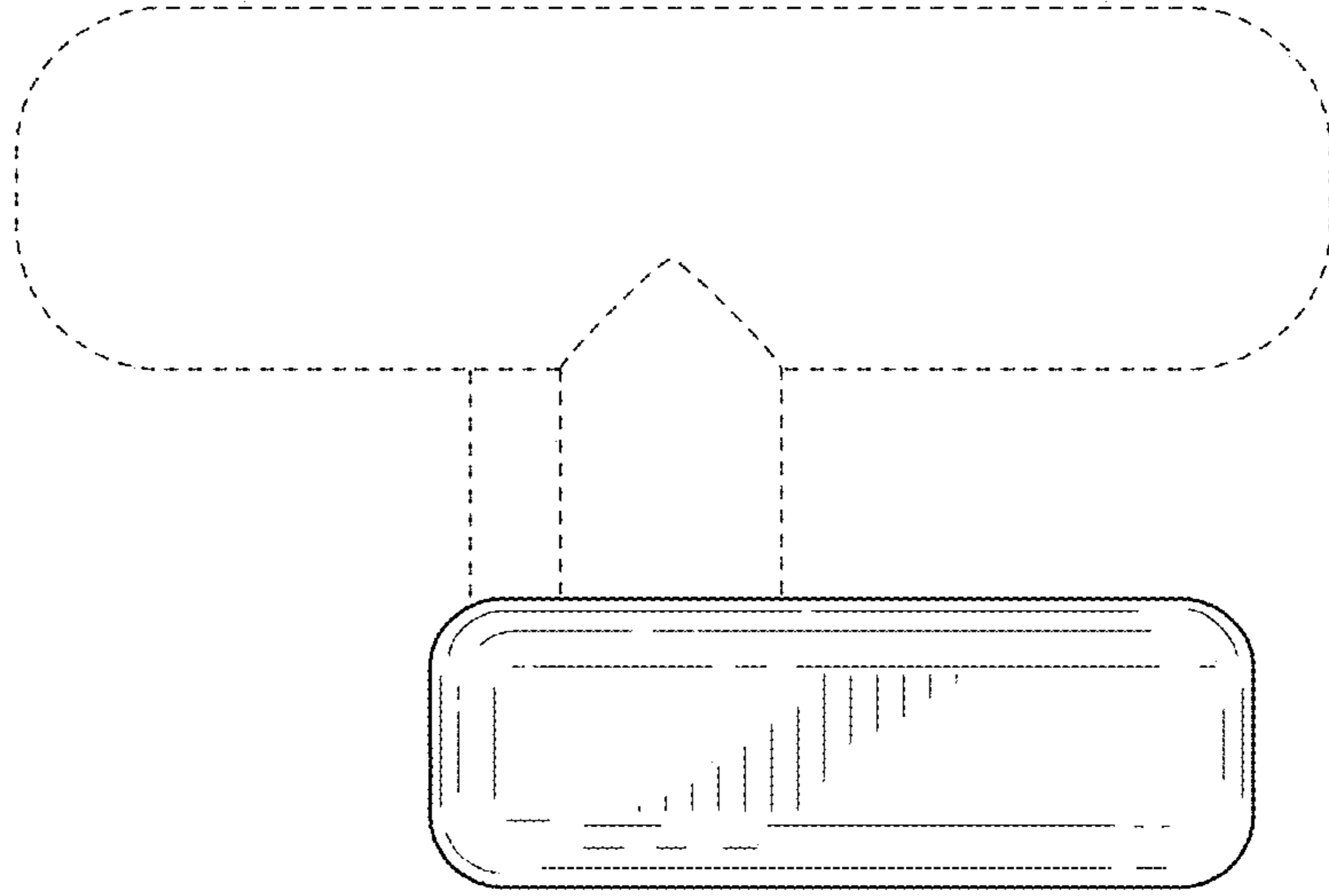


FIG. 46

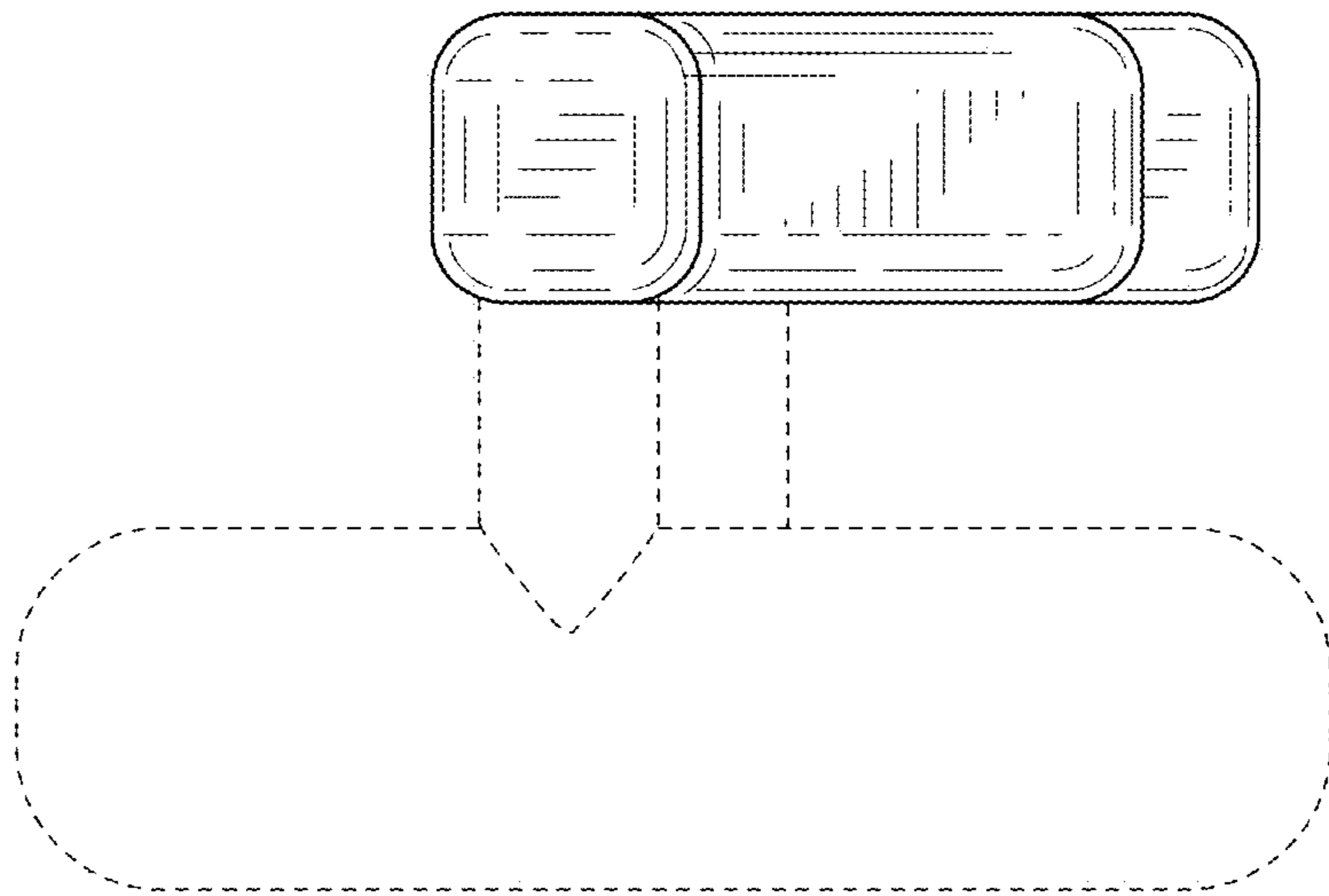


FIG. 47

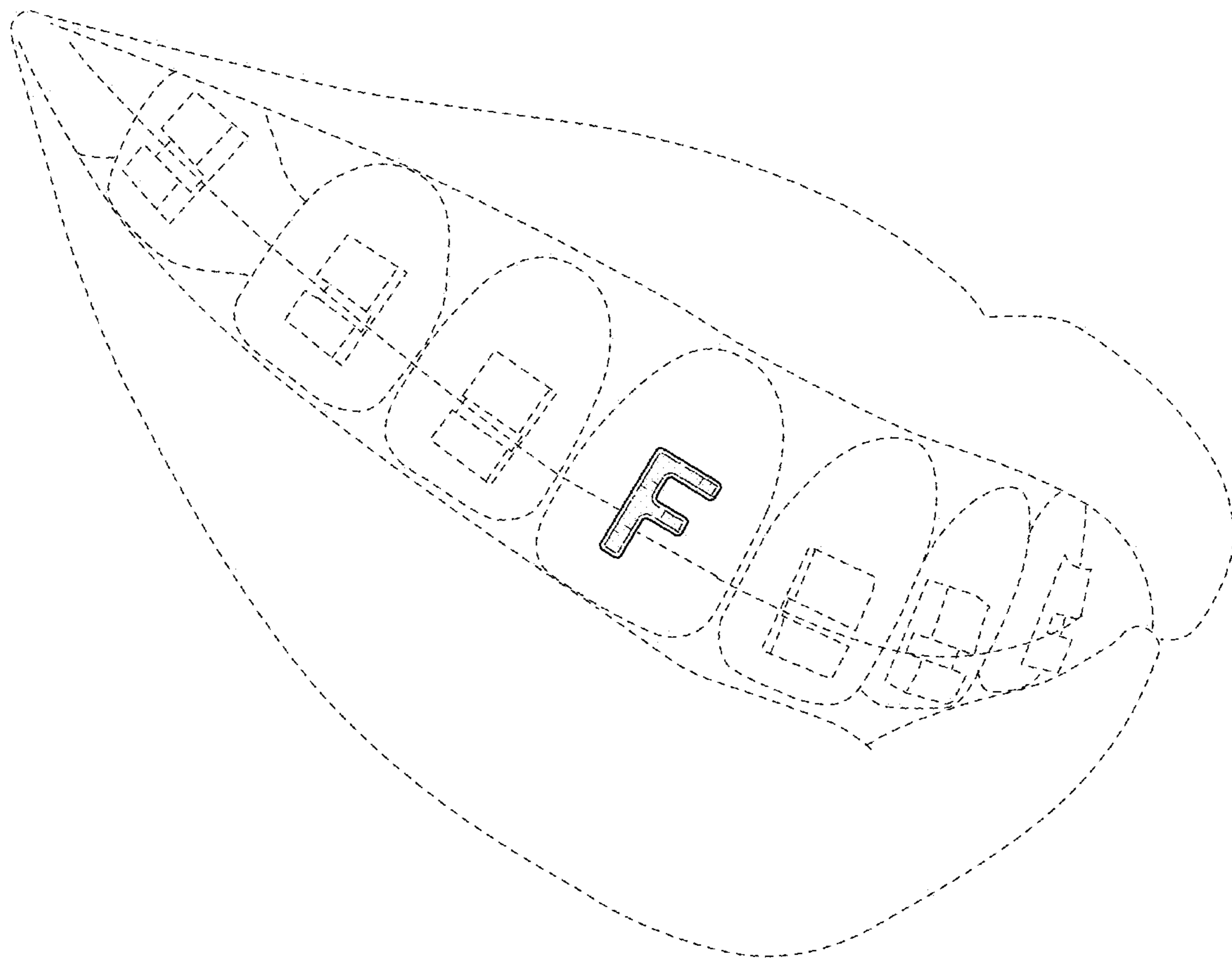


FIG. 48

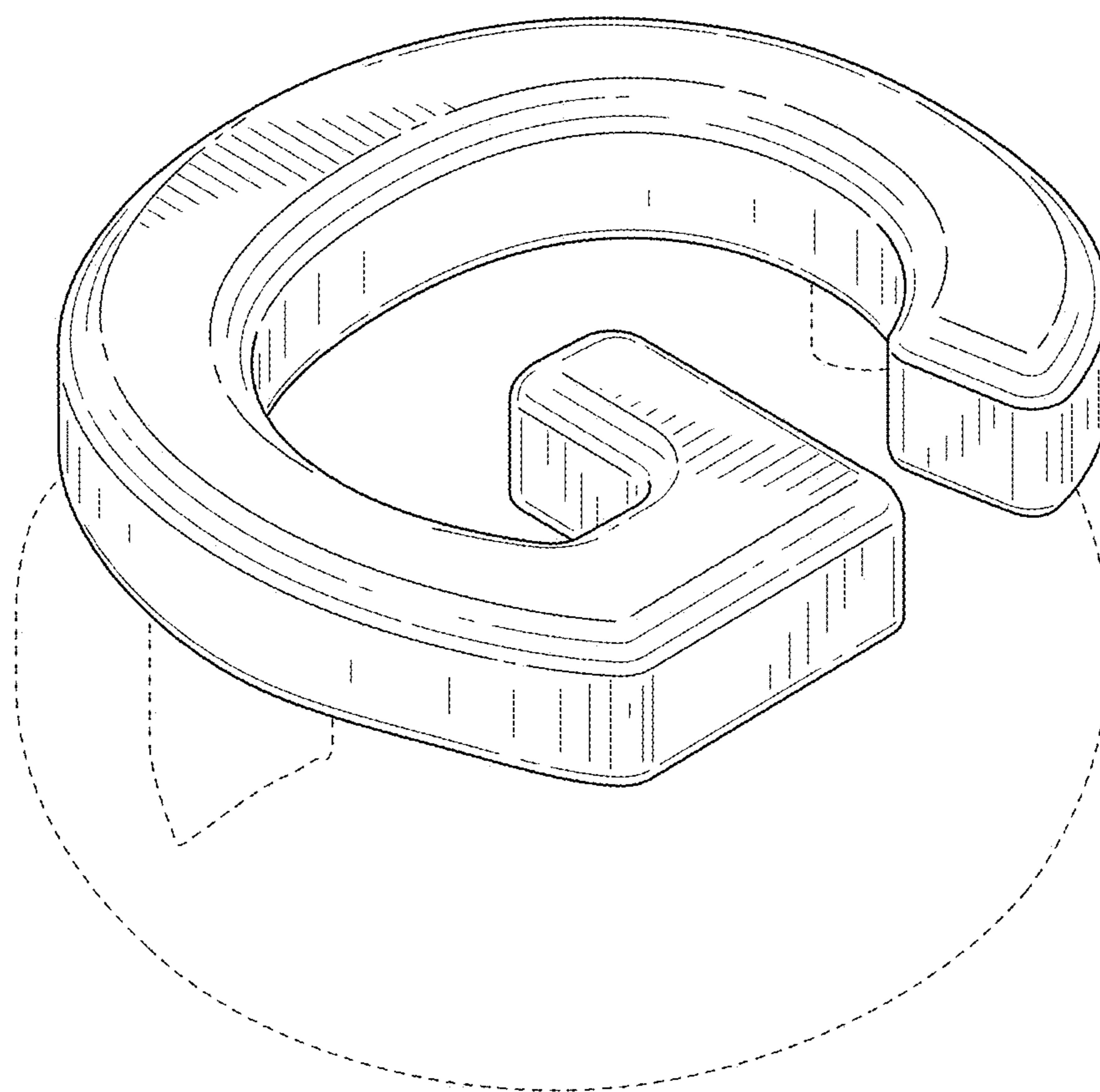


FIG. 49

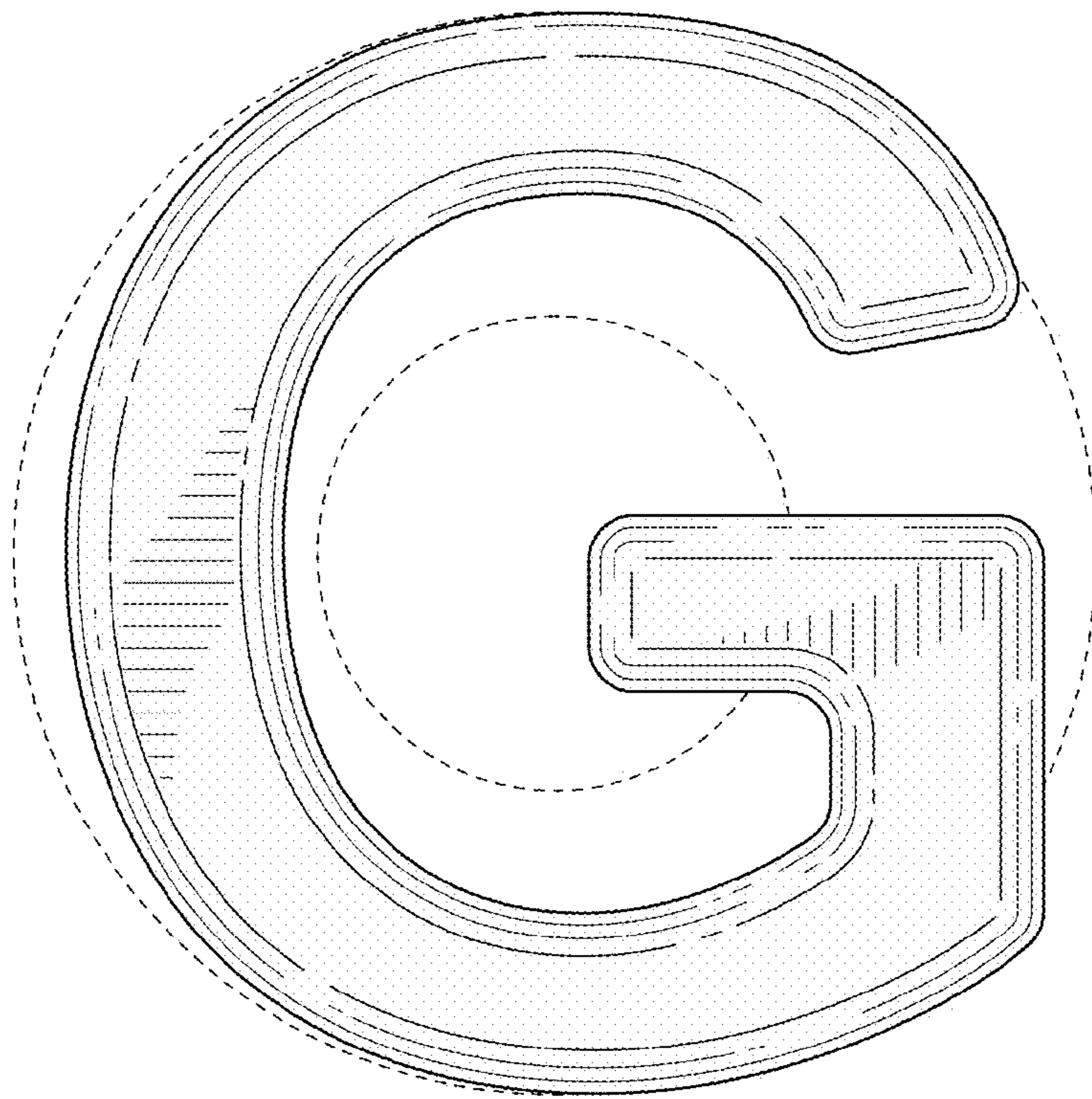


FIG. 50

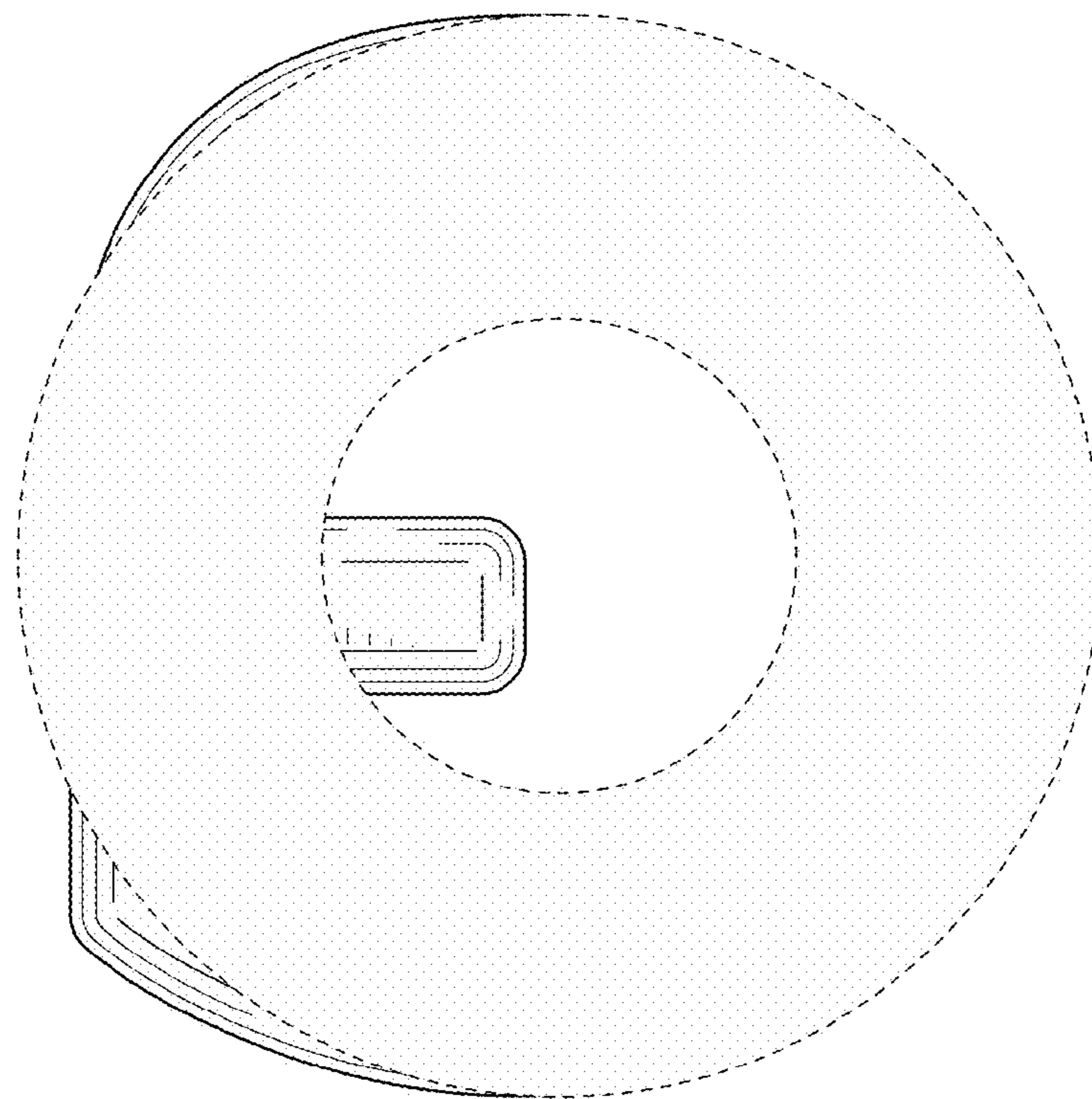


FIG. 51

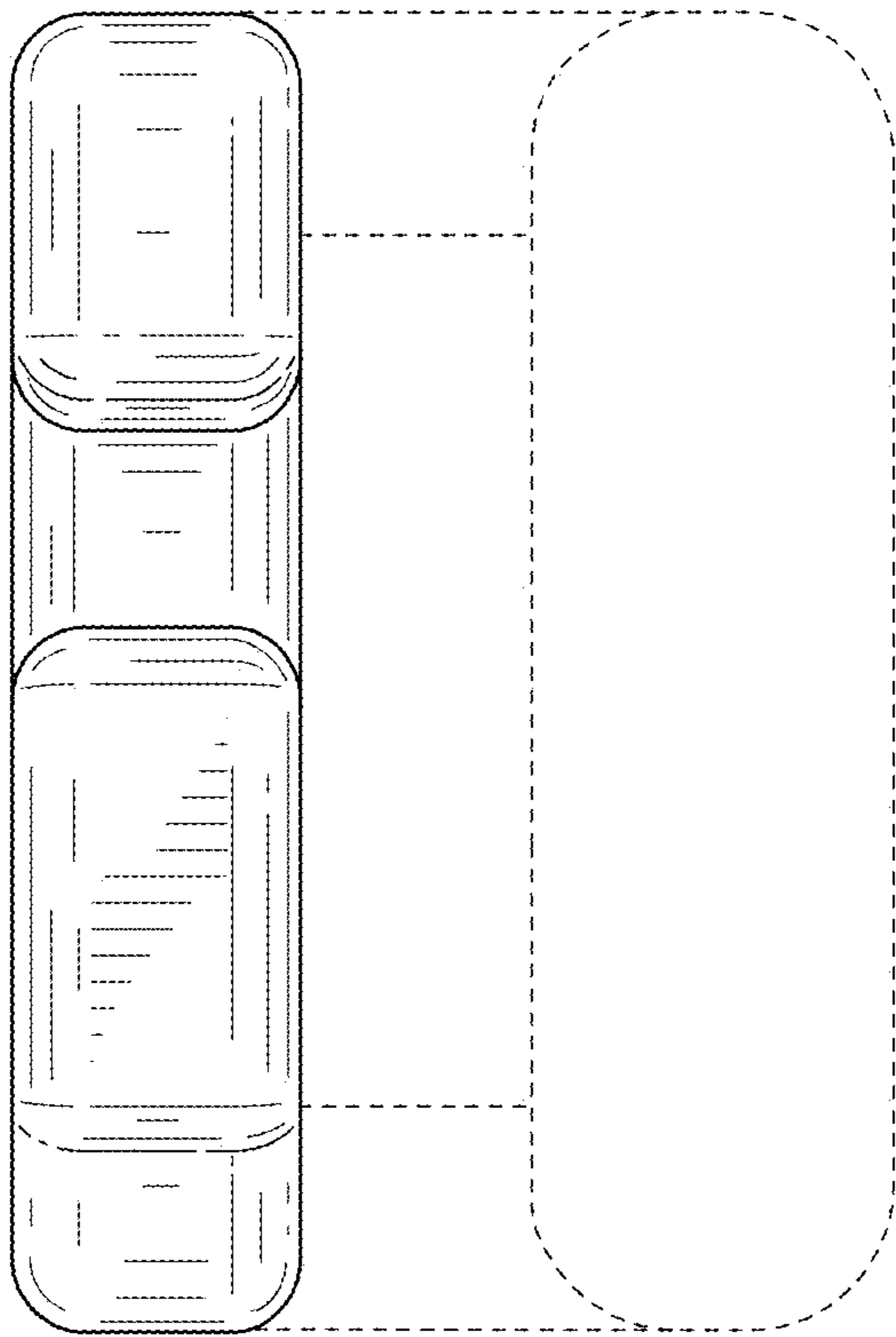


FIG. 52

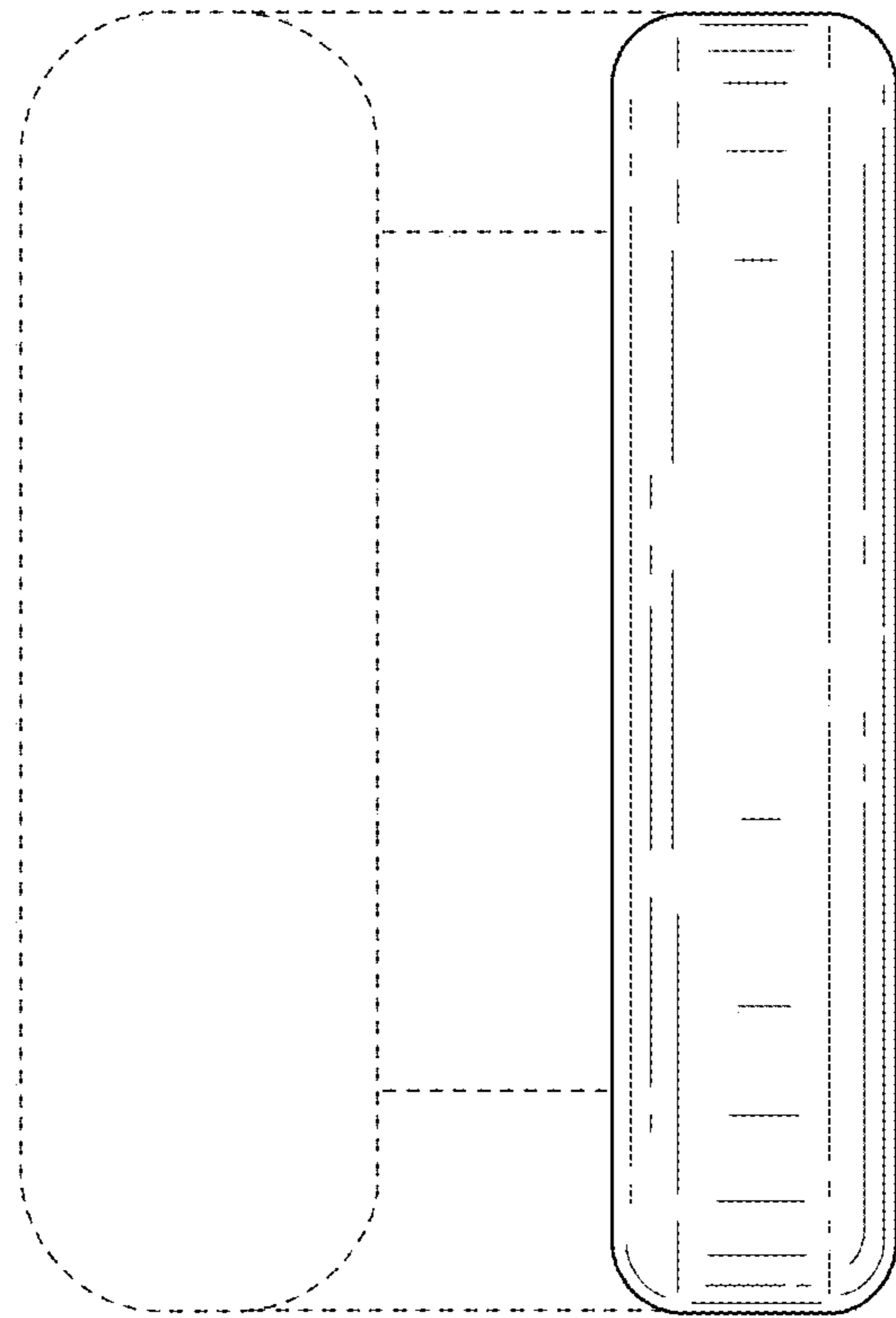


FIG. 53

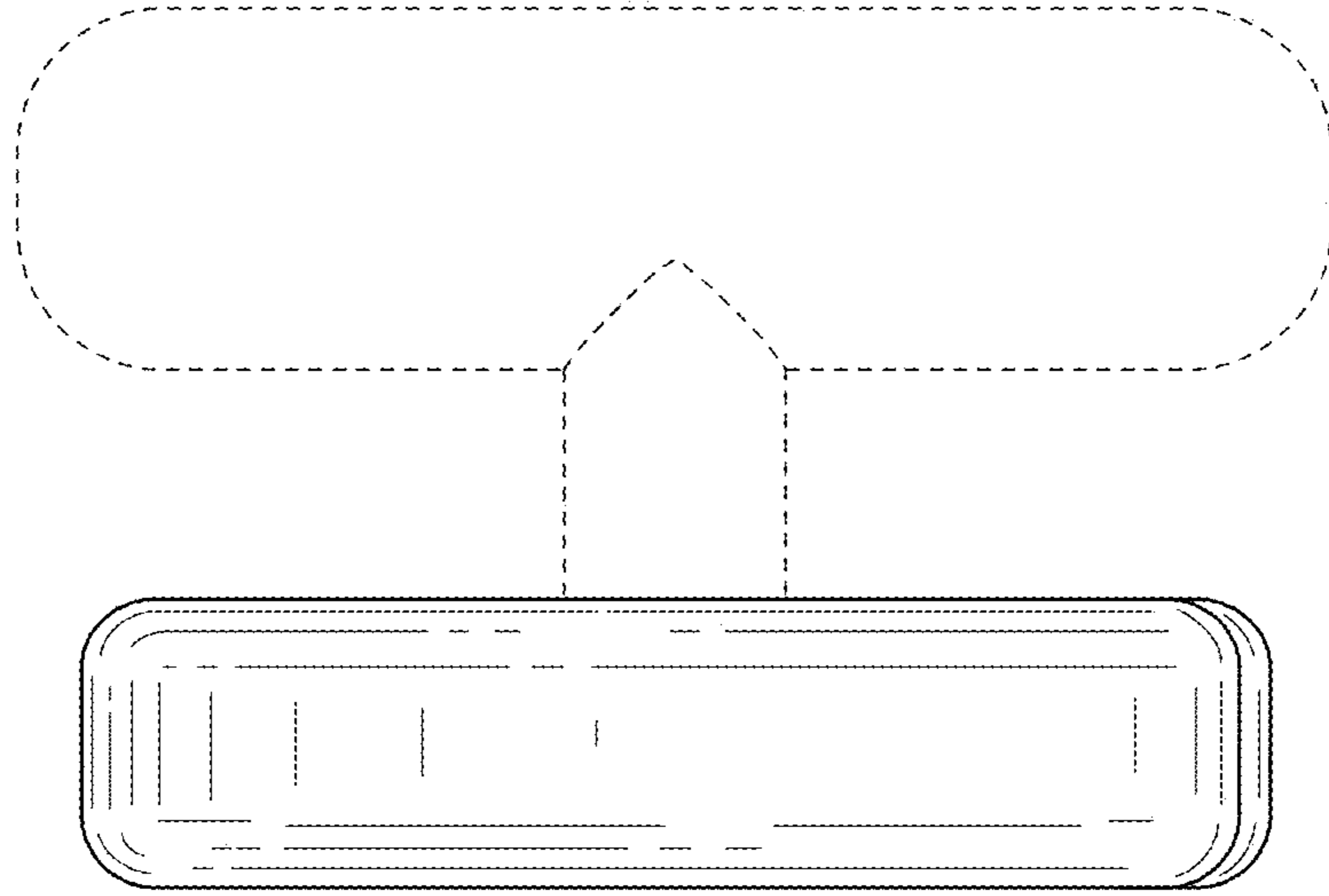


FIG. 54

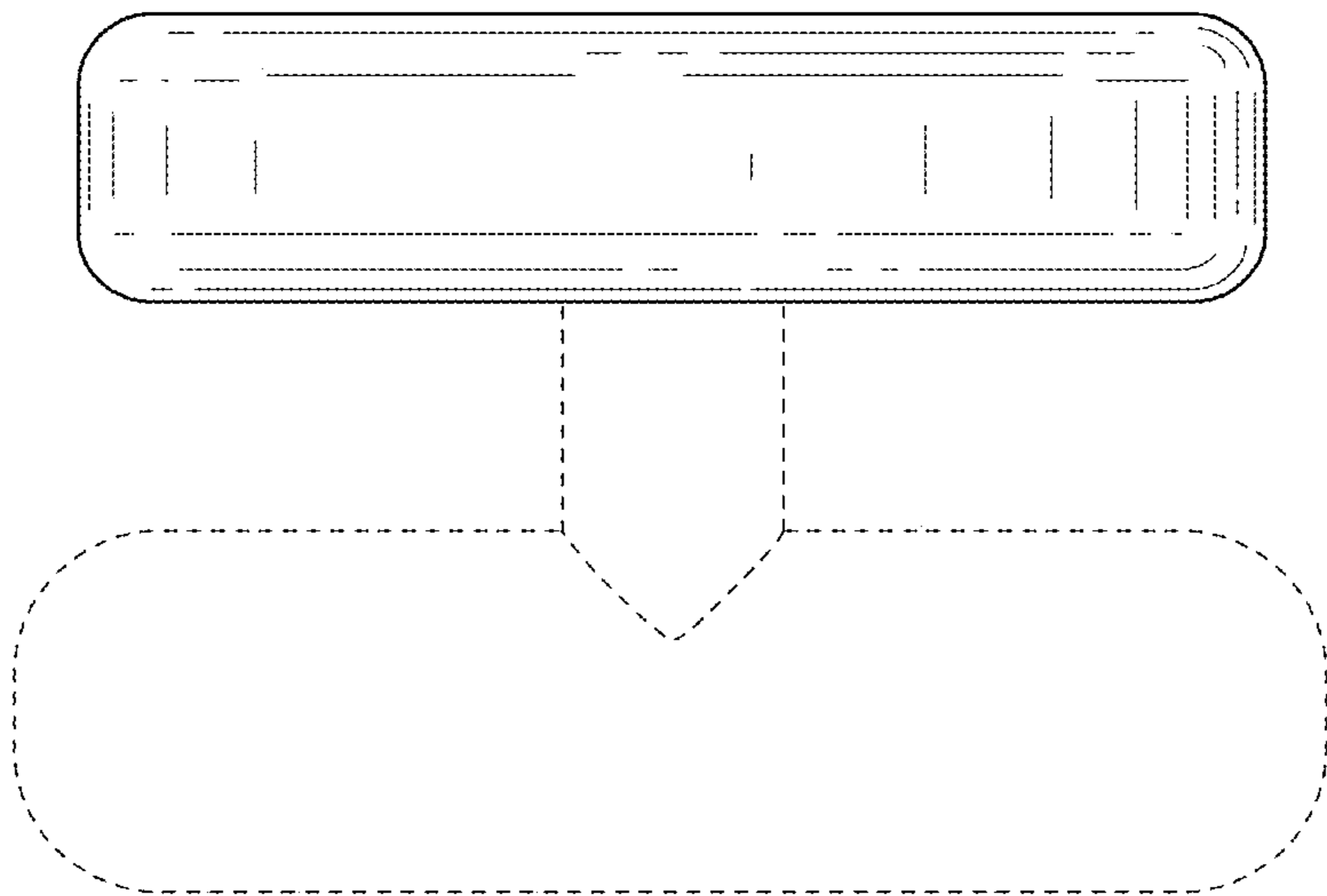


FIG. 55

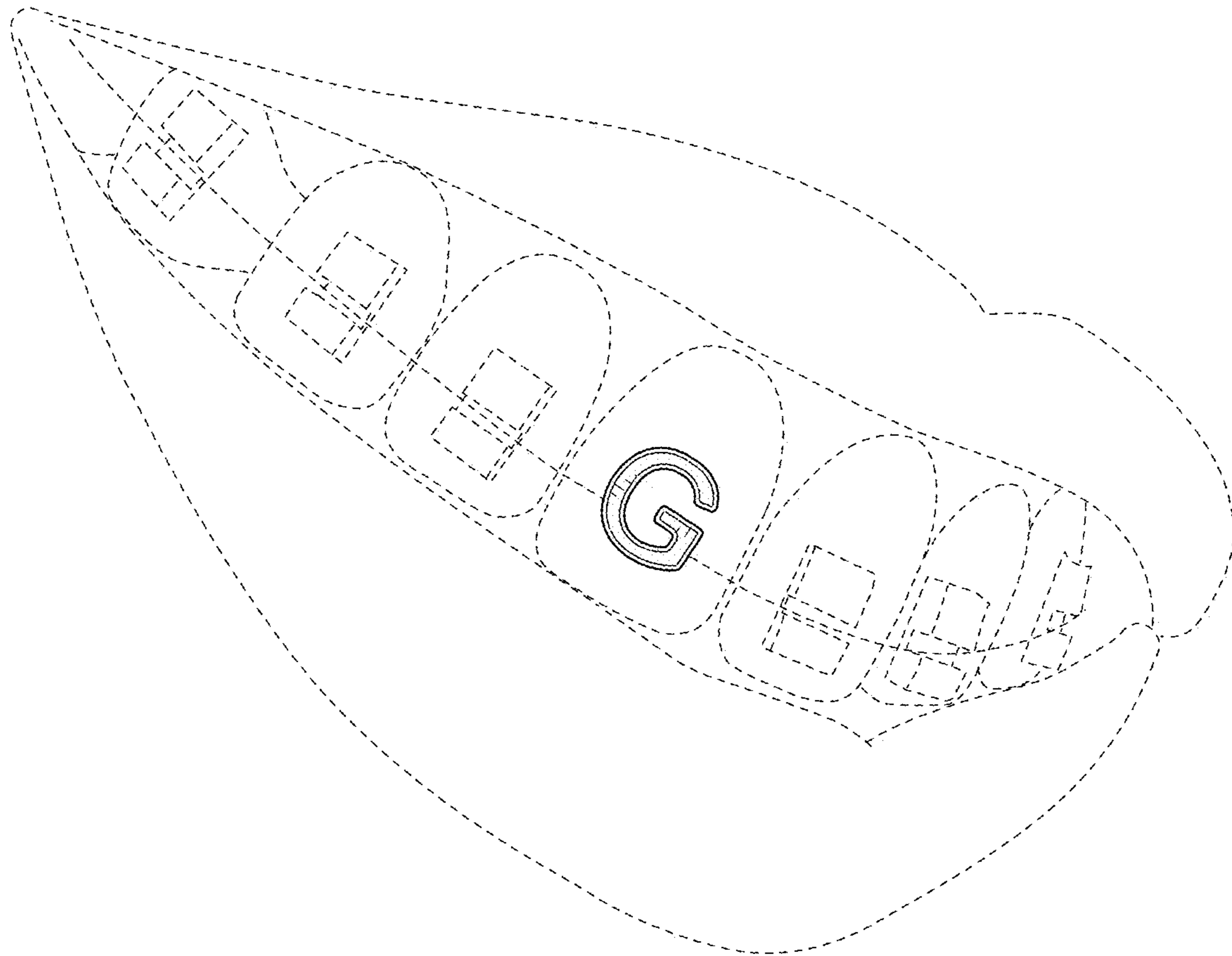


FIG. 56

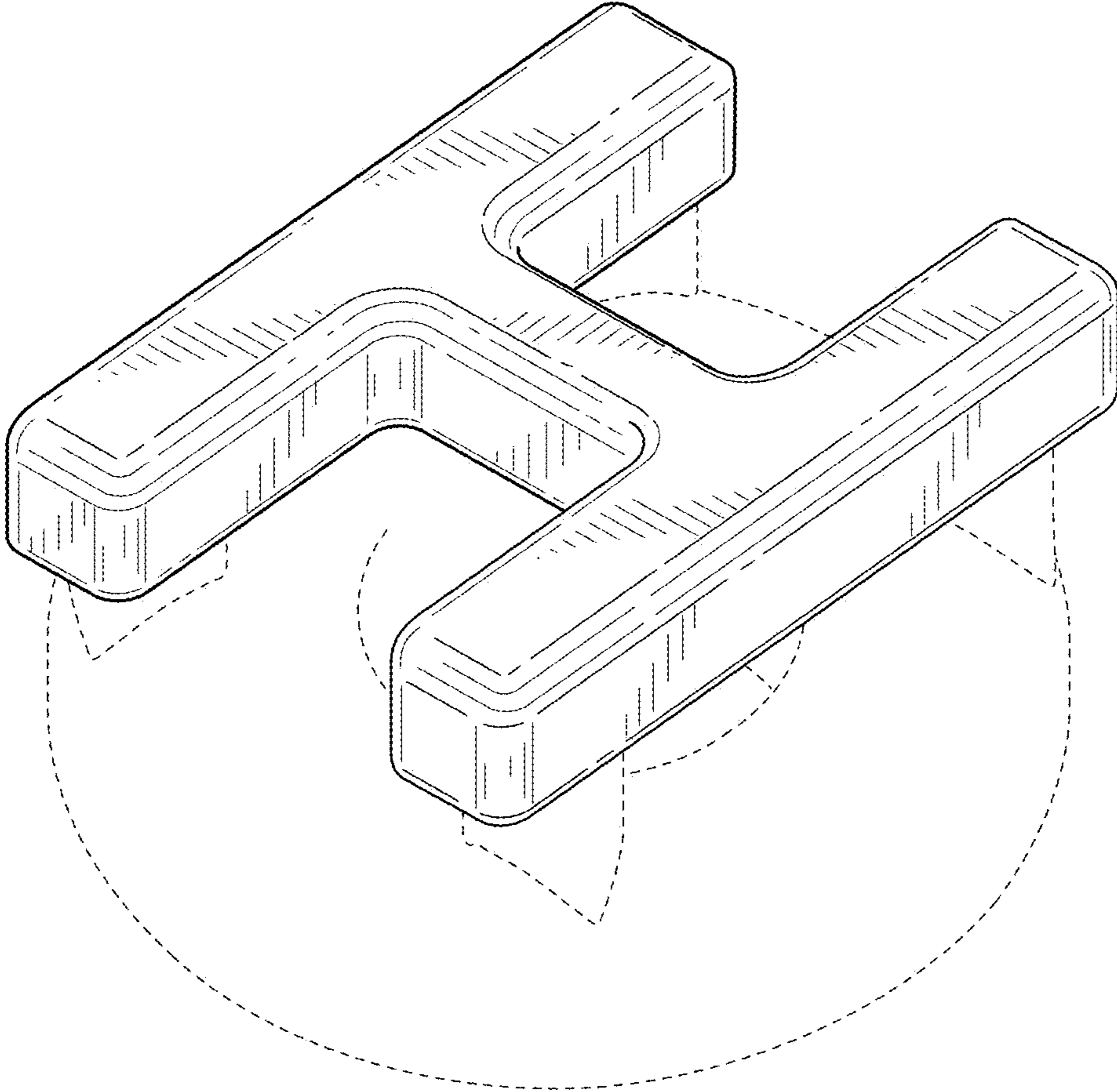


FIG. 57

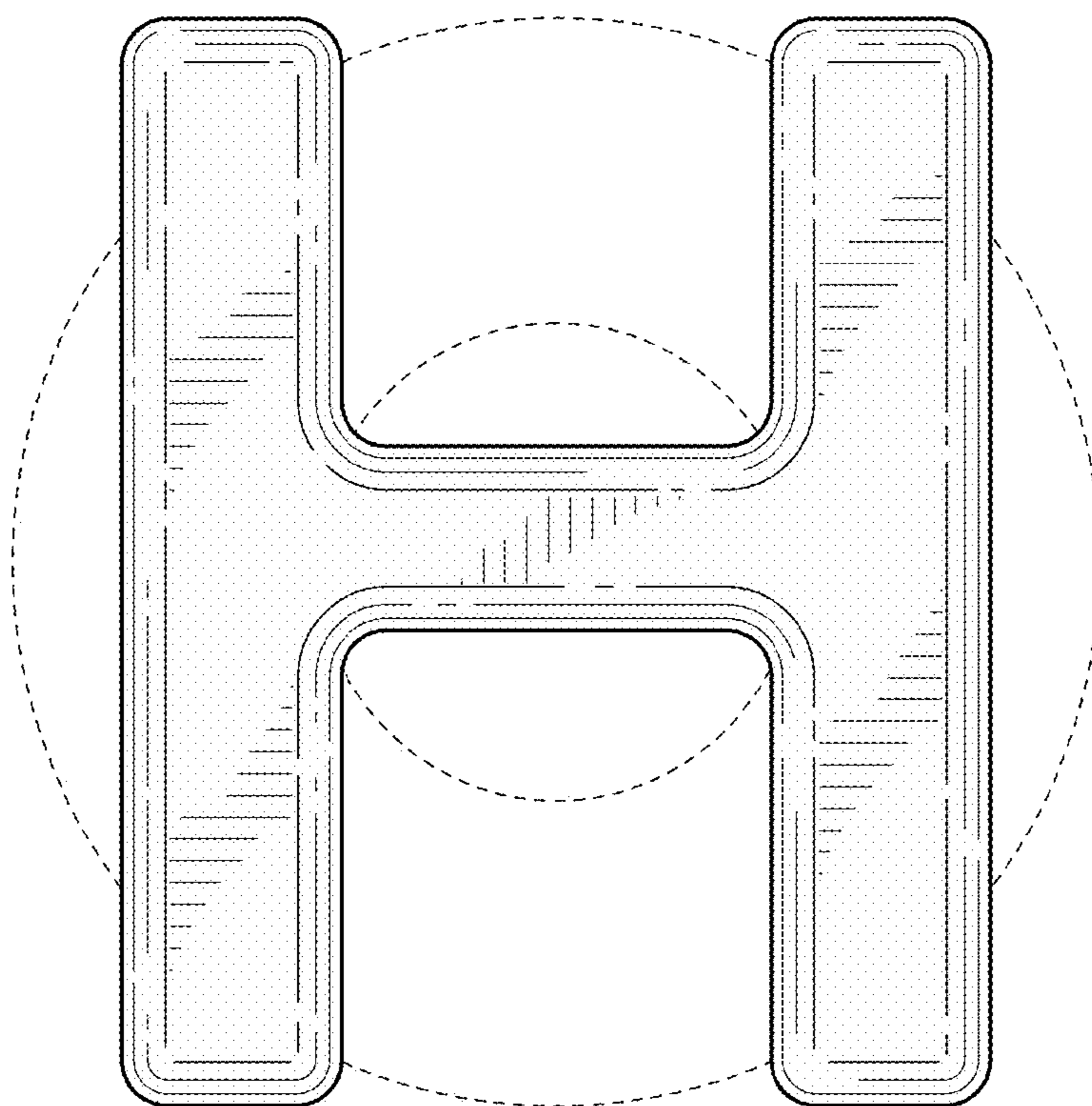


FIG. 58

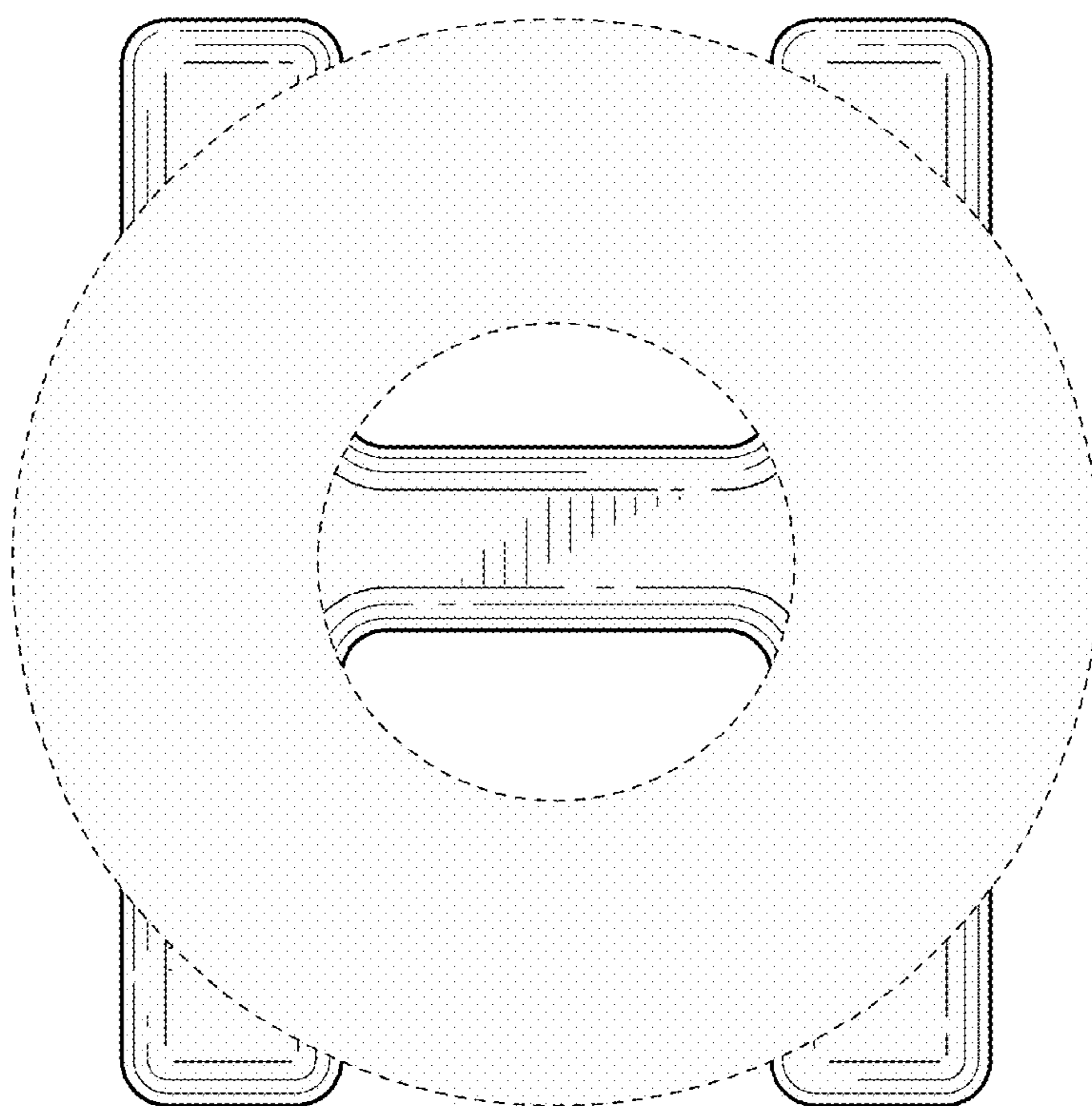


FIG. 59

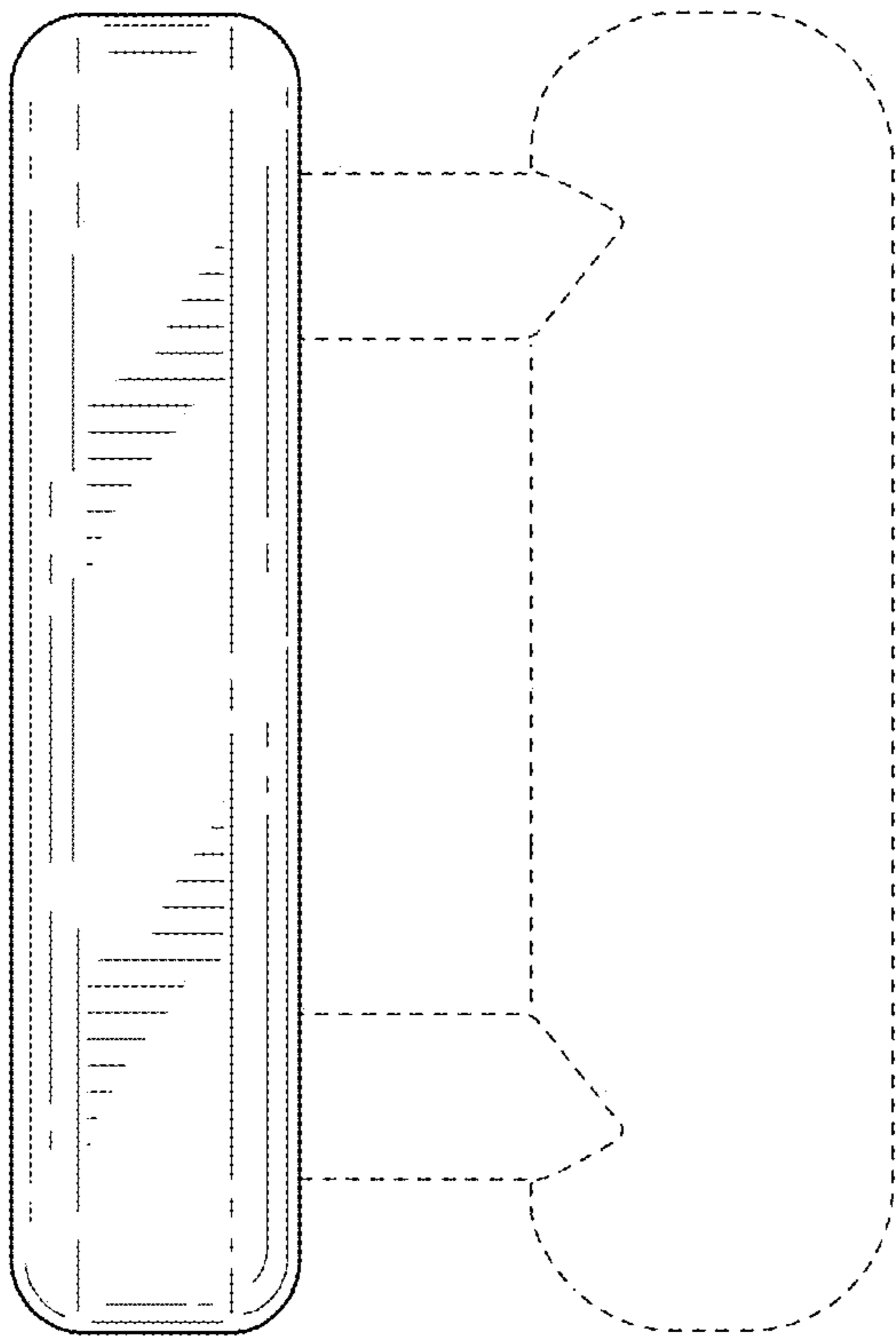


FIG. 60

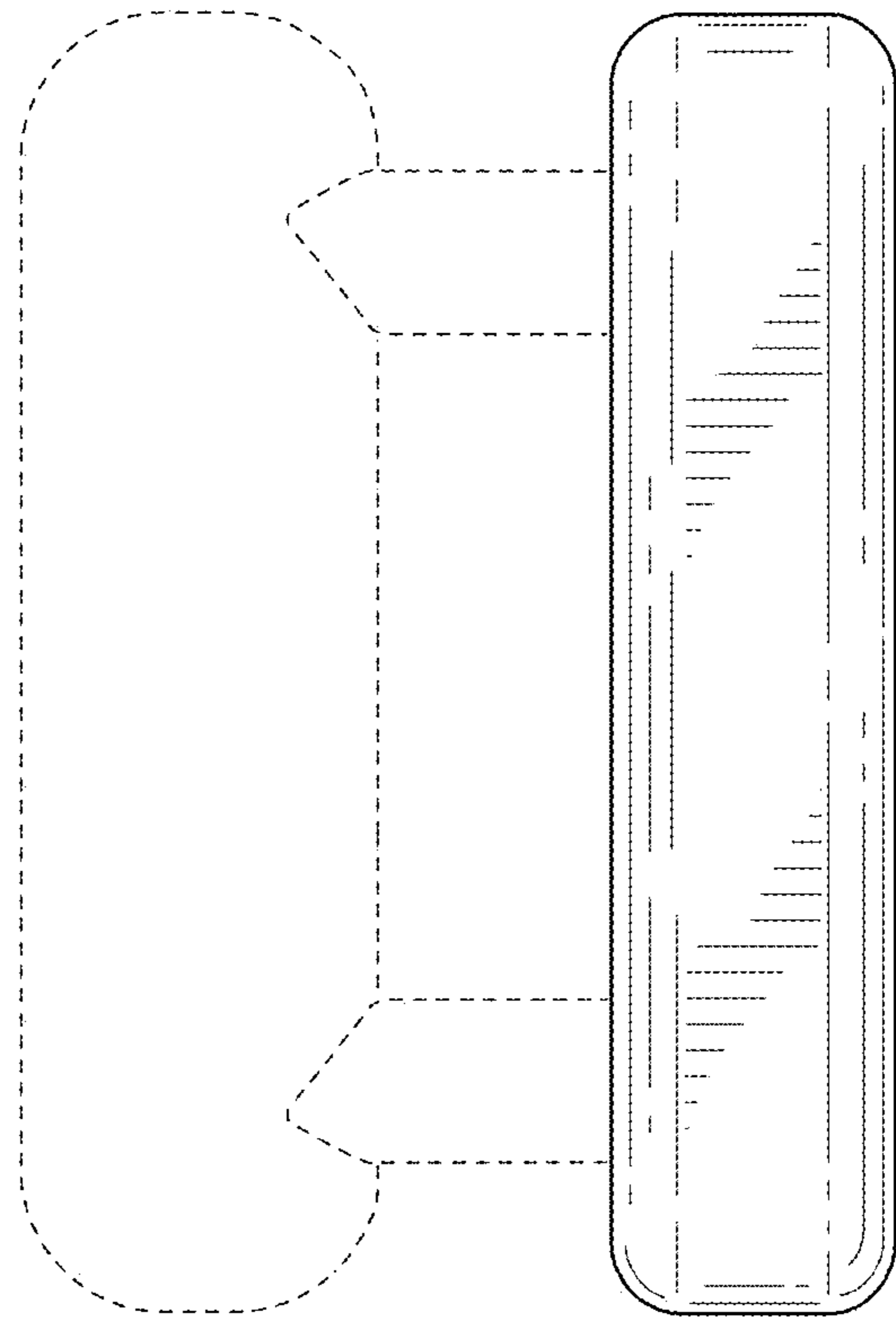


FIG. 61

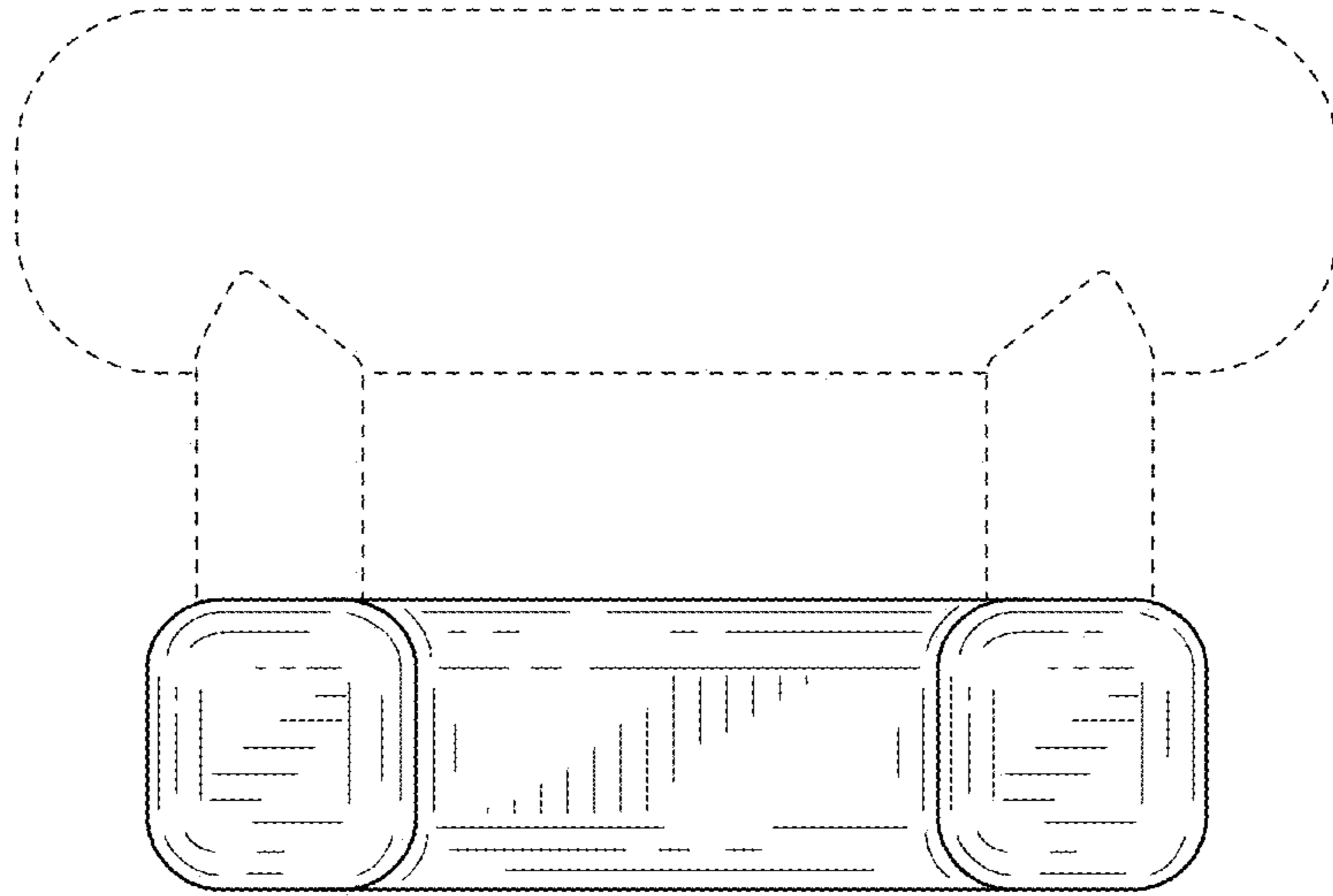


FIG. 62

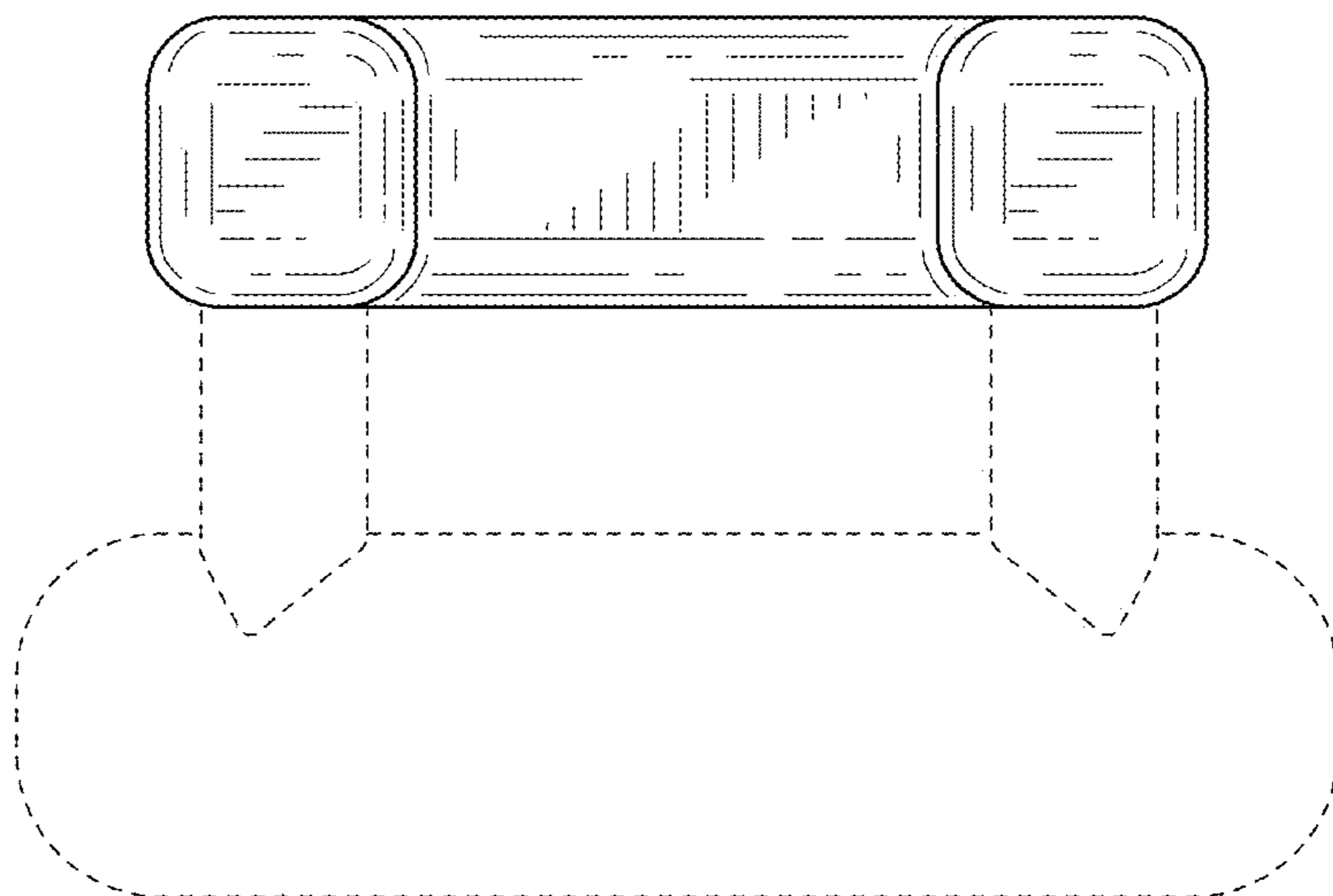


FIG. 63

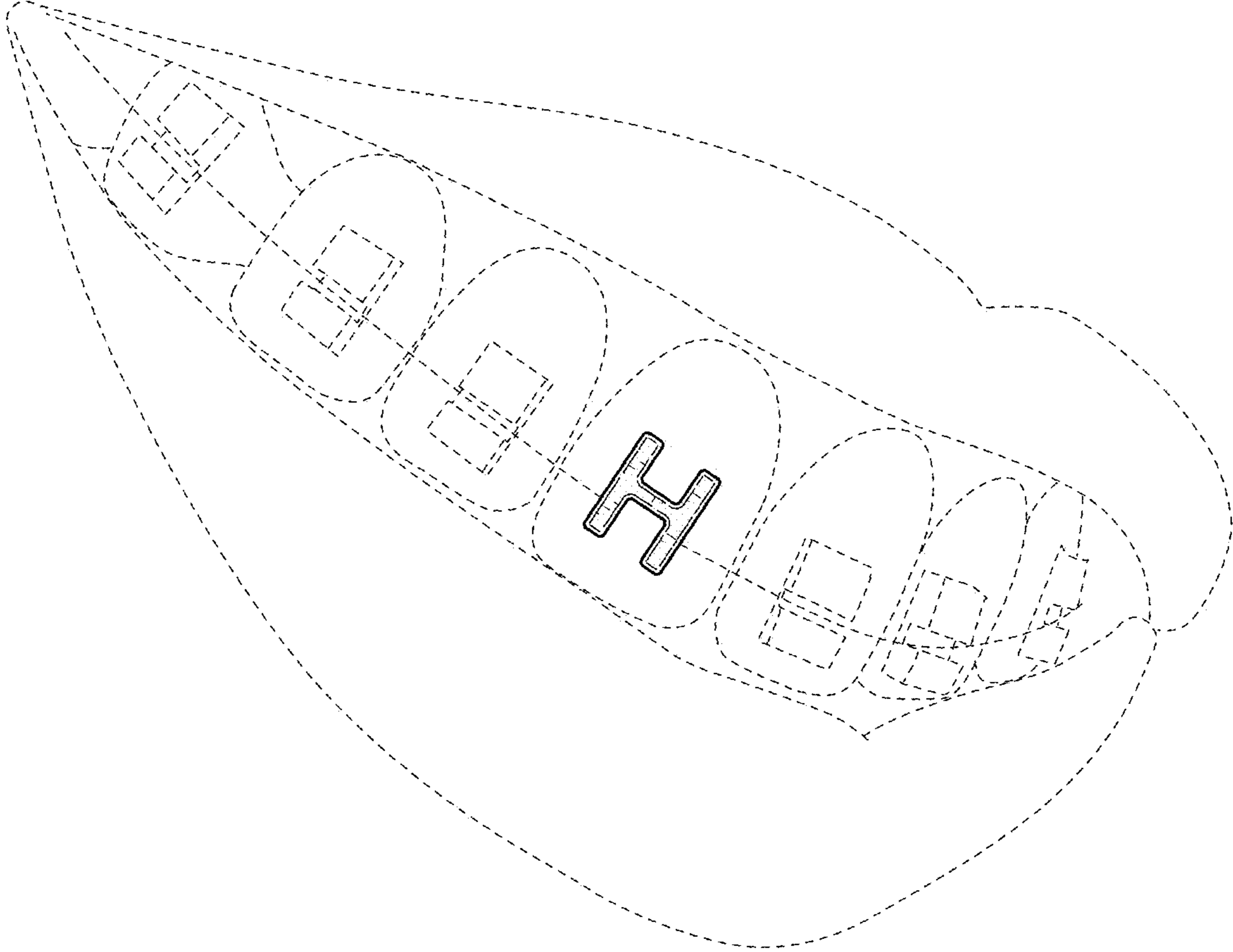


FIG. 64

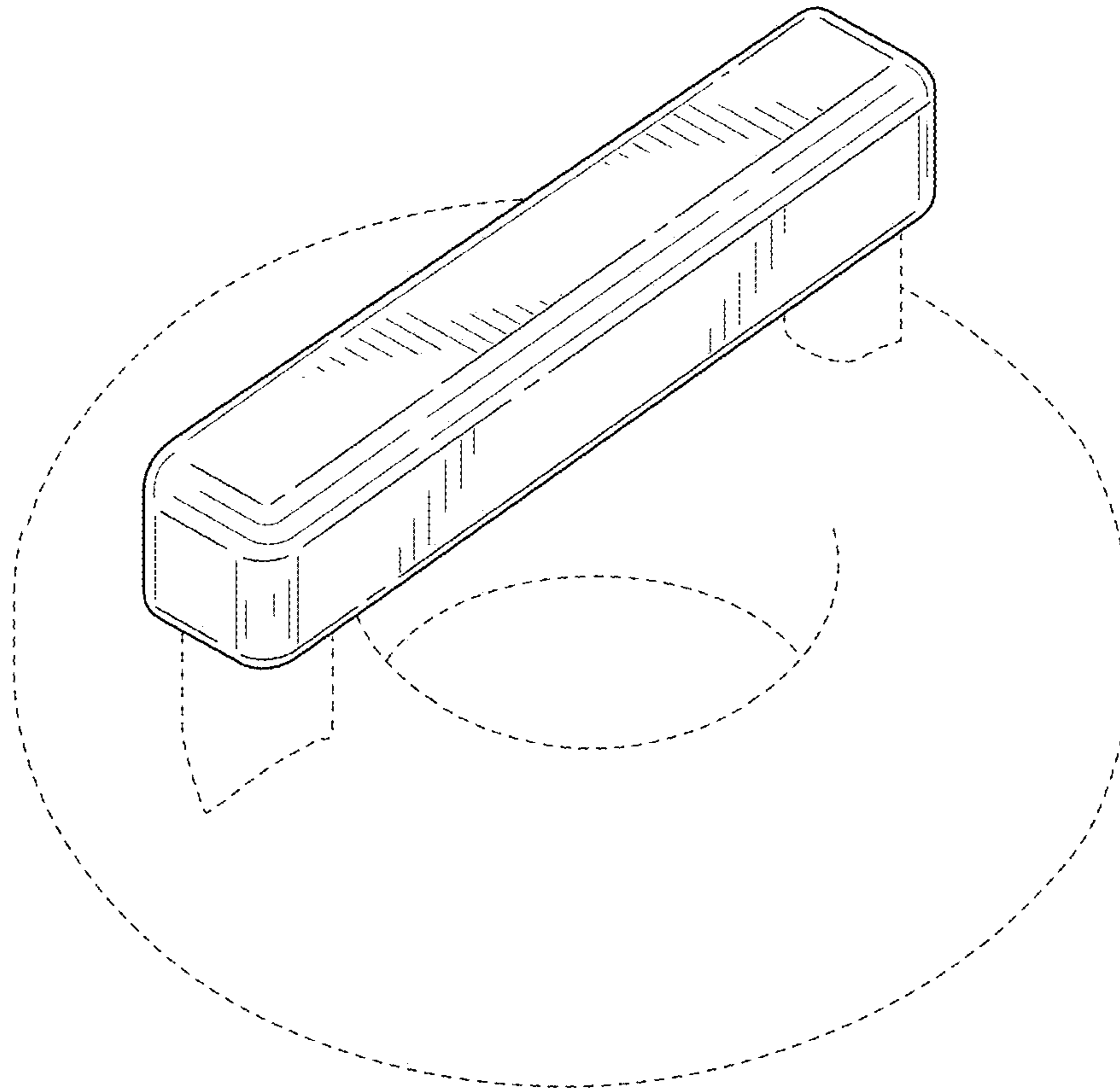


FIG. 65

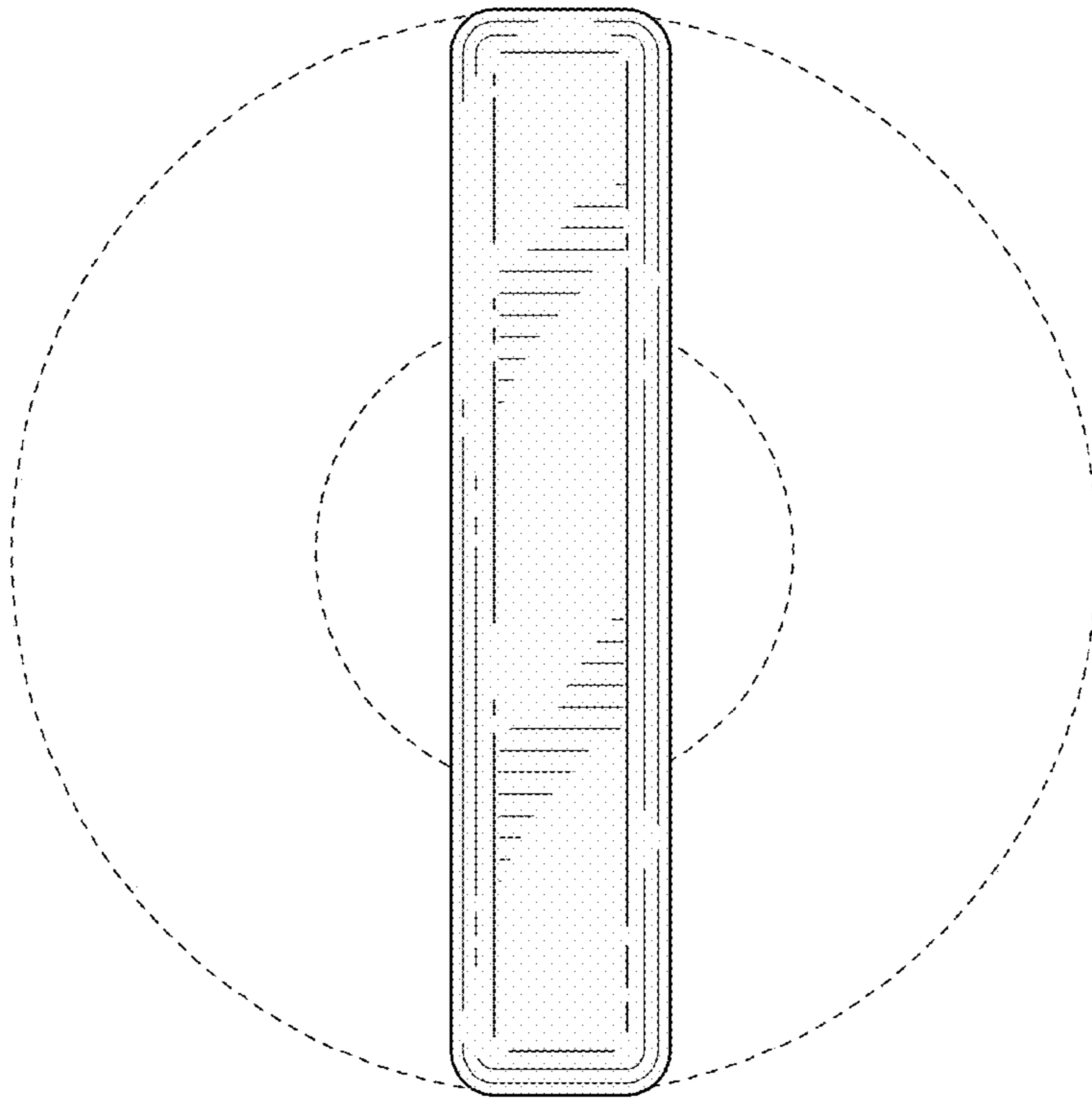


FIG. 66

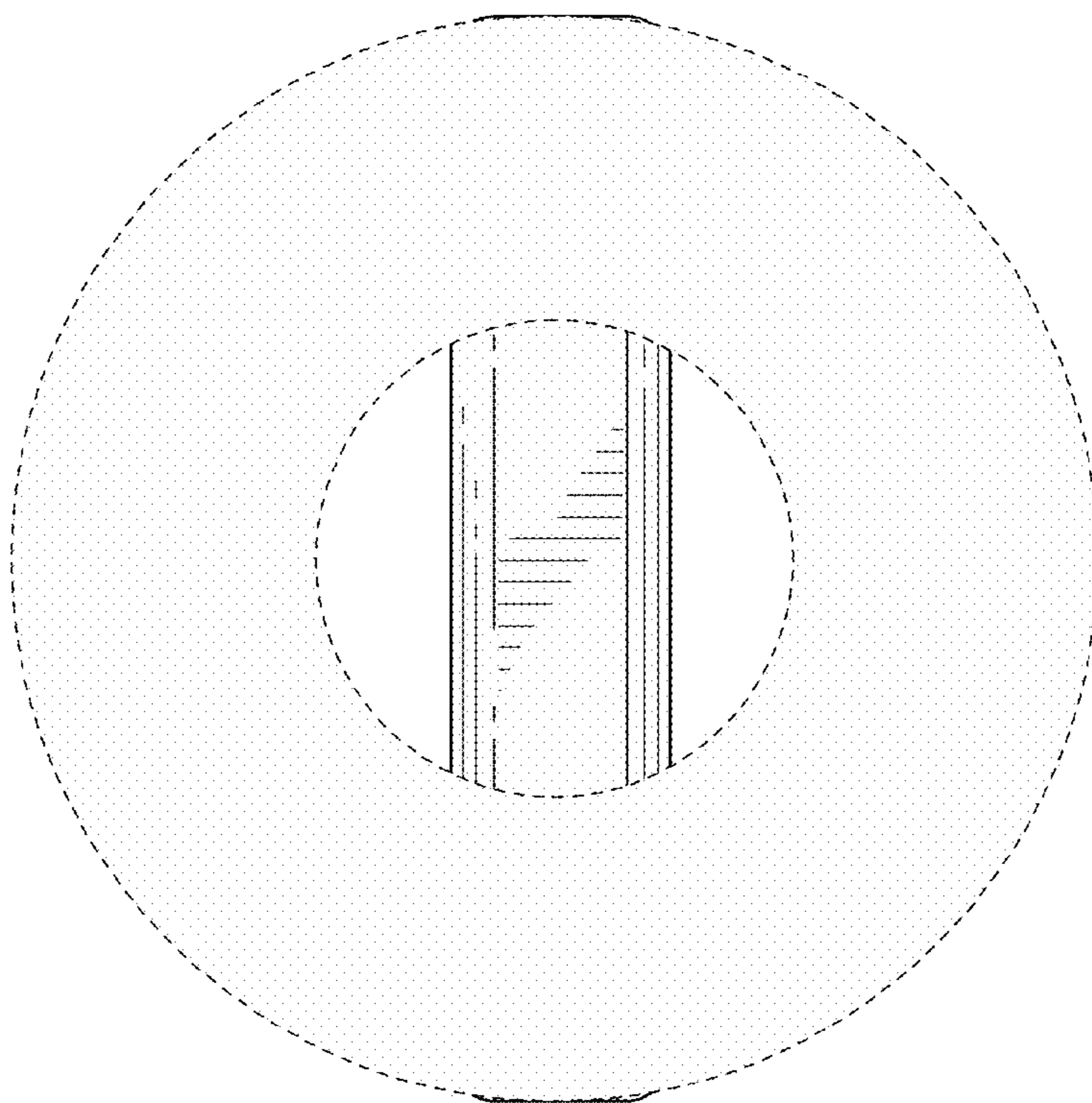


FIG. 67

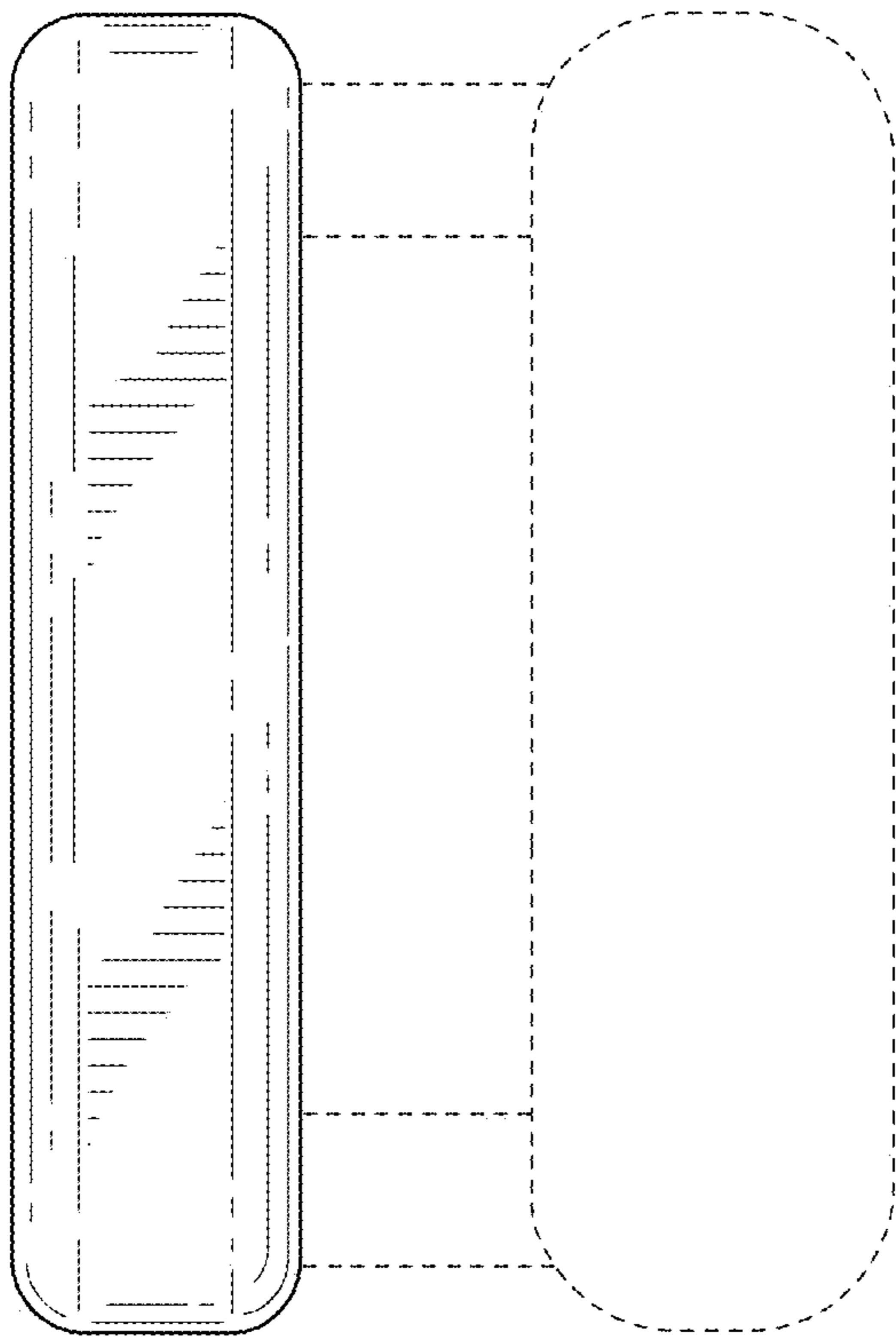


FIG. 68

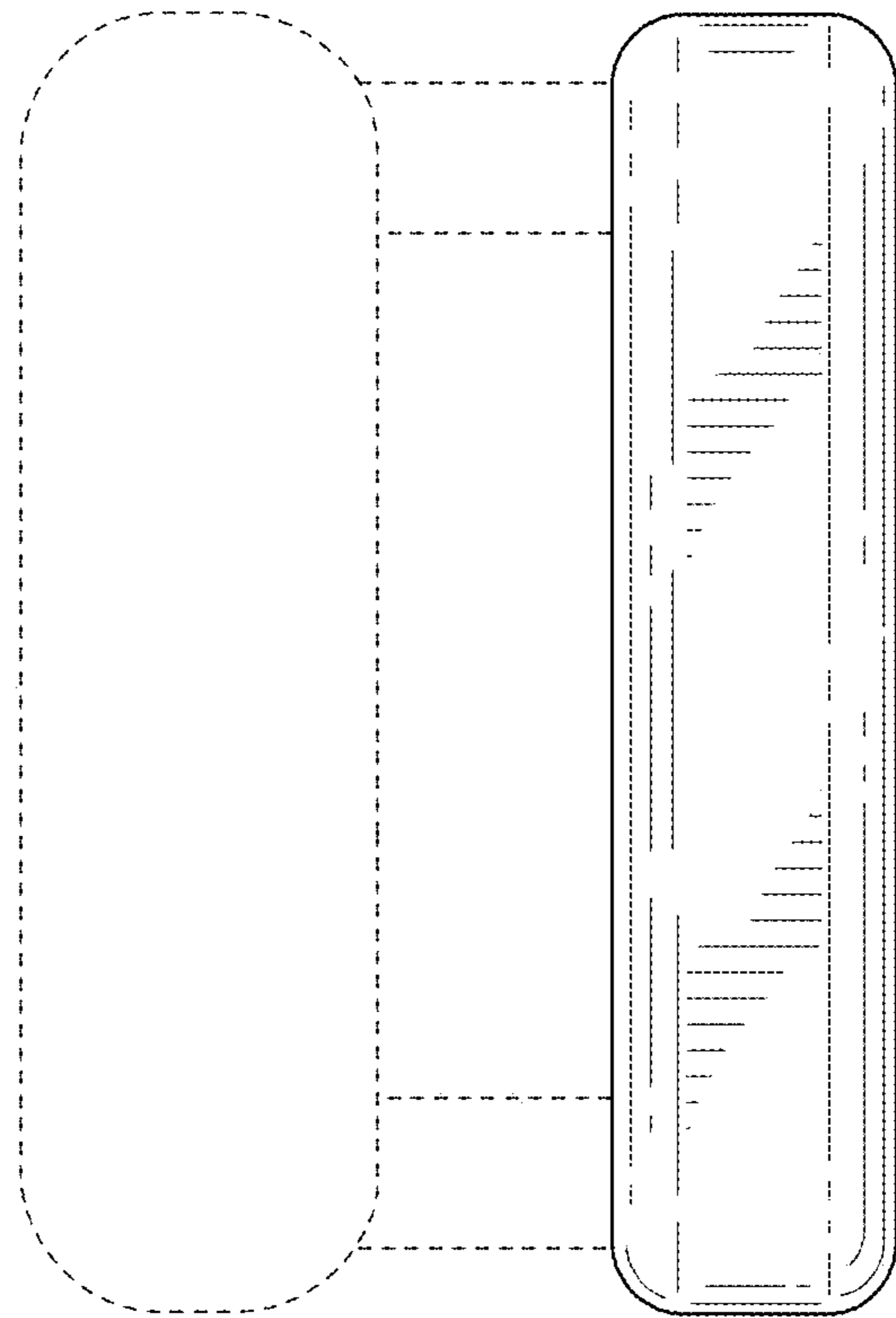


FIG. 69

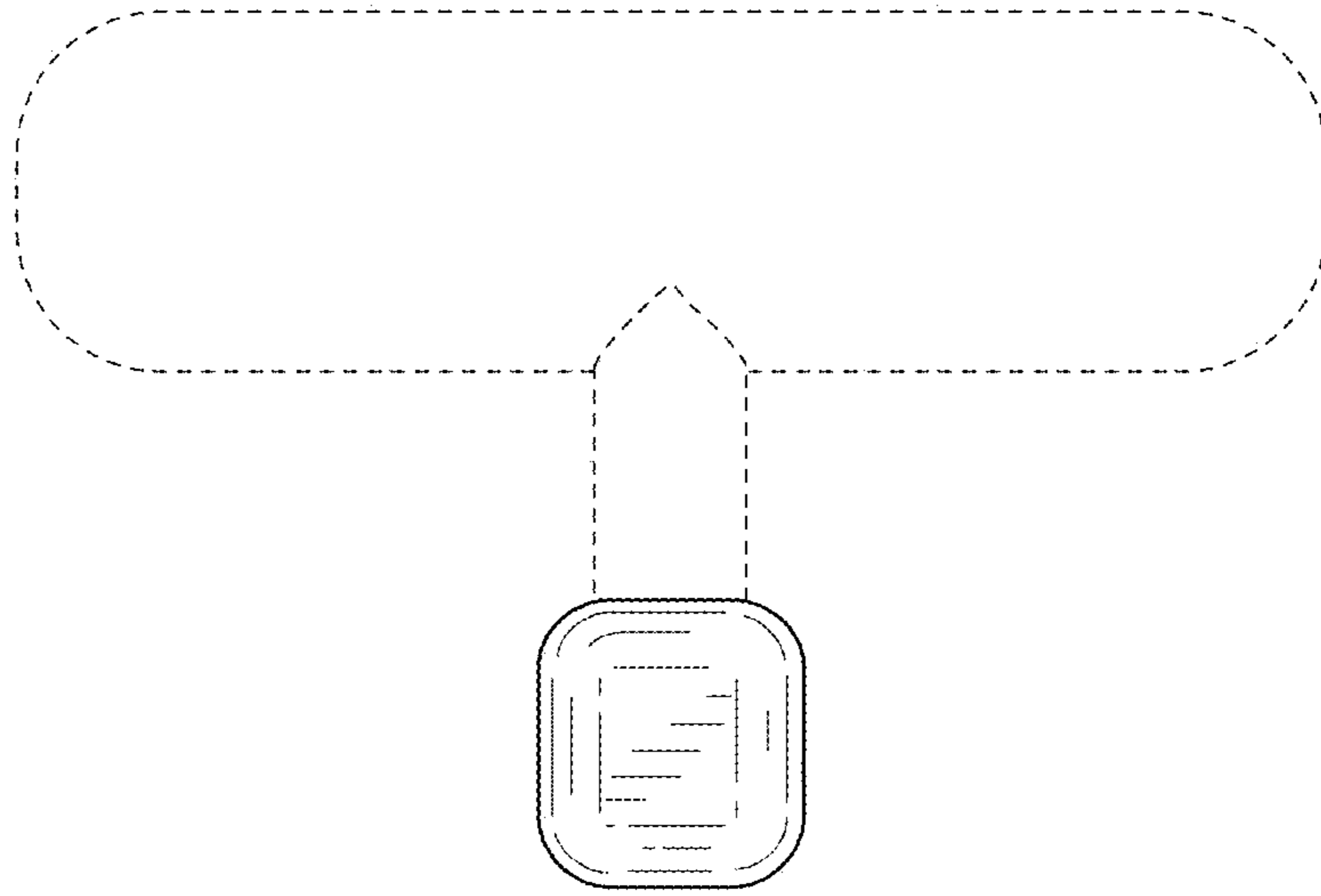


FIG. 70

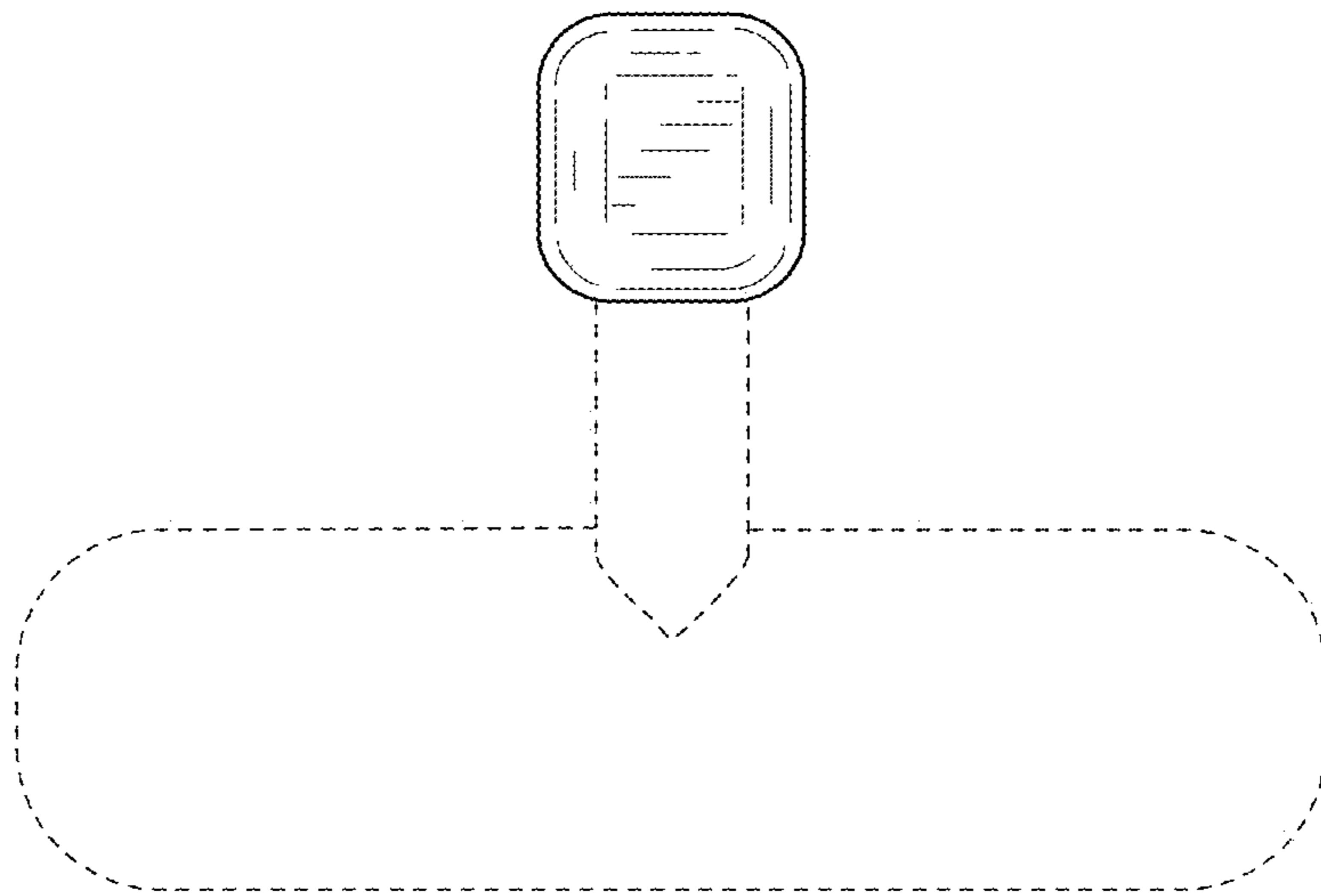


FIG. 71

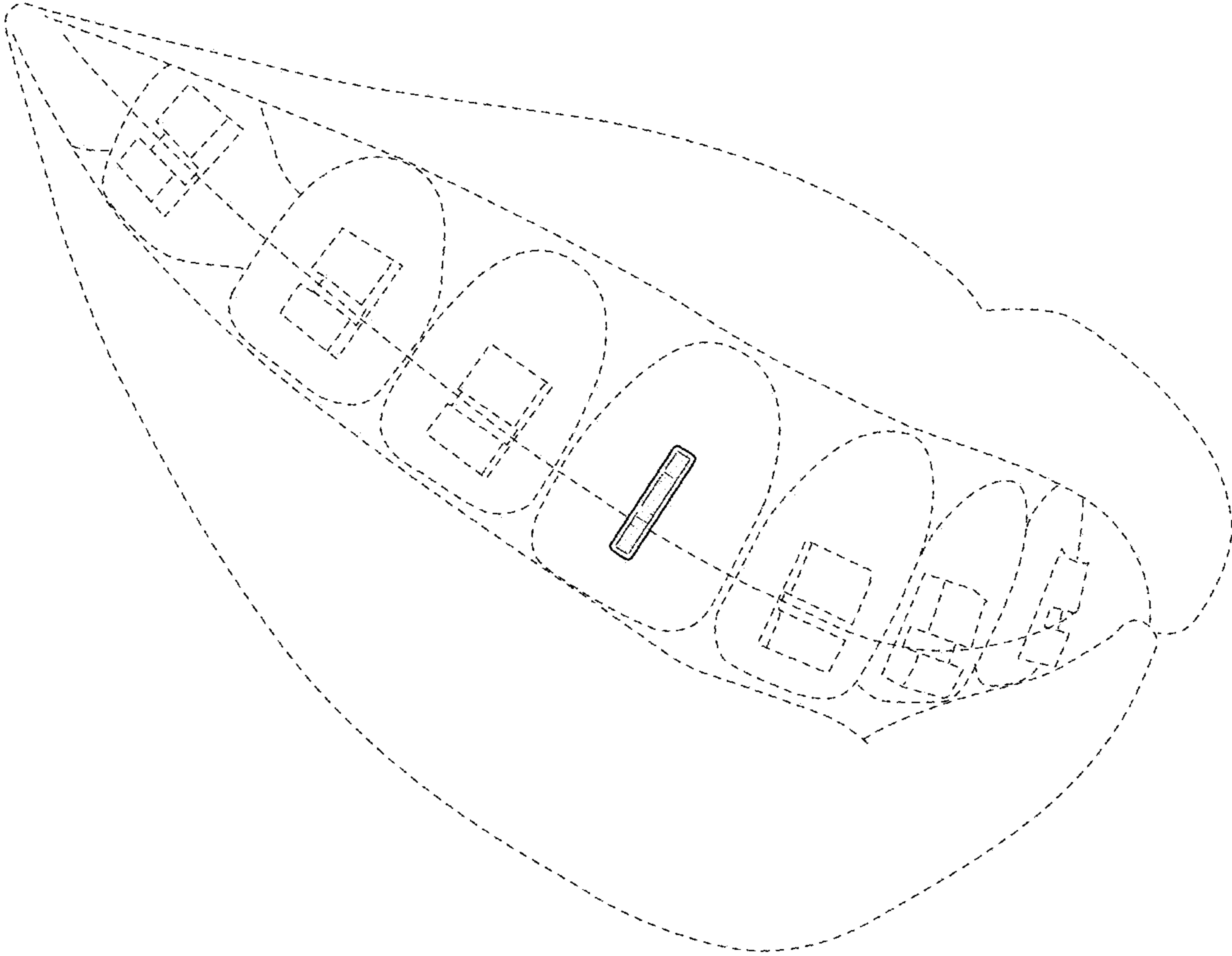


FIG. 72

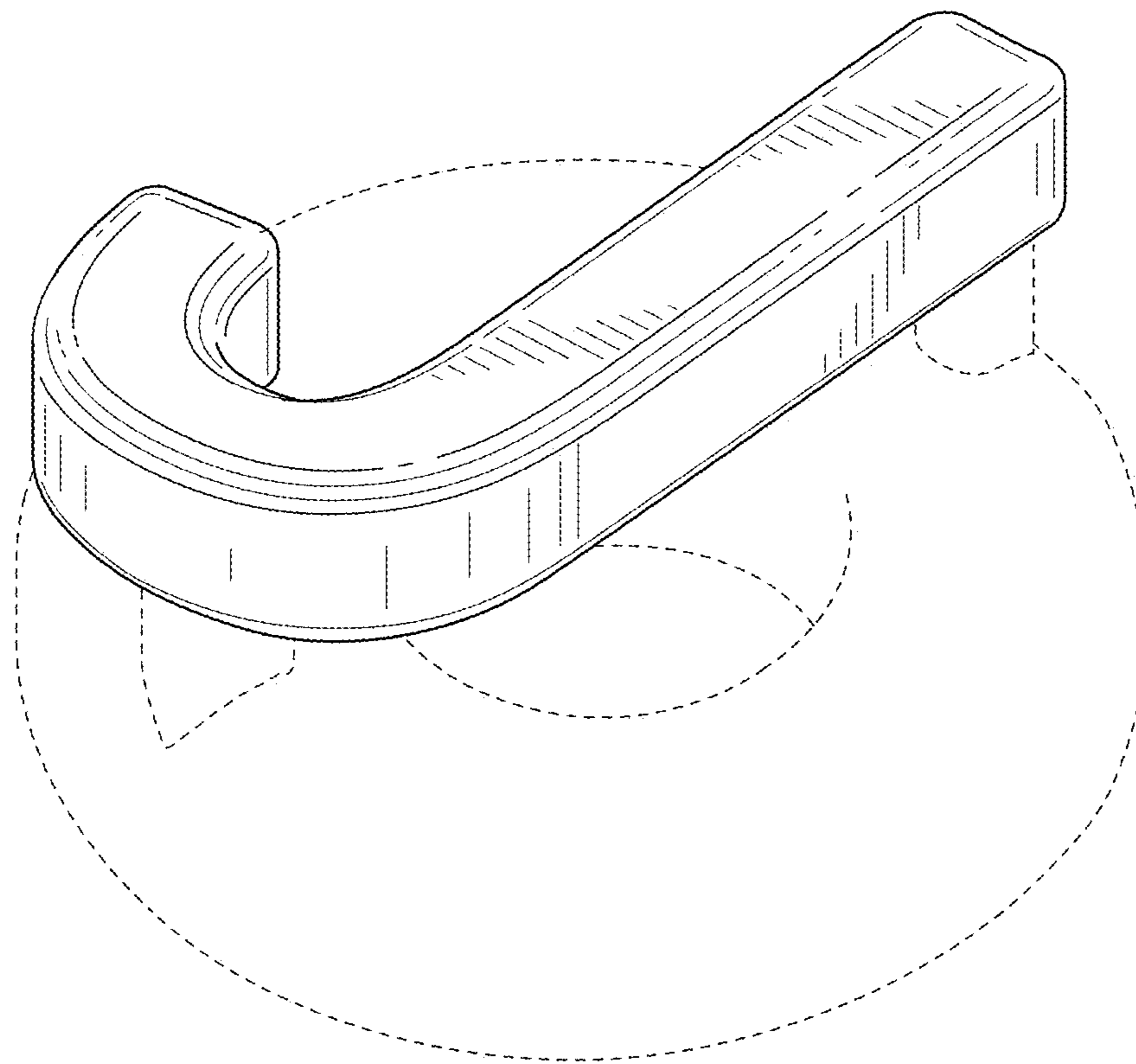


FIG. 73

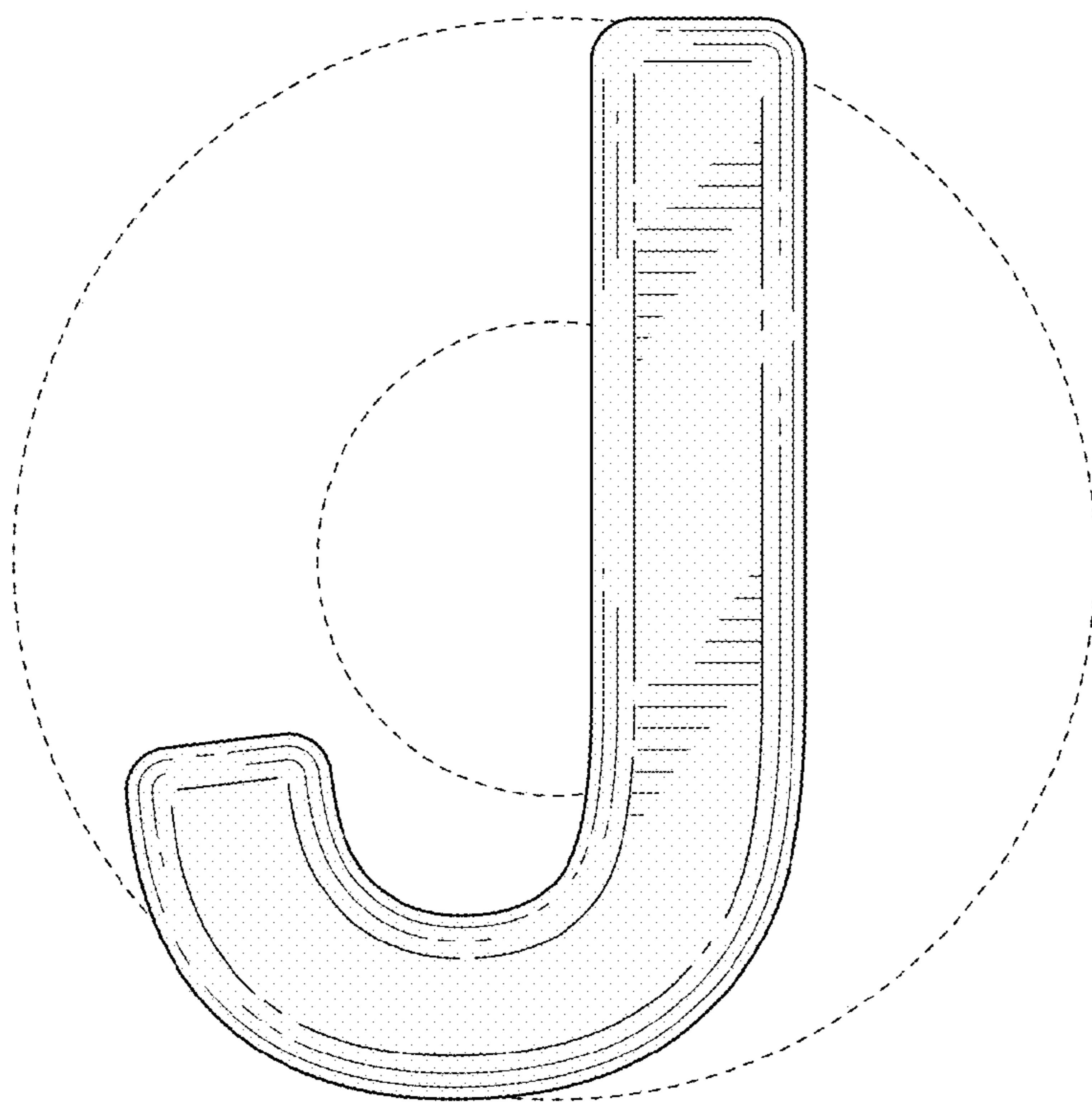


FIG. 74

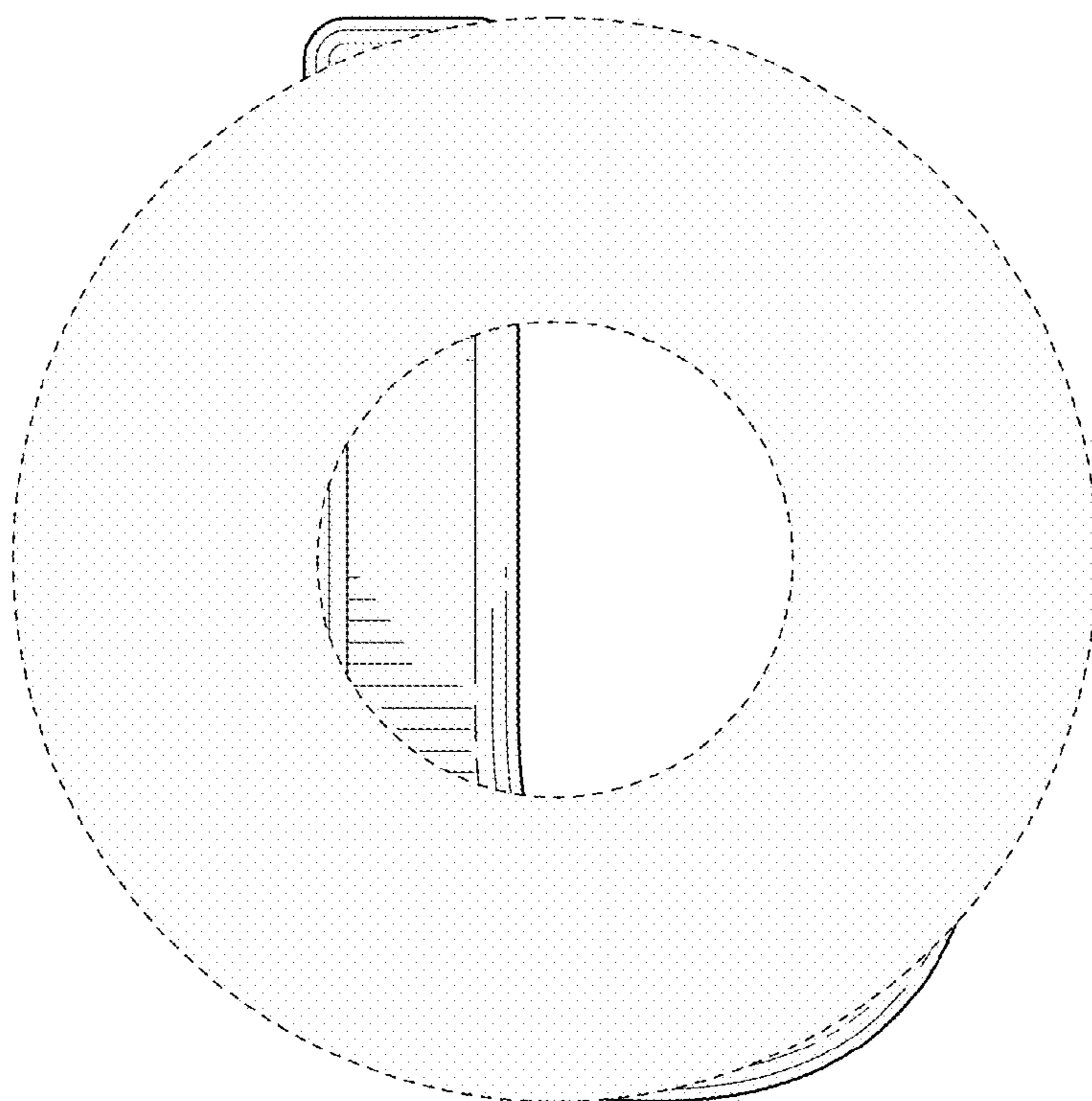


FIG. 75

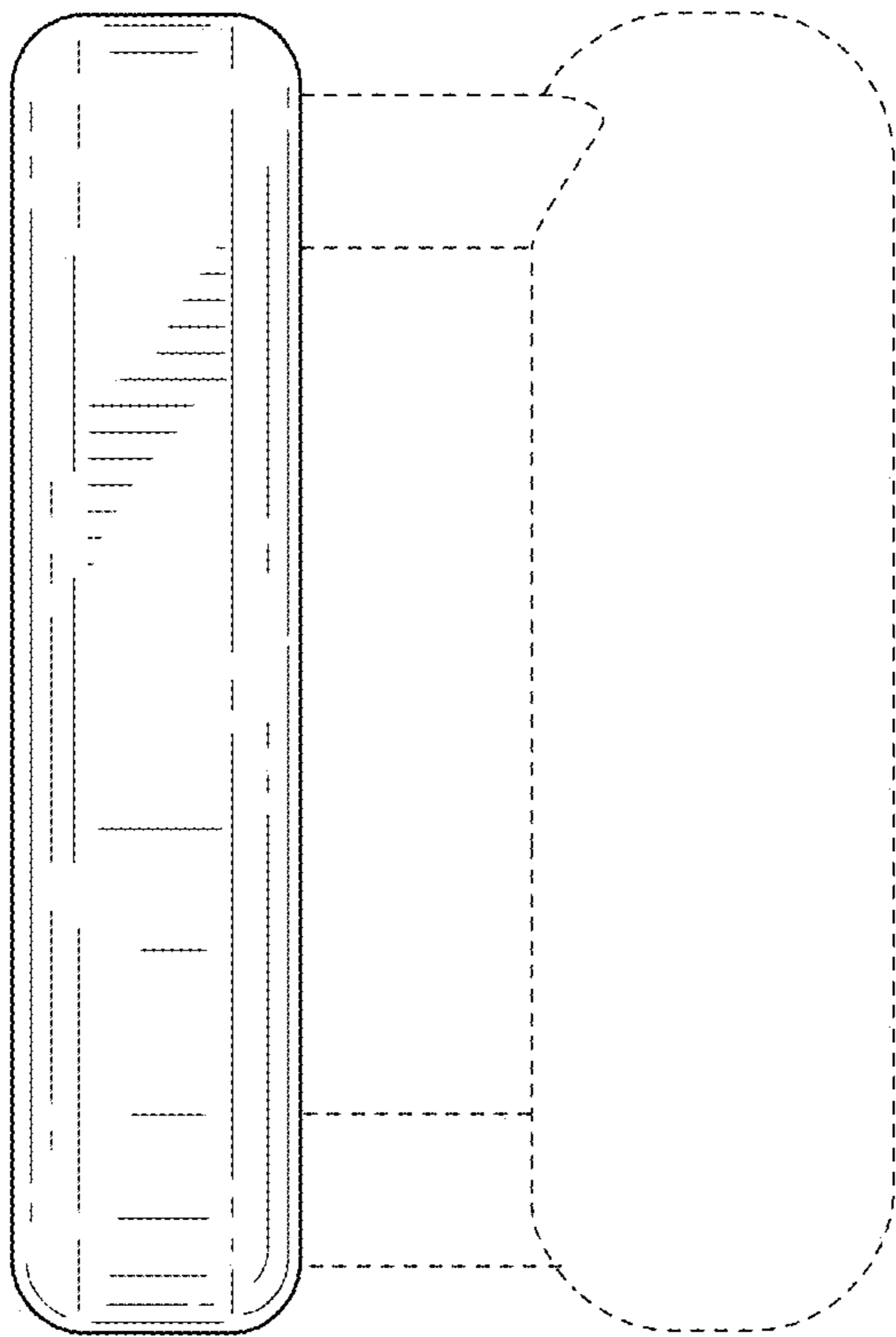


FIG. 76

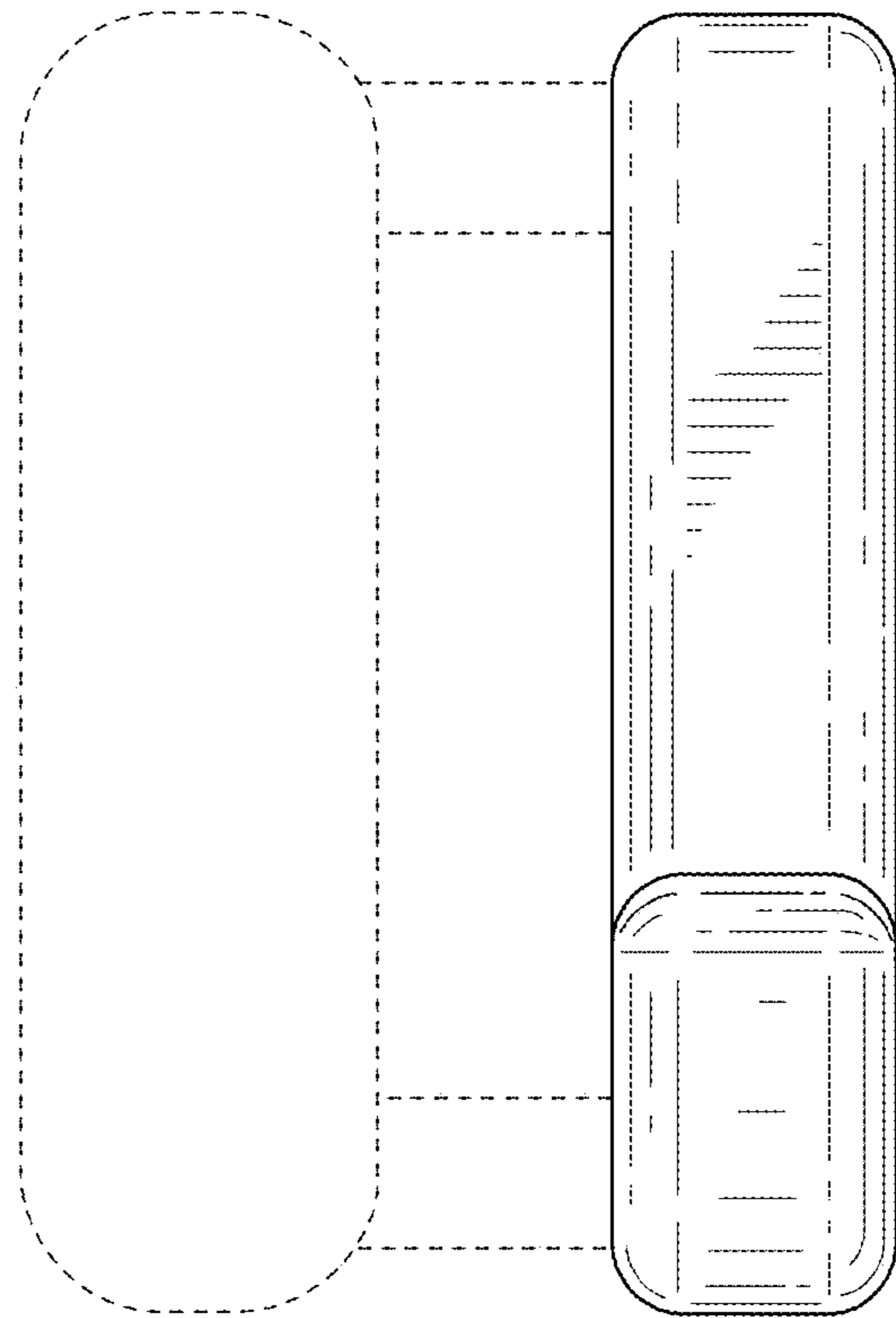


FIG. 77

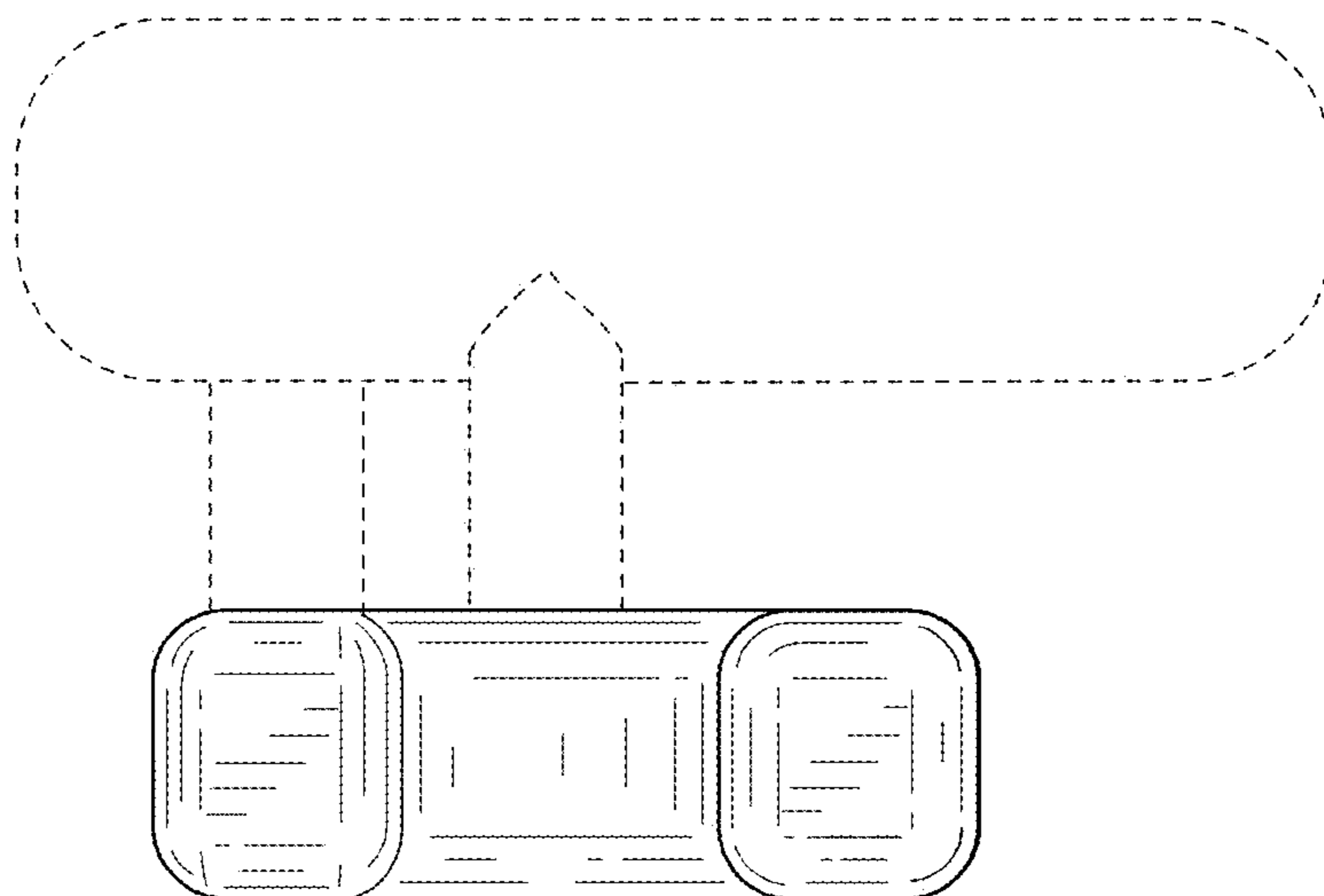


FIG. 78

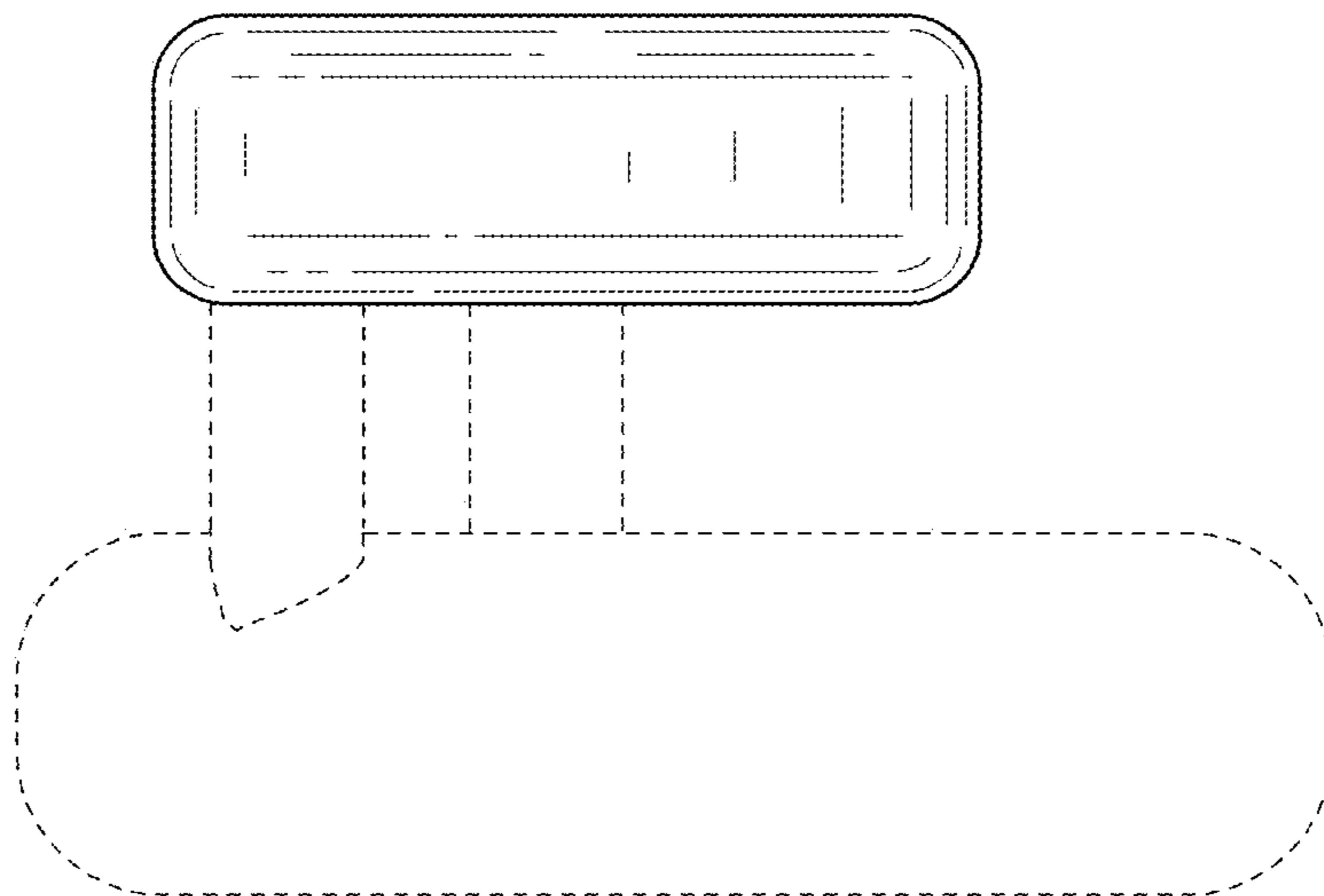


FIG. 79

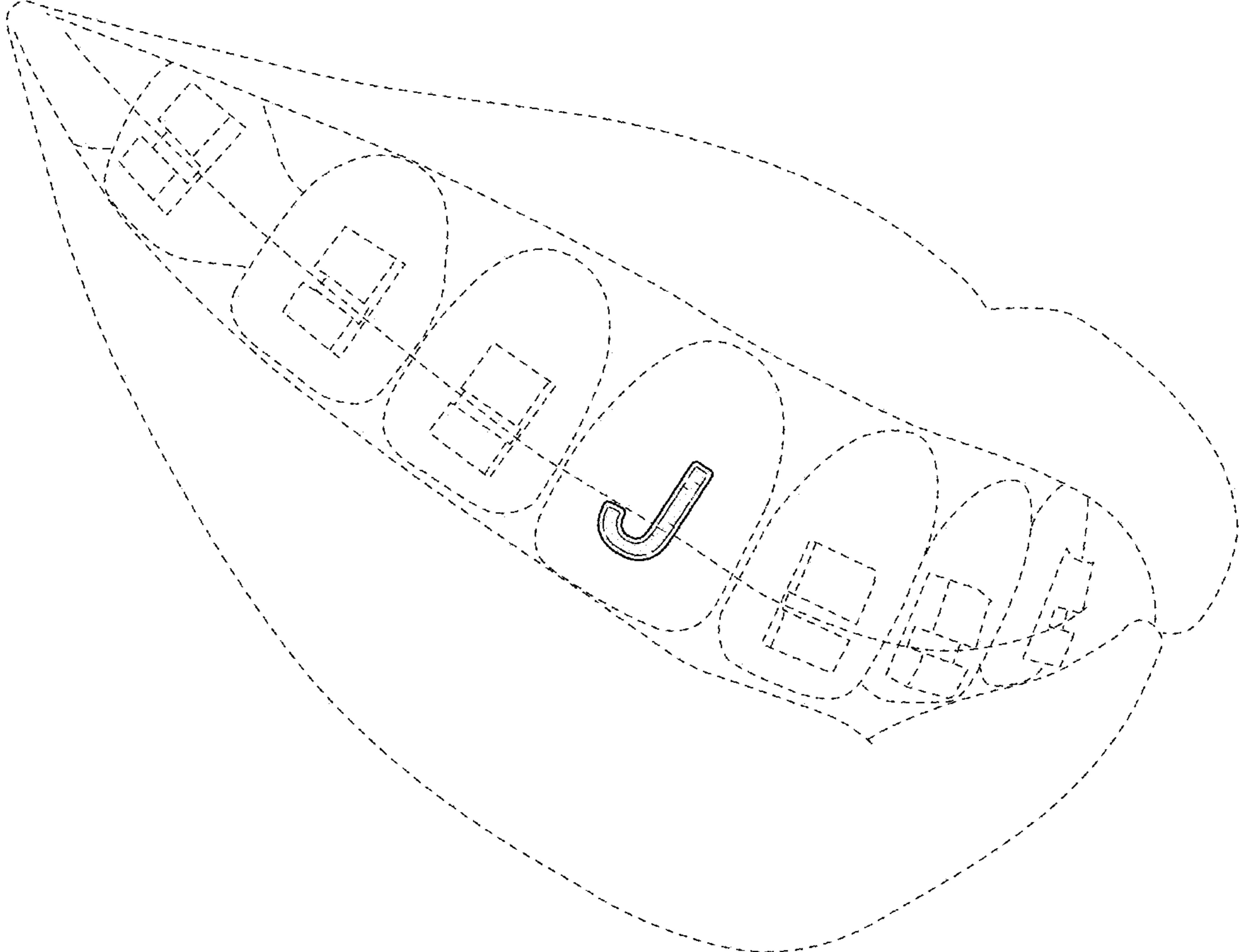


FIG. 80

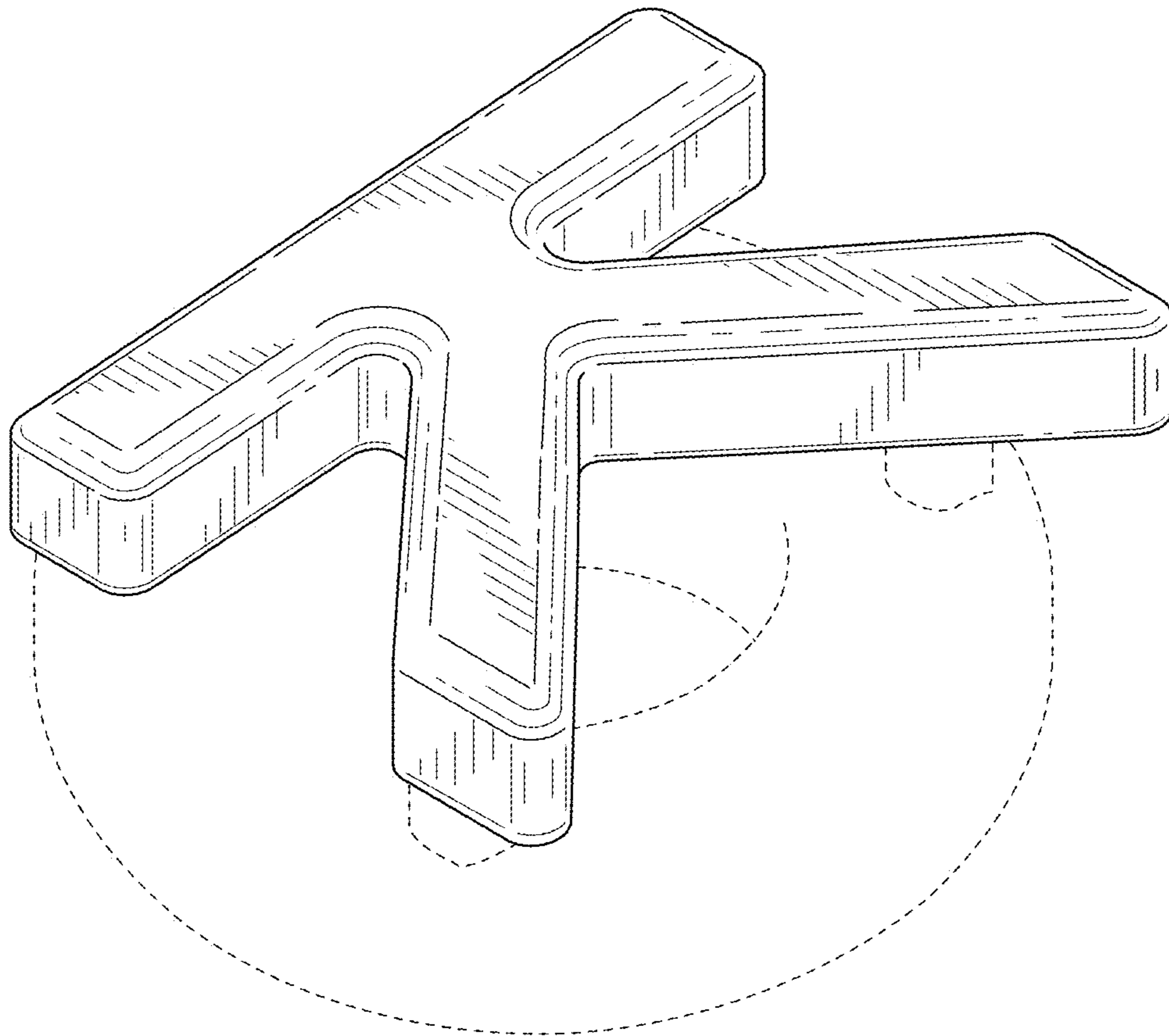


FIG. 81

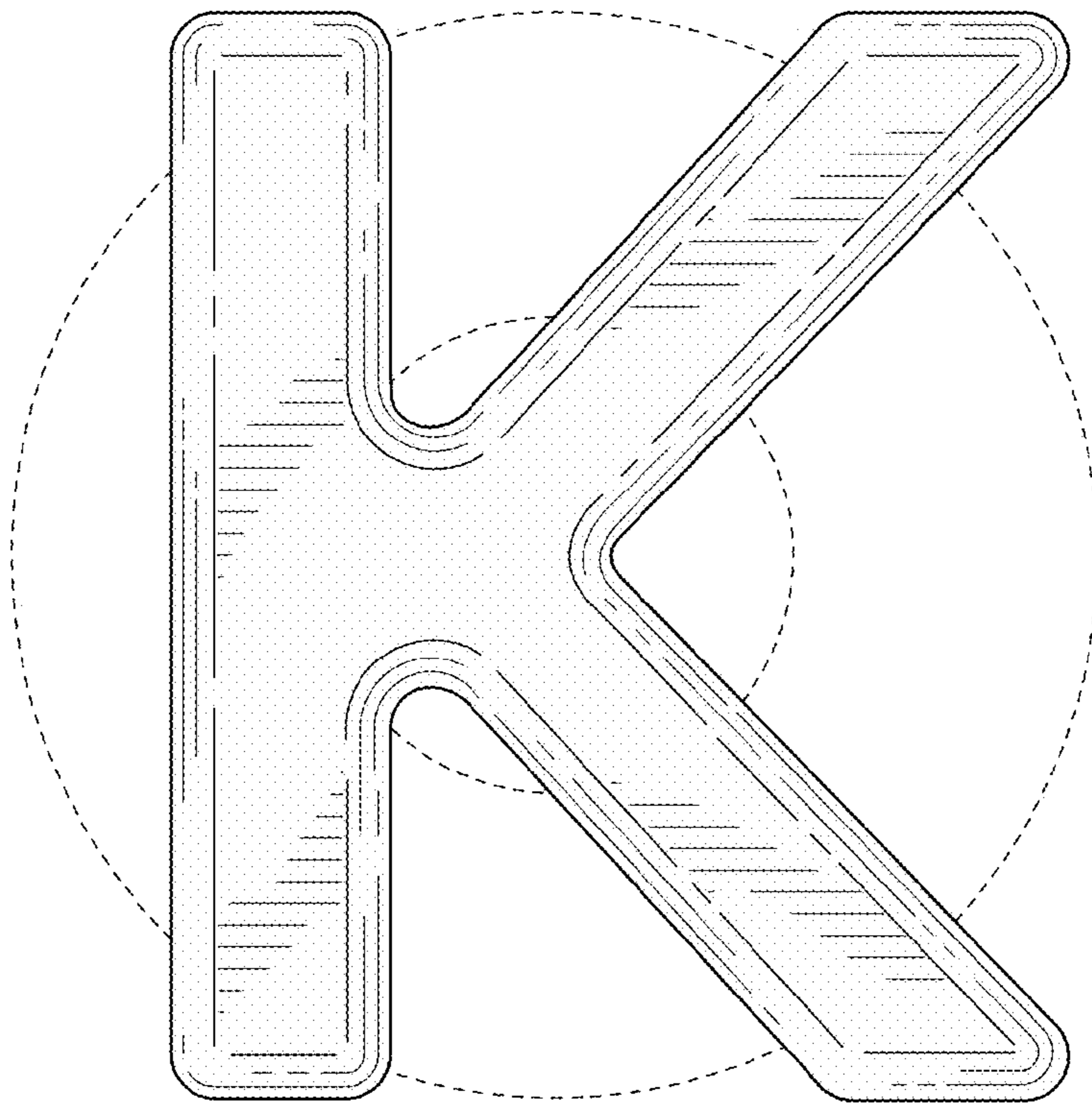


FIG. 82

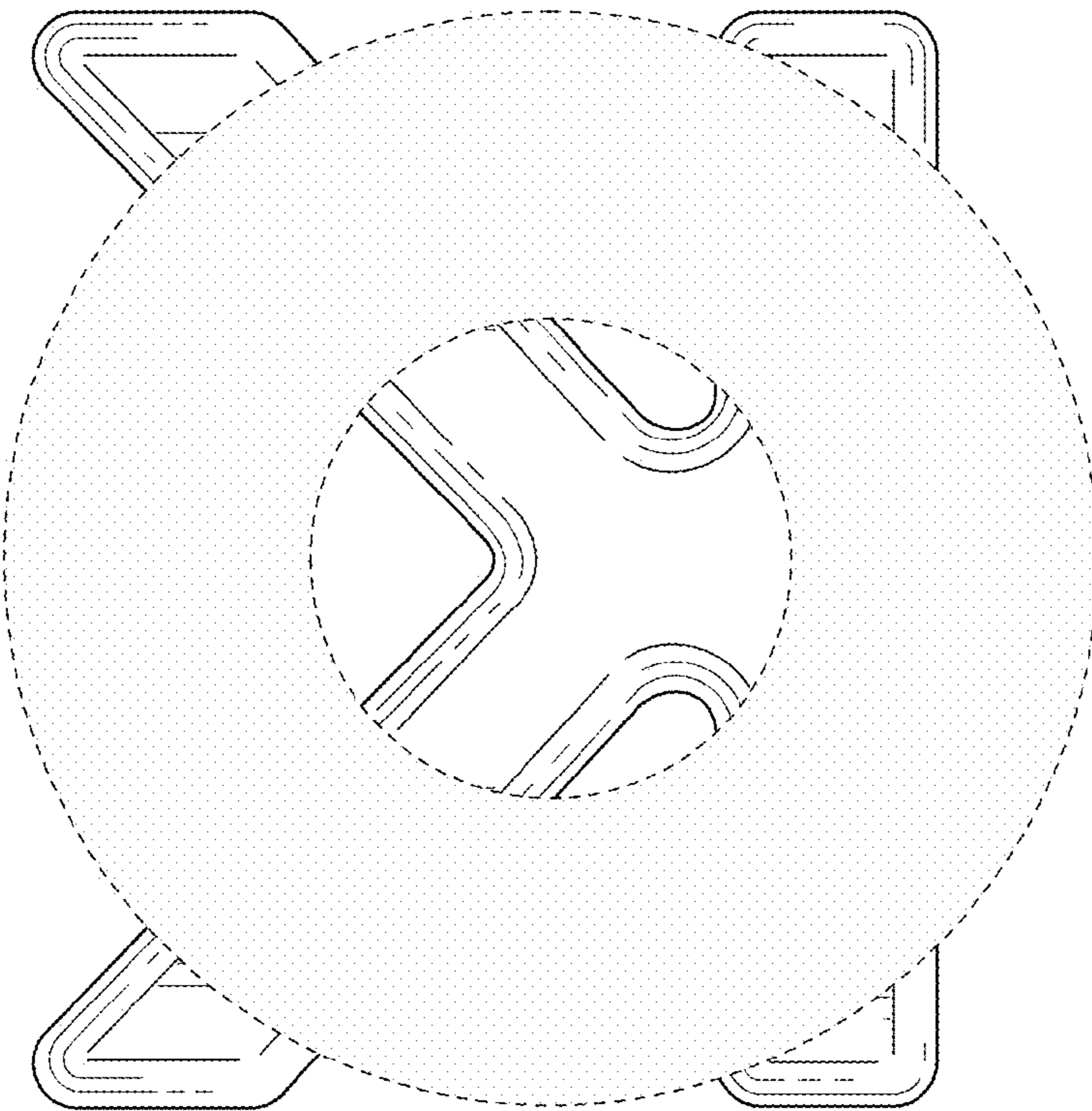


FIG. 83

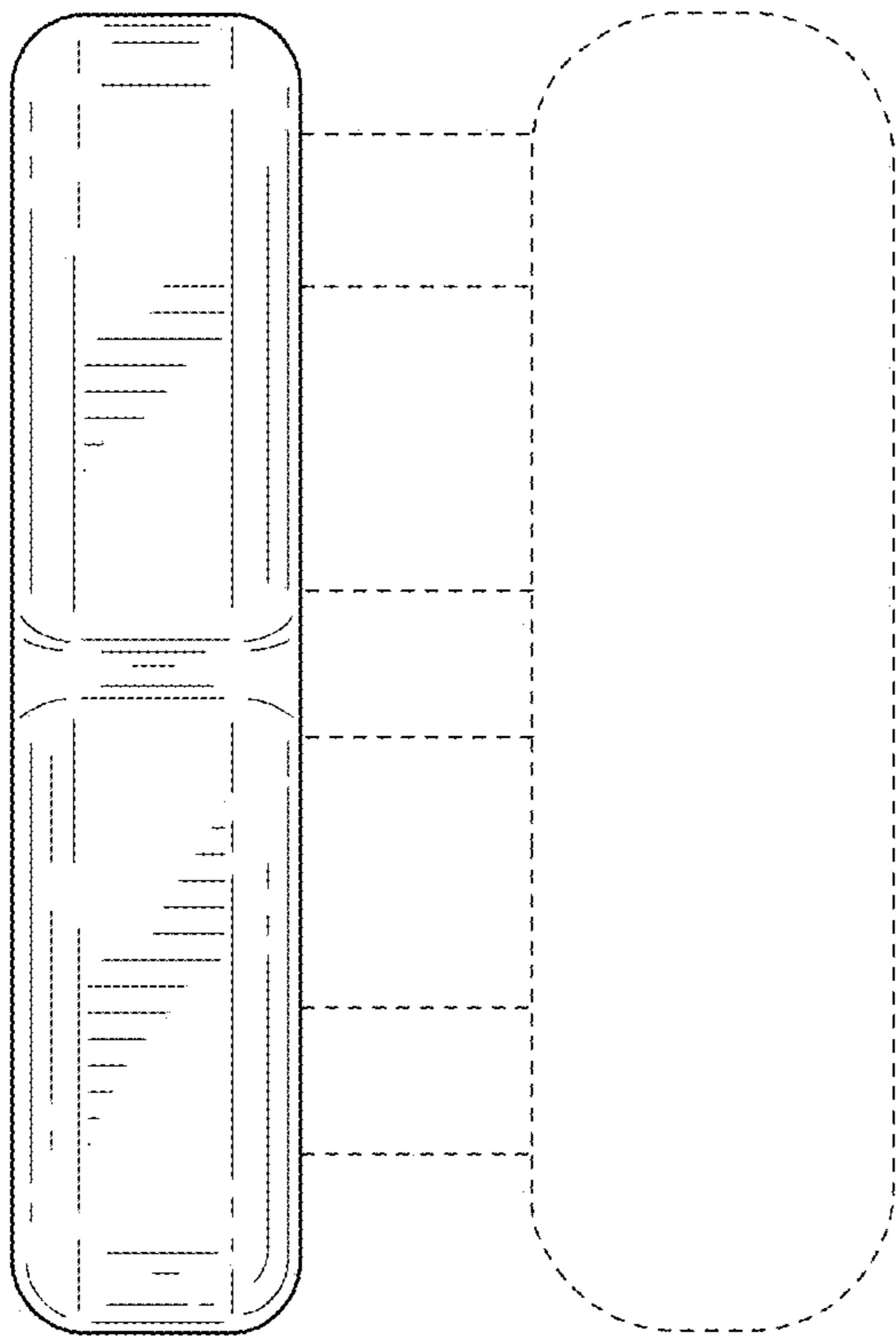


FIG. 84

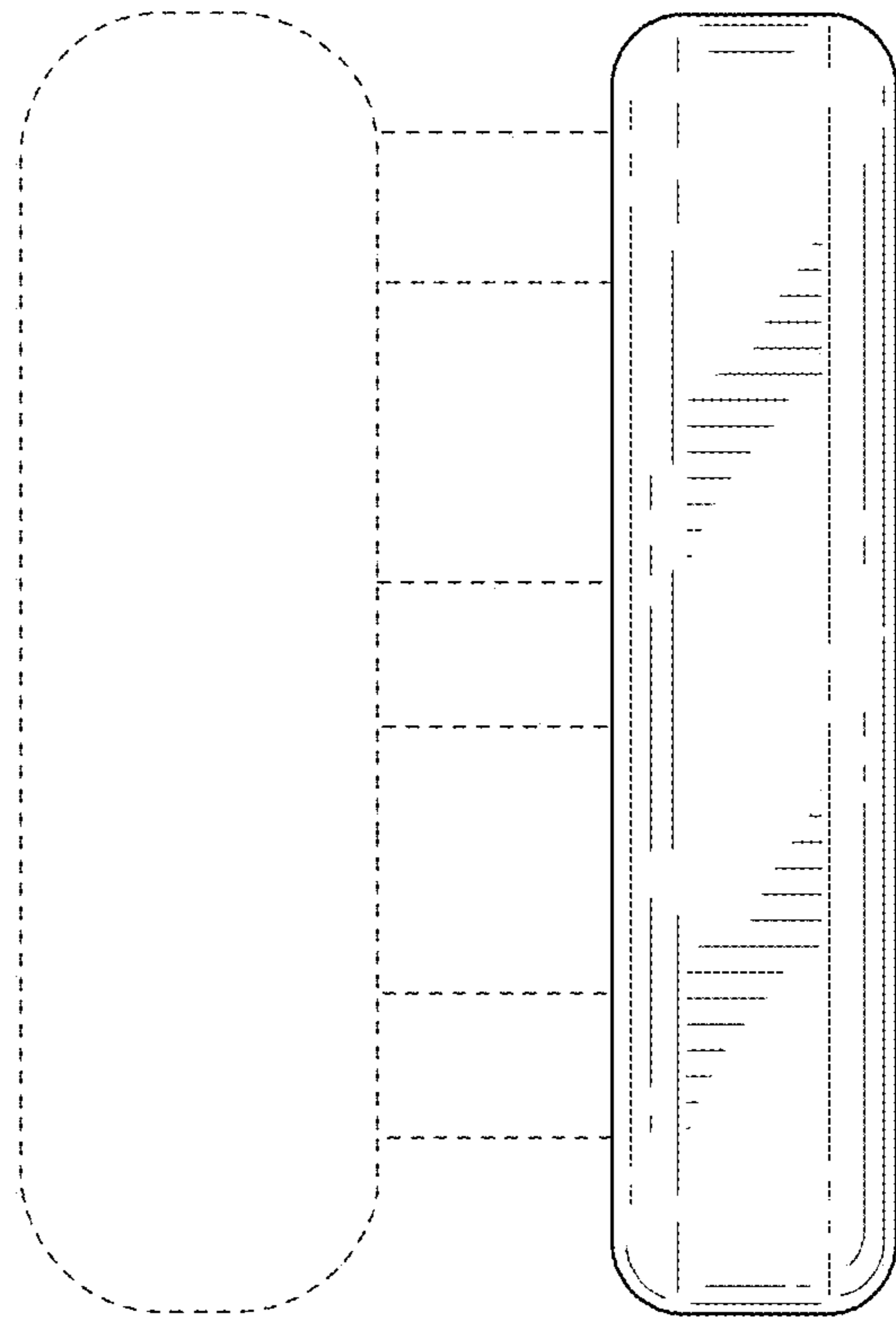


FIG. 85

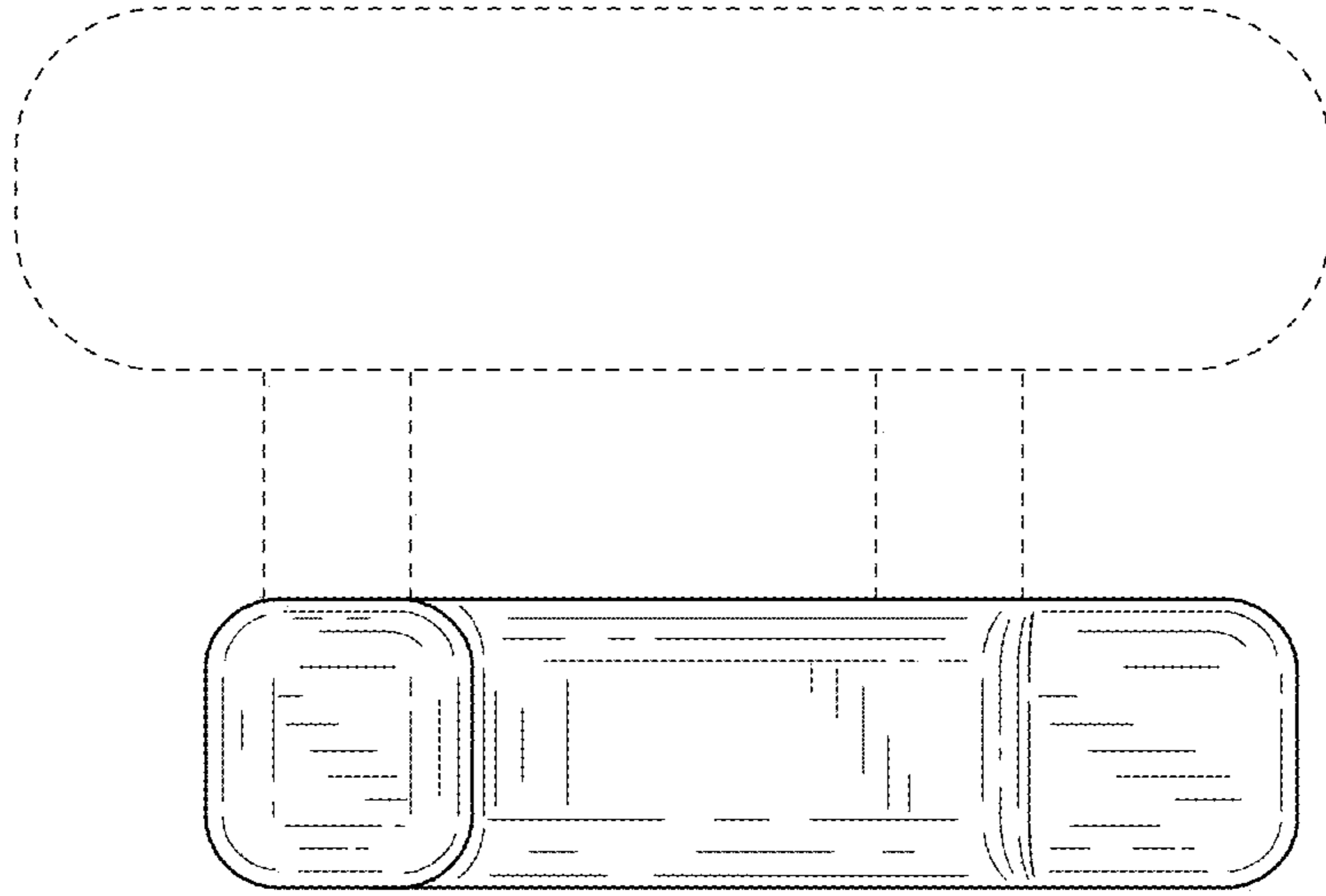


FIG. 86

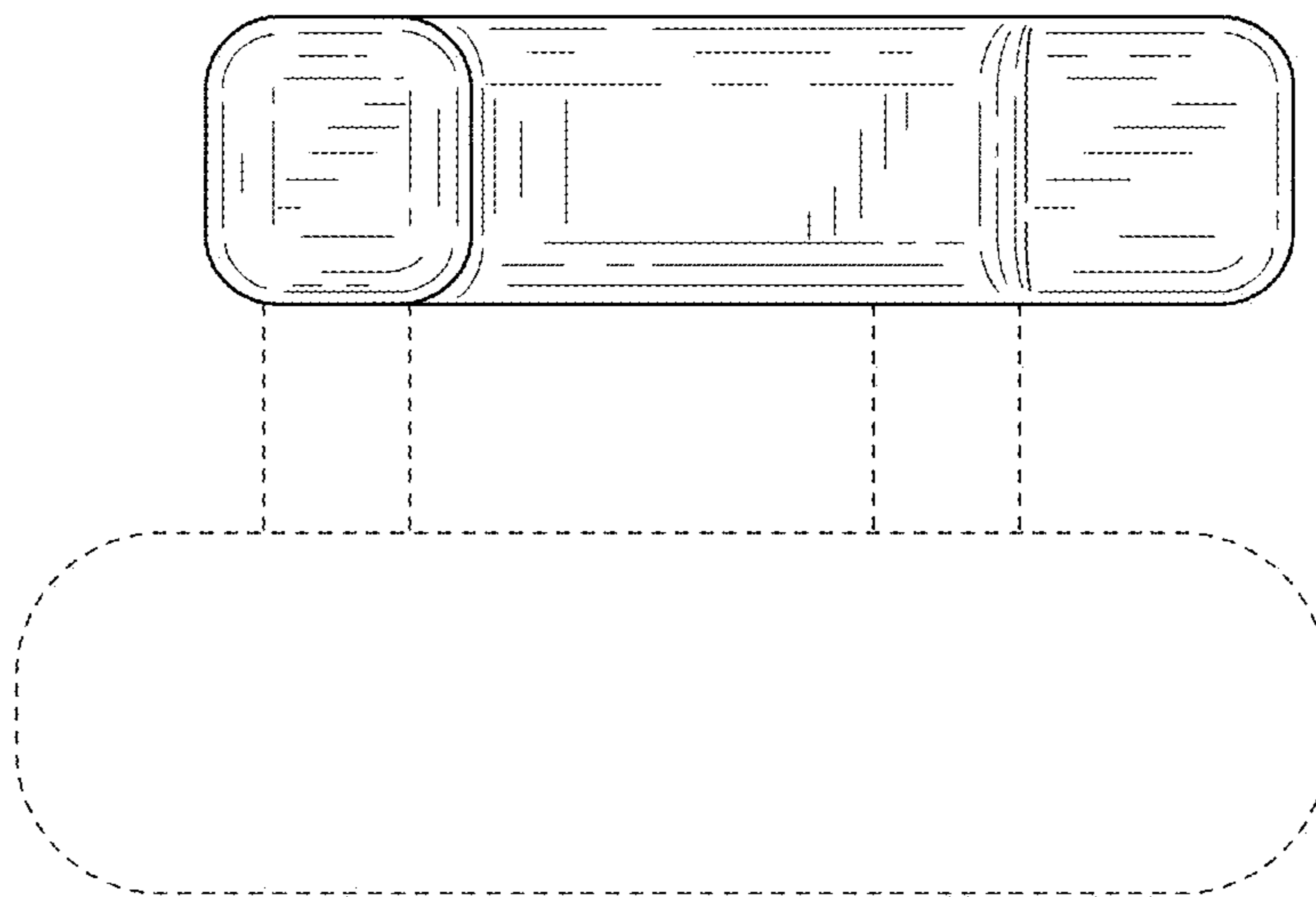


FIG. 87

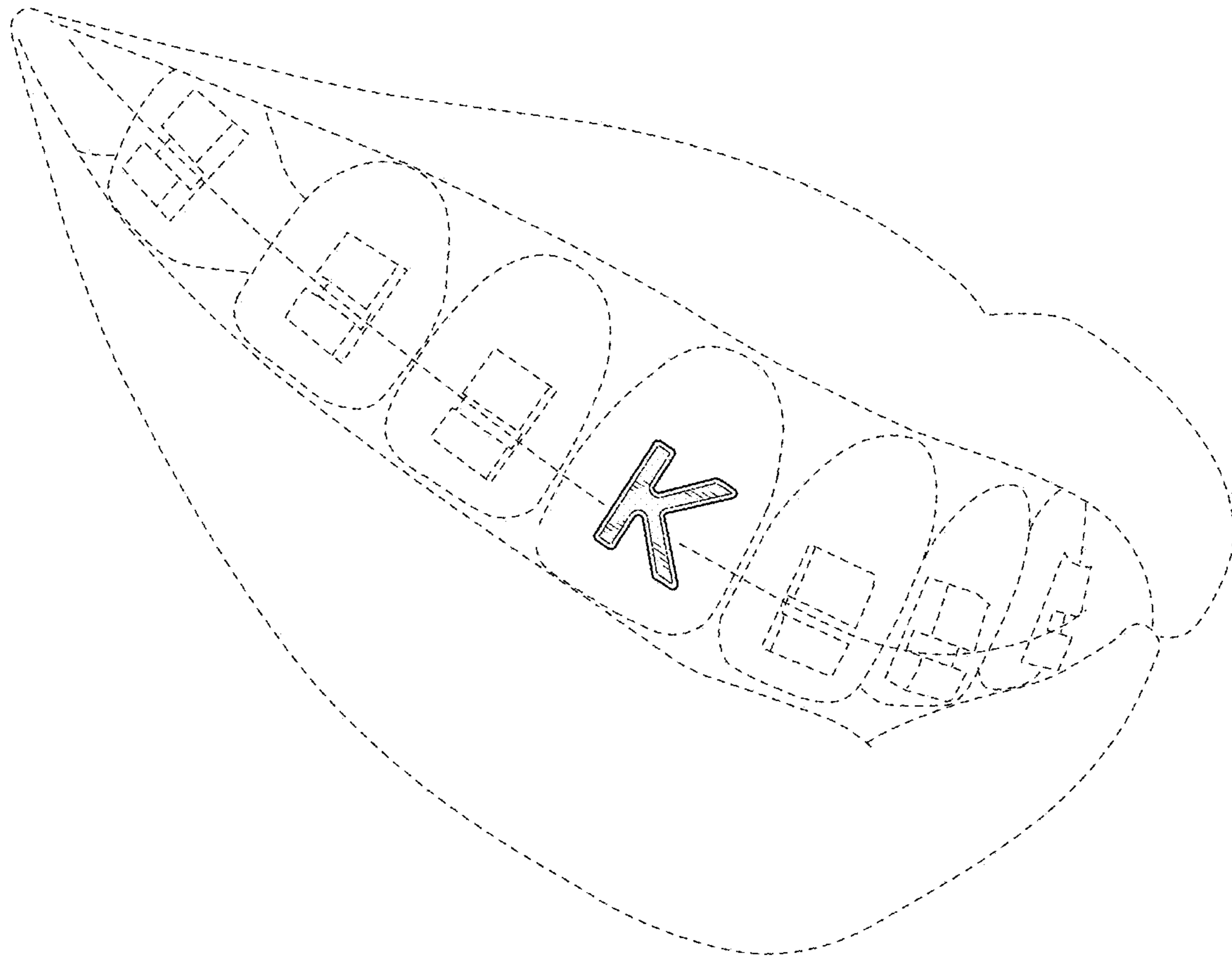


FIG. 88

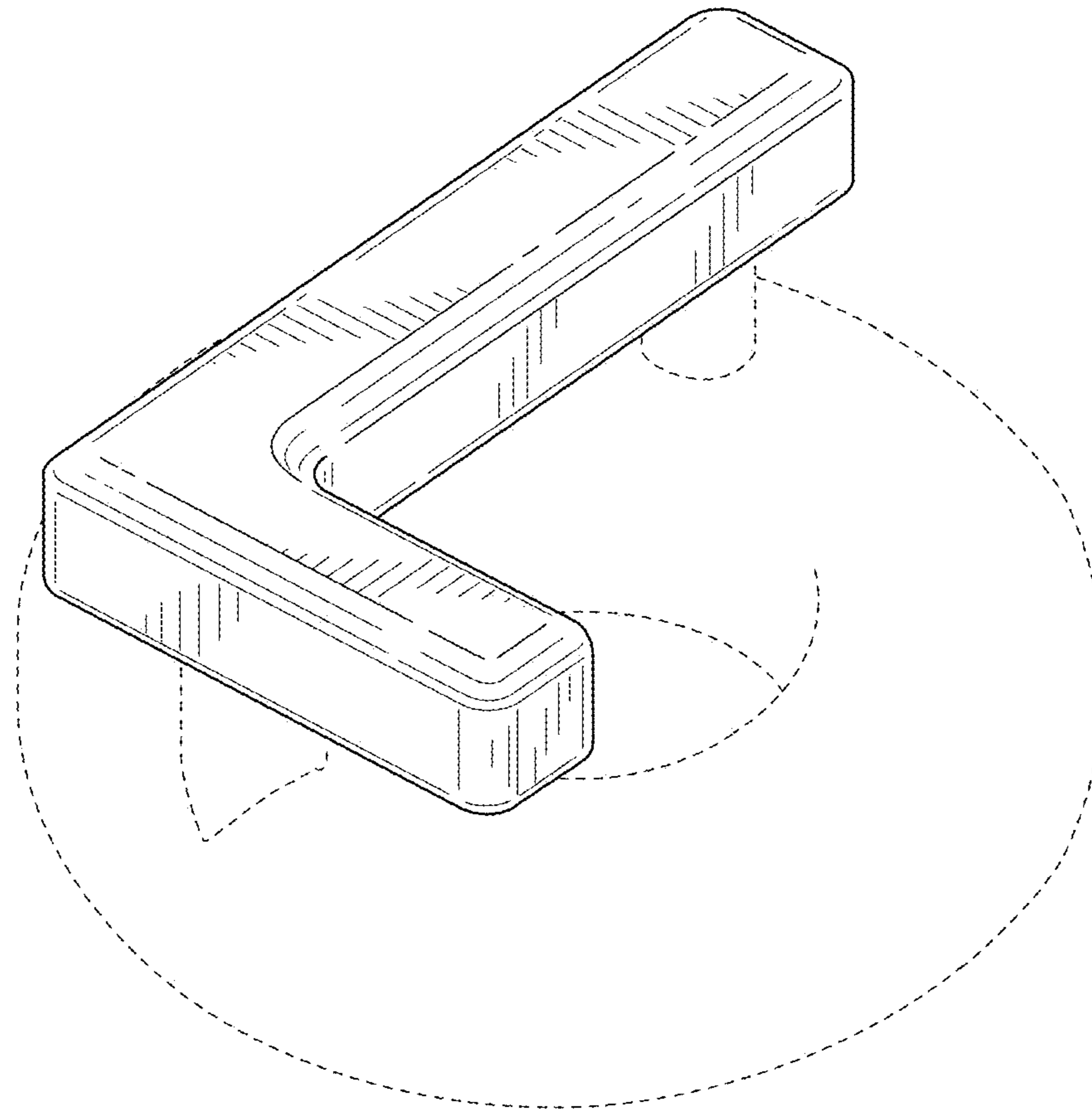


FIG. 89

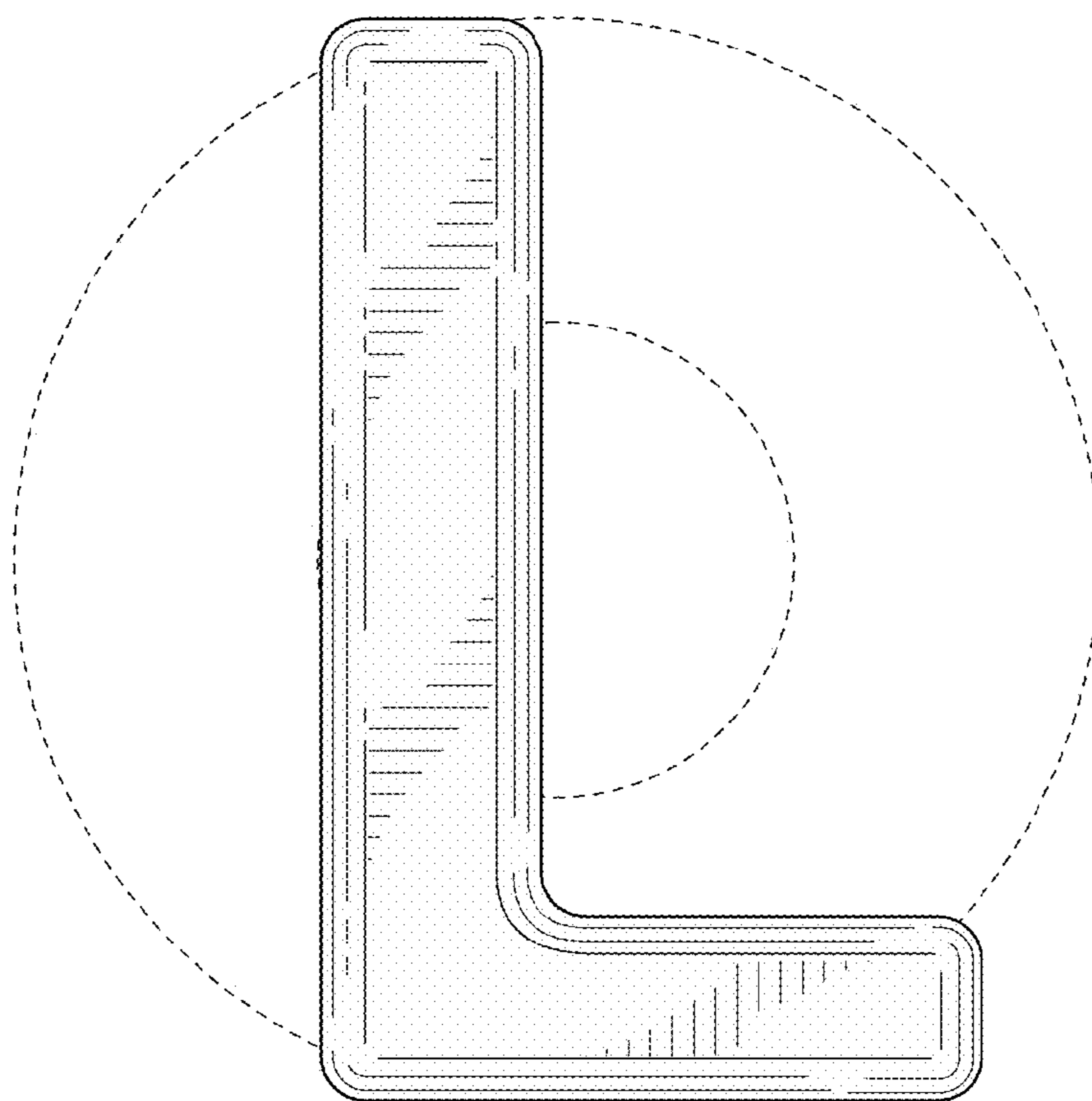


FIG. 90

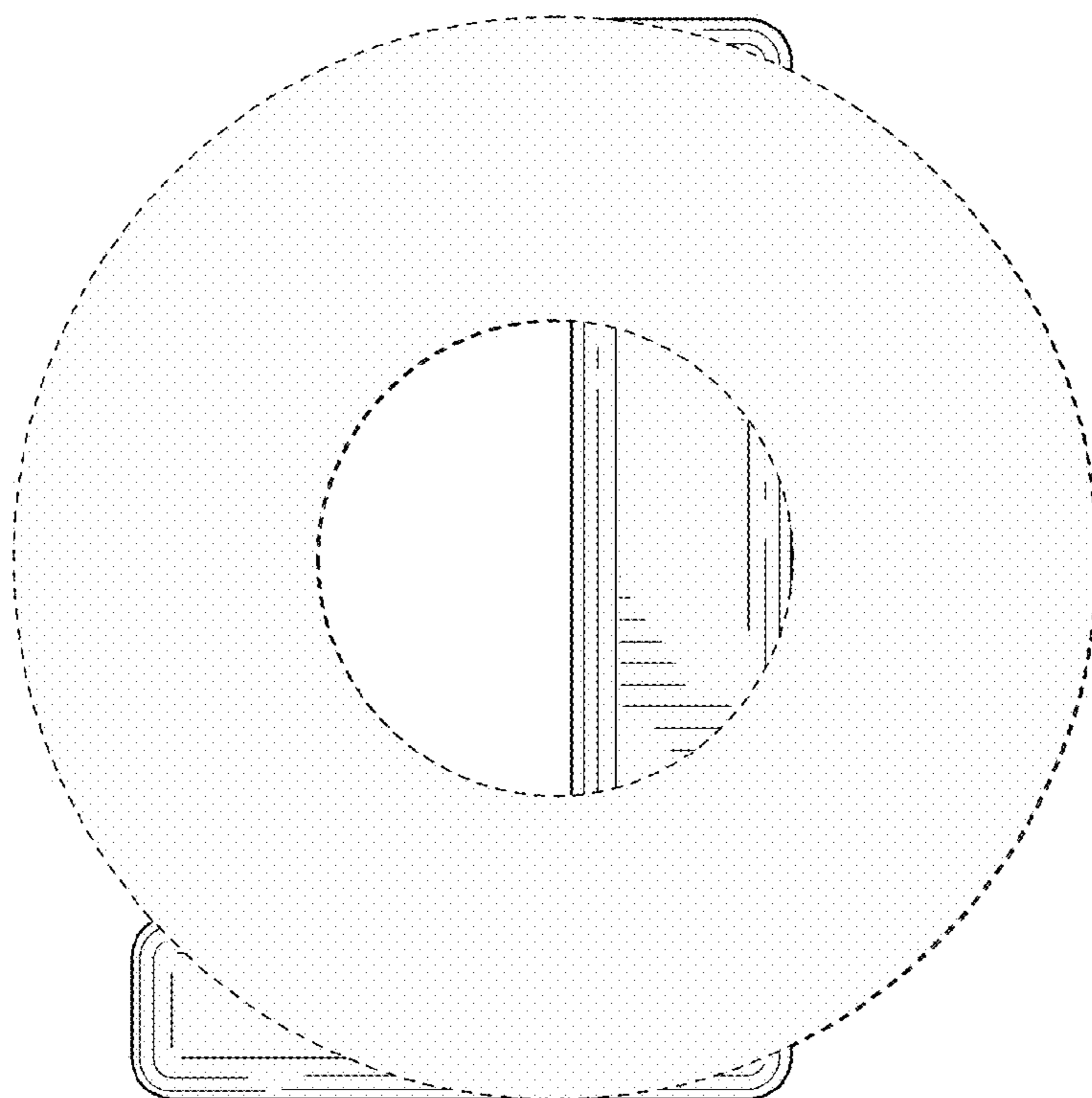


FIG. 91

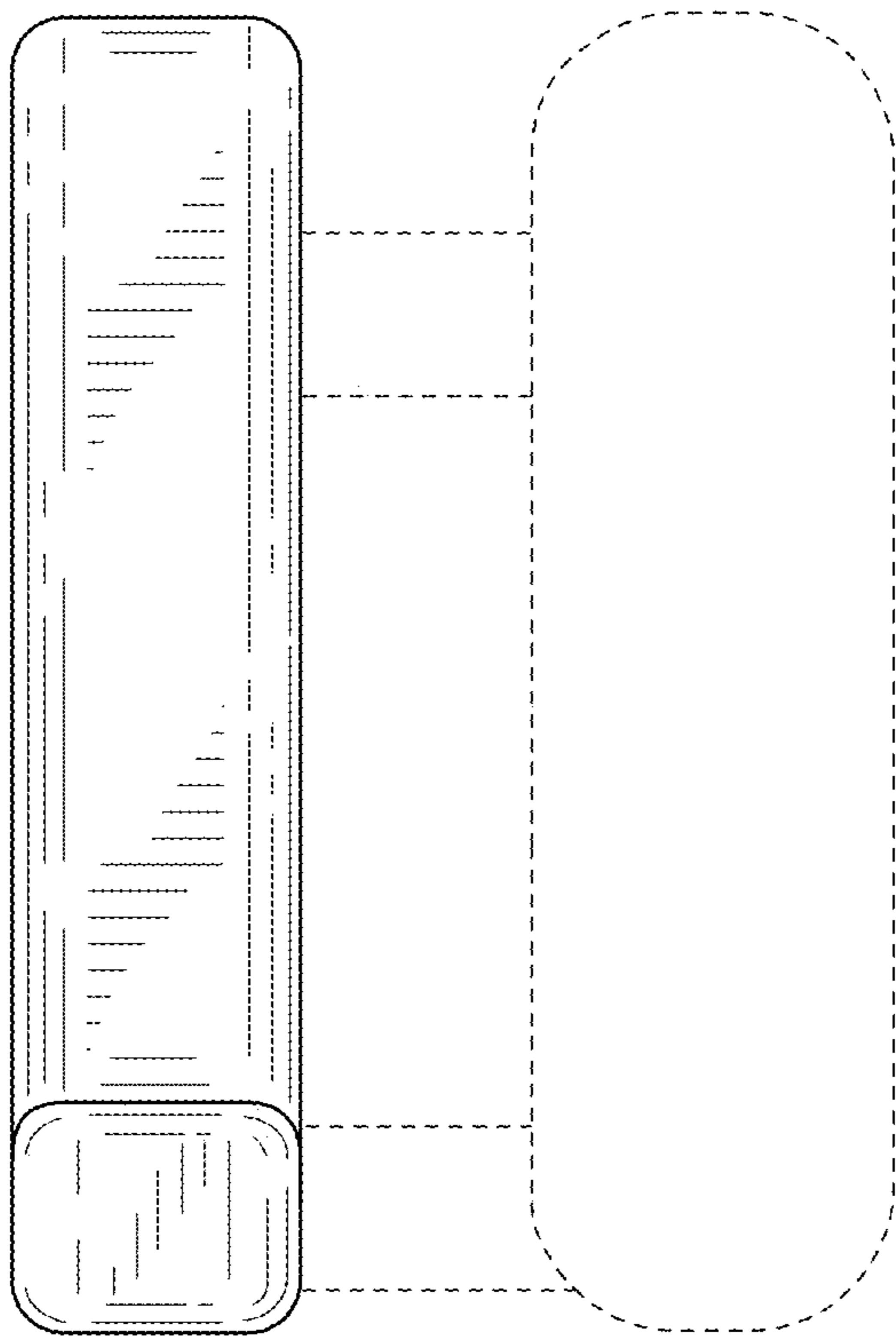


FIG. 92

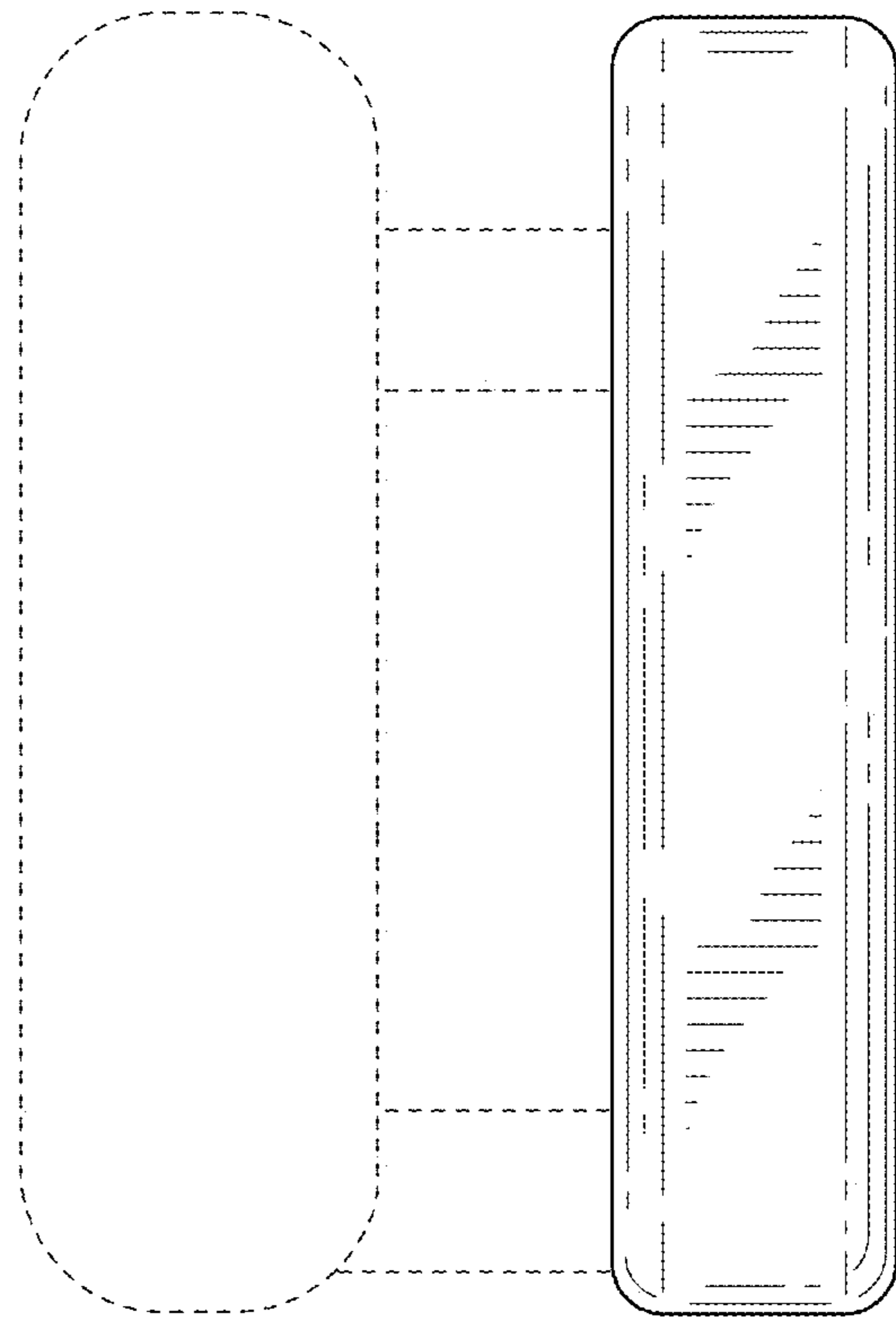


FIG. 93

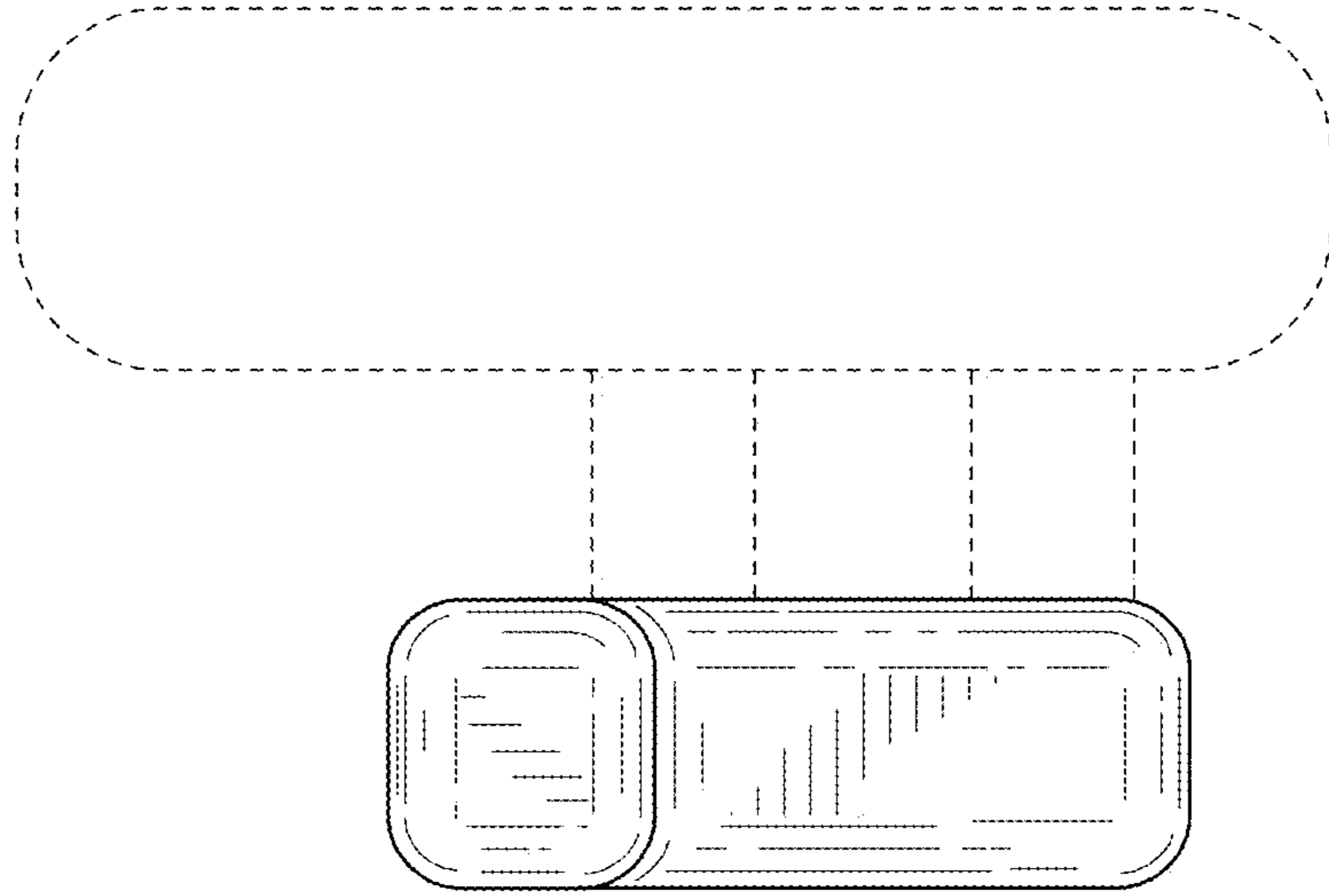


FIG. 94

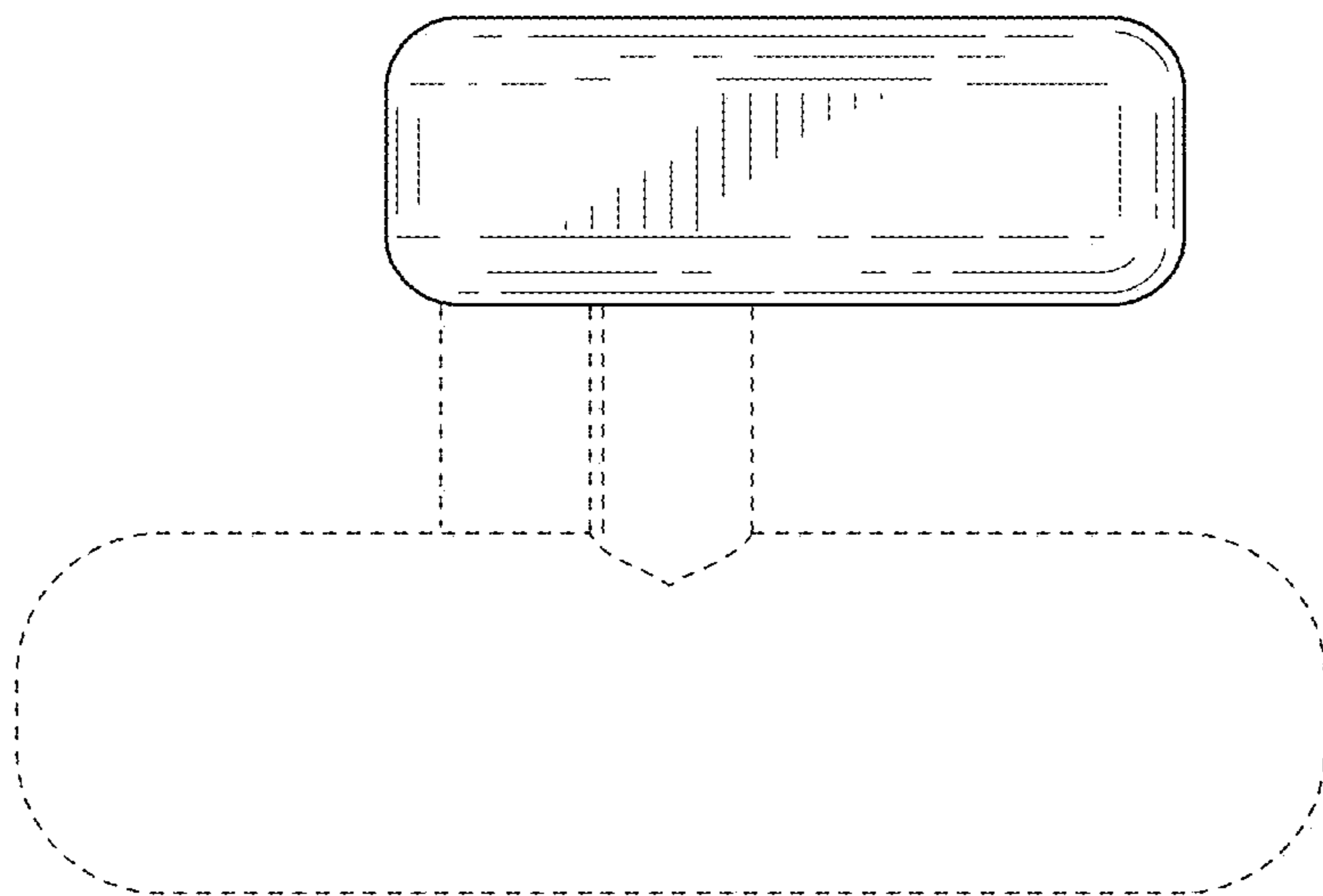


FIG. 95

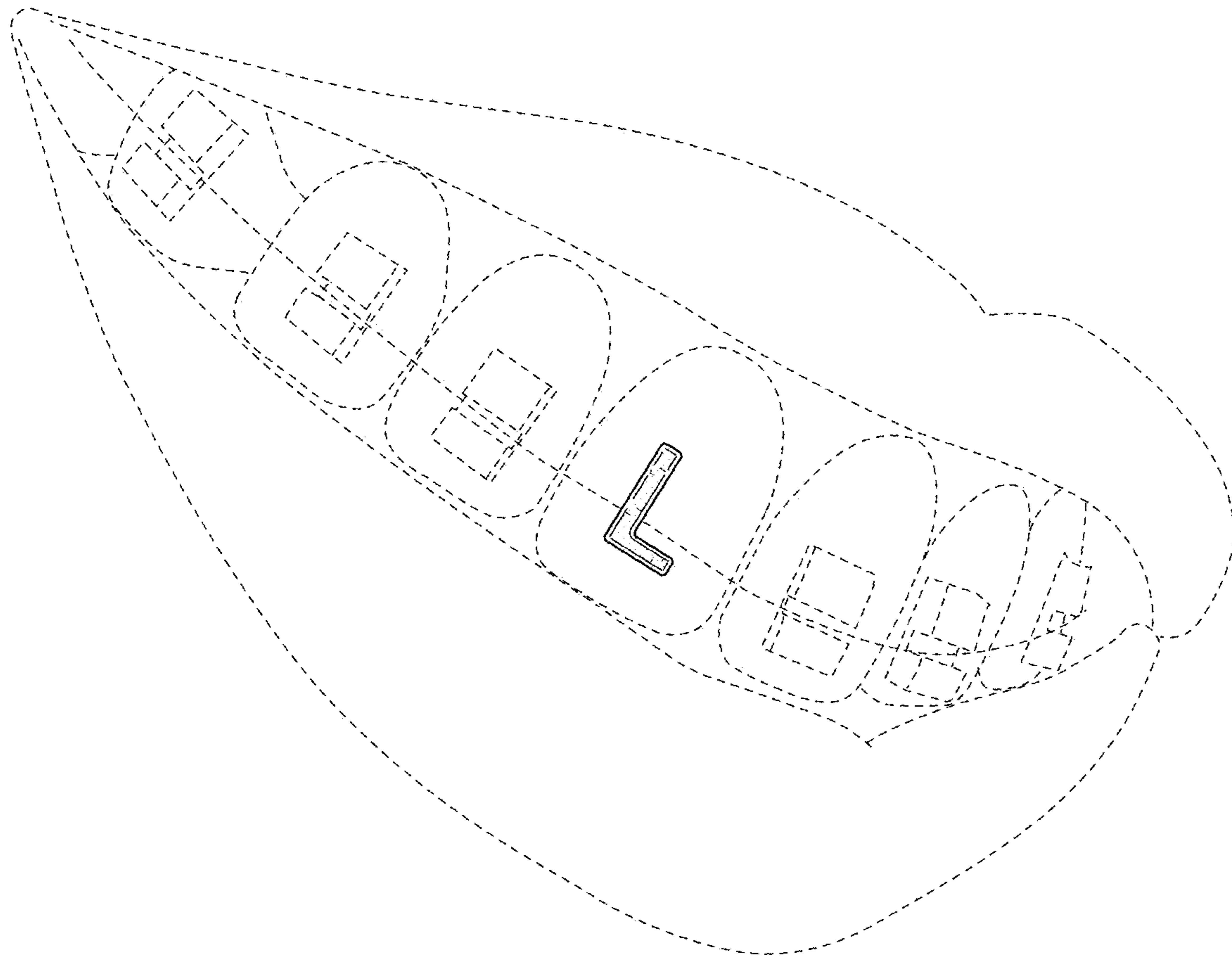


FIG. 96

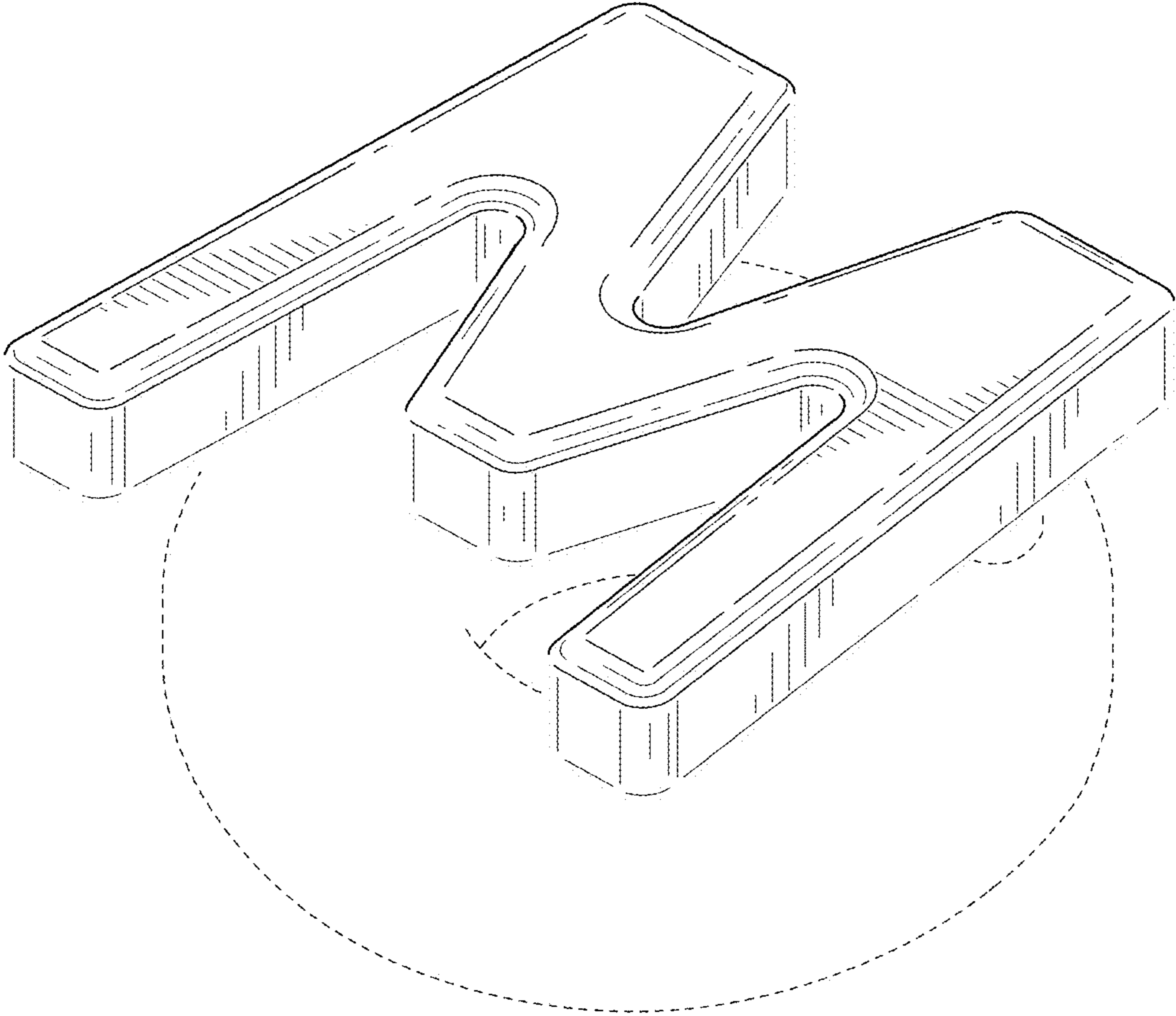


FIG. 97

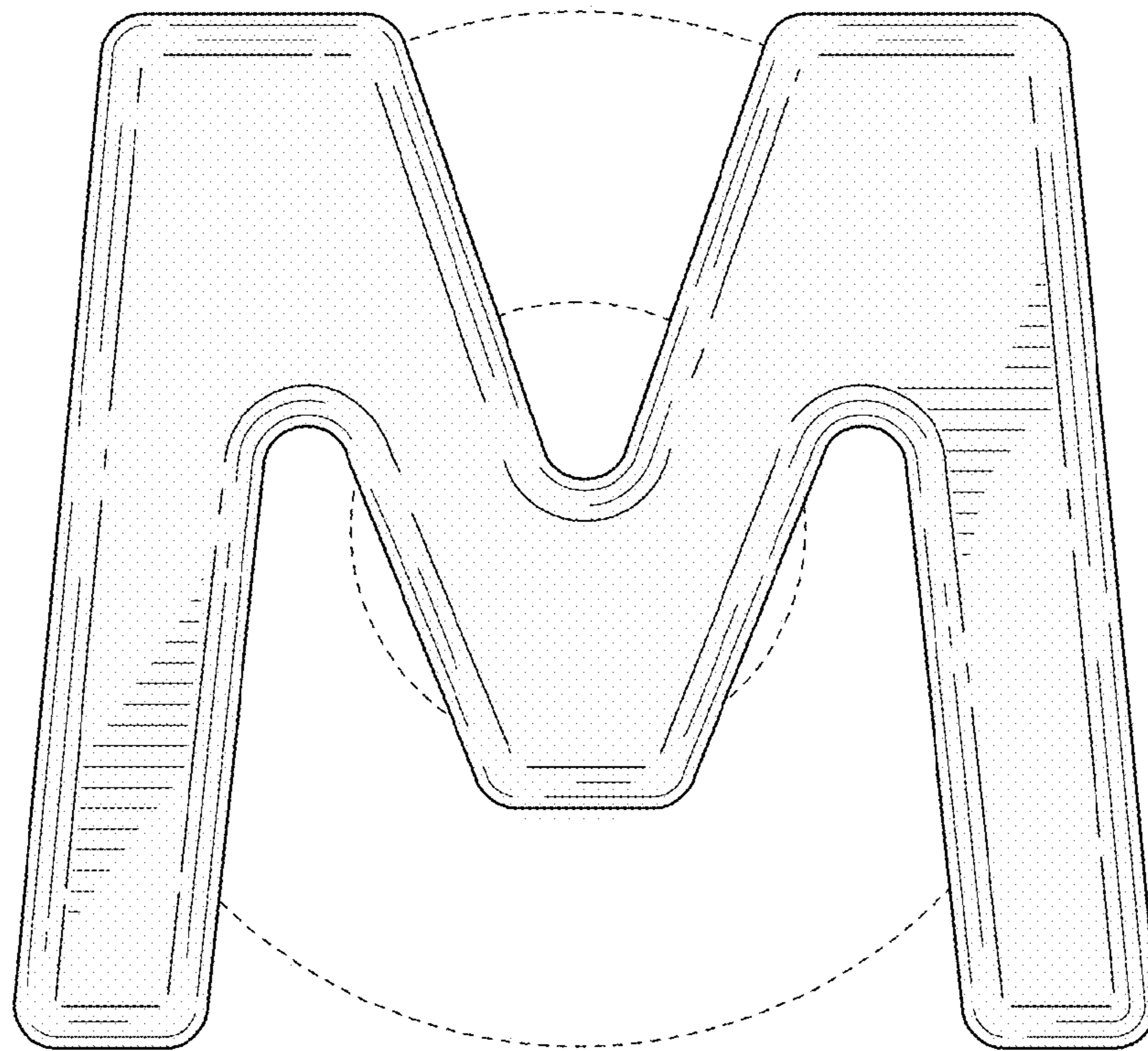


FIG. 98

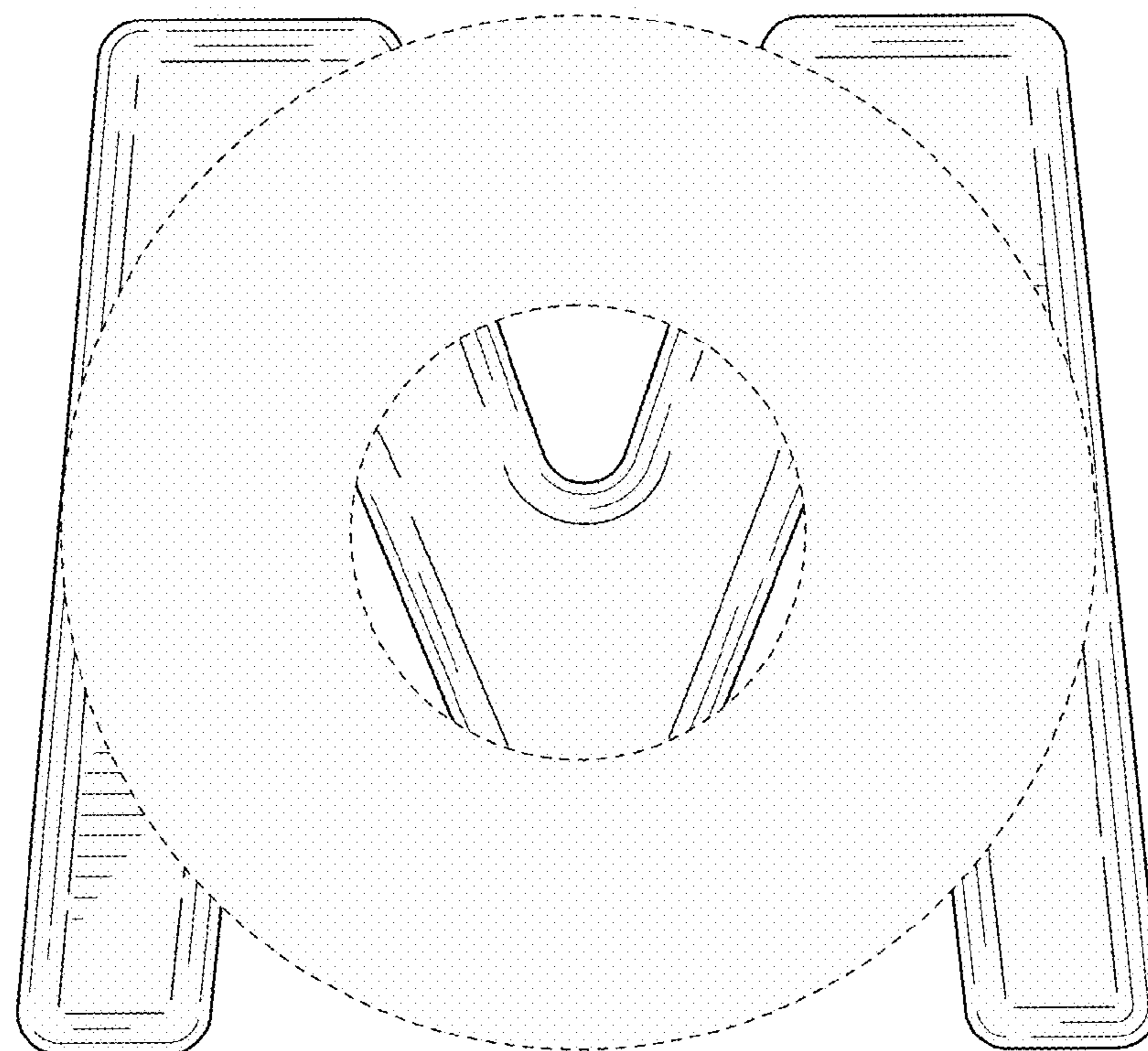


FIG. 99

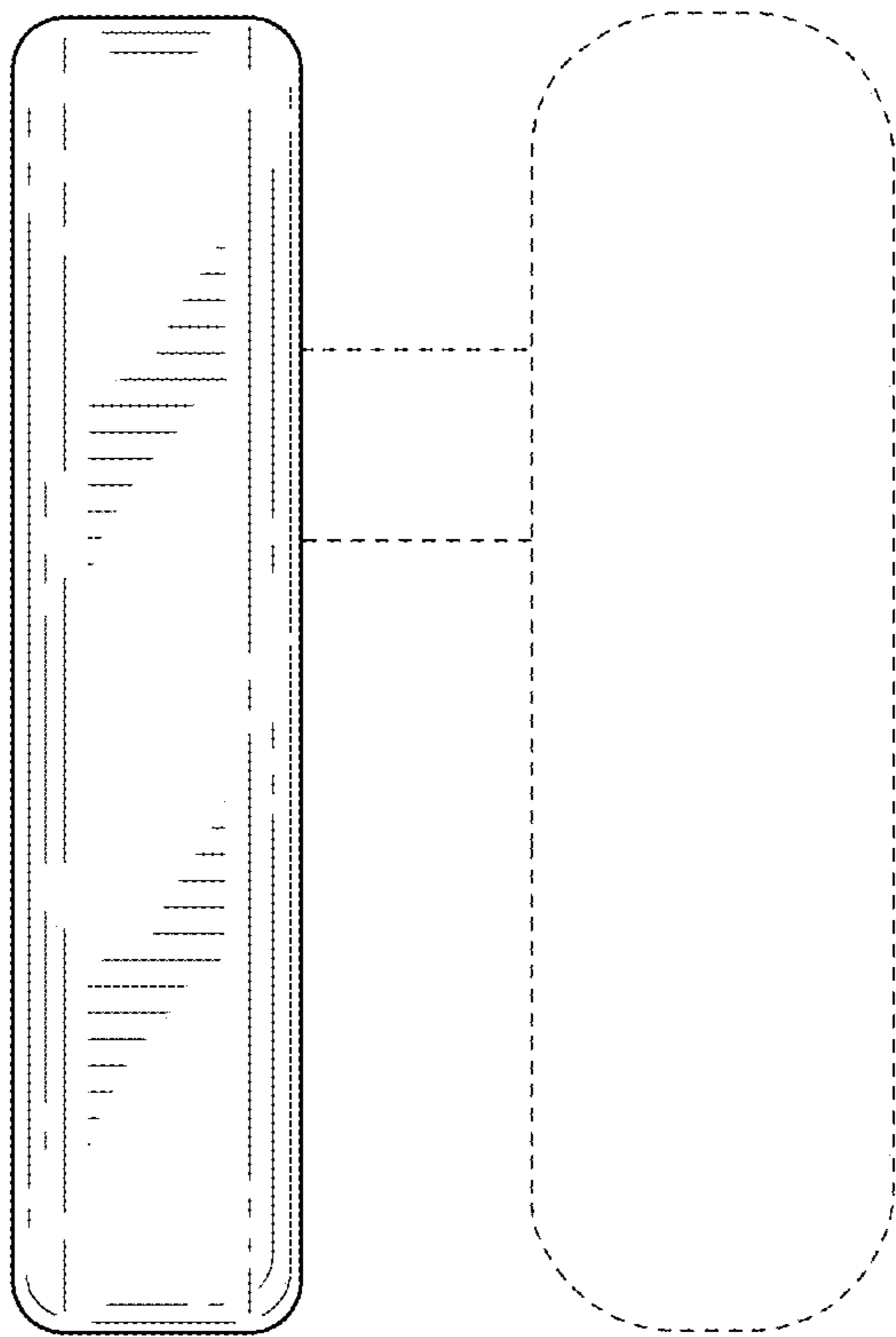


FIG. 100

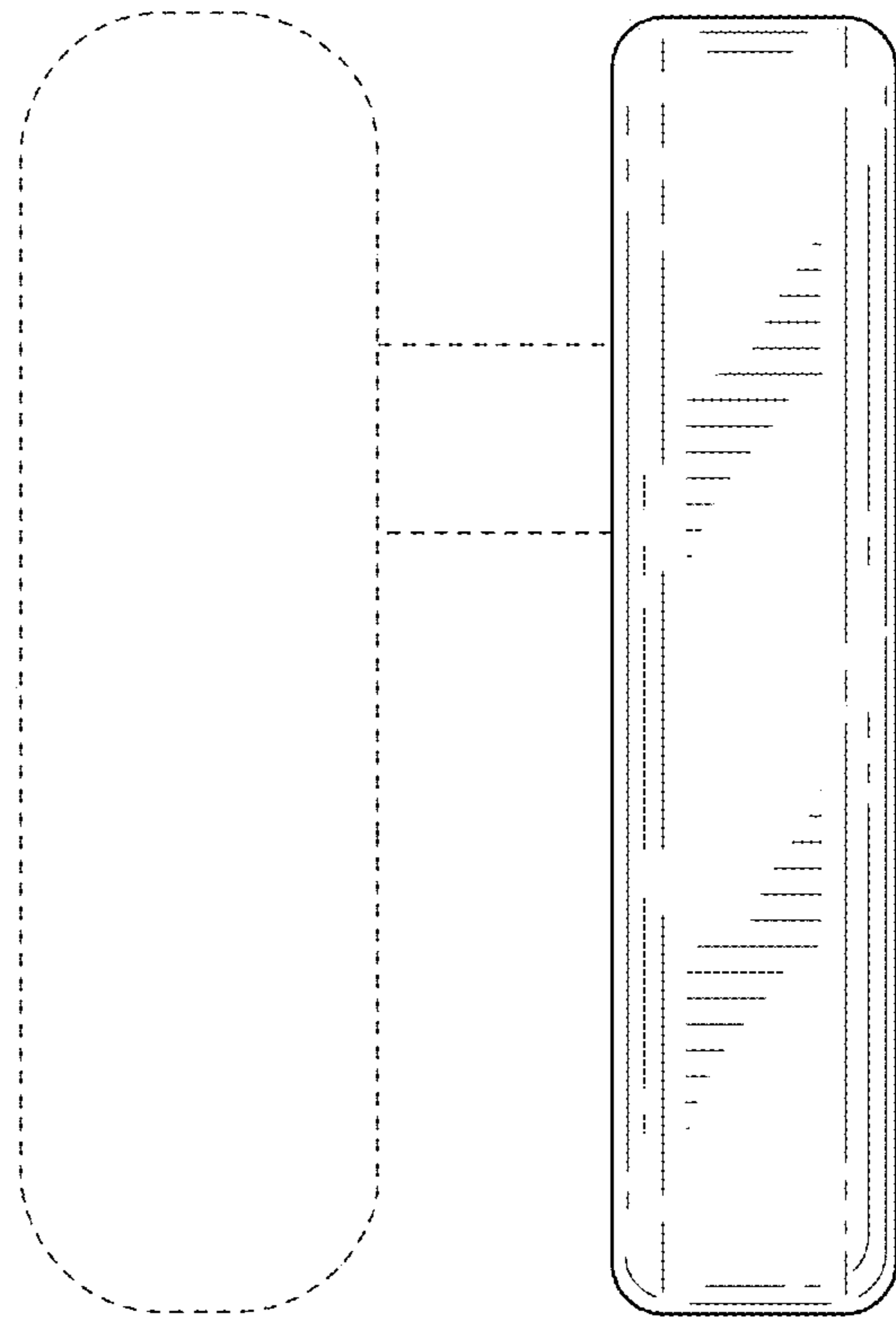


FIG. 101

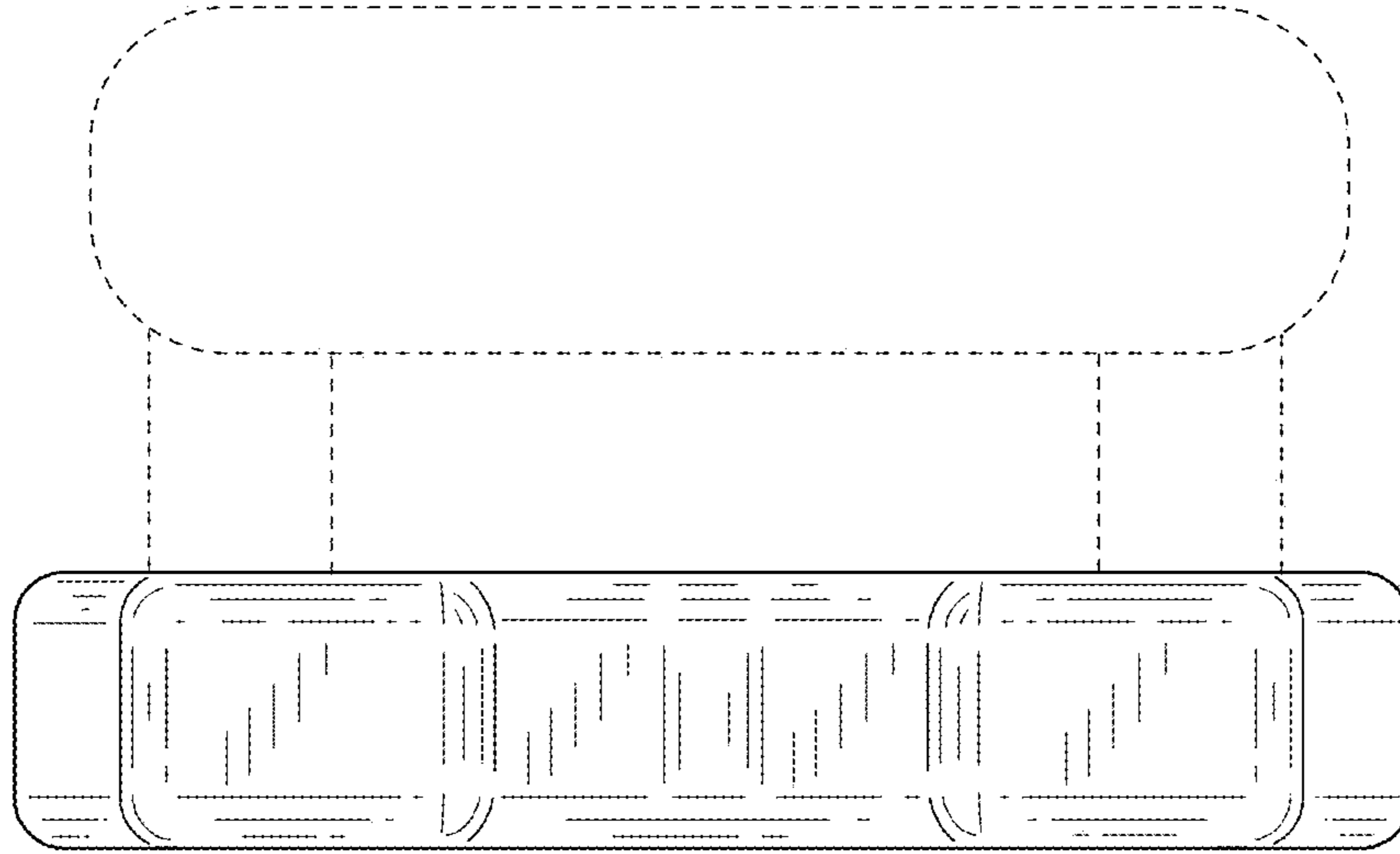


FIG. 102

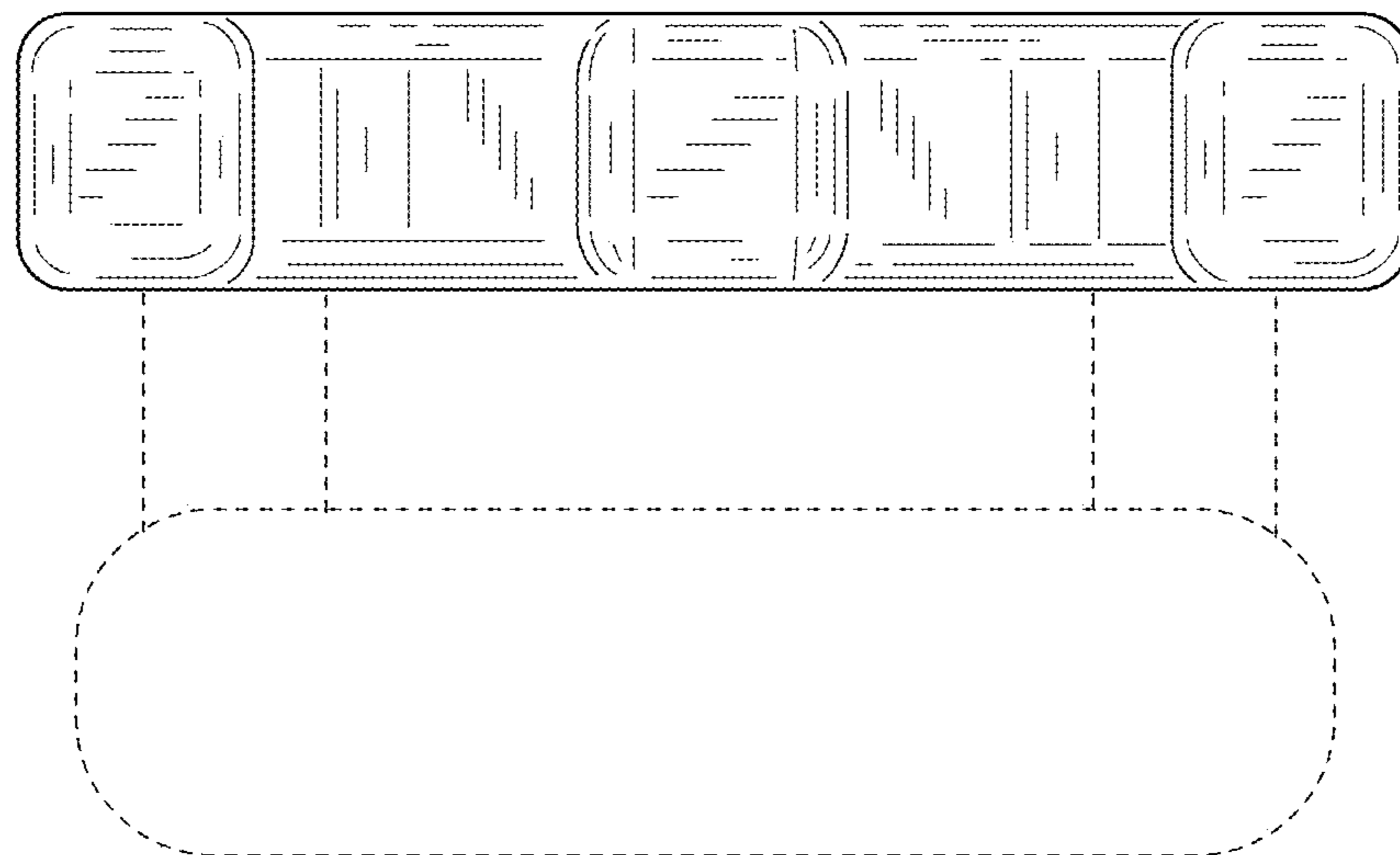


FIG. 103

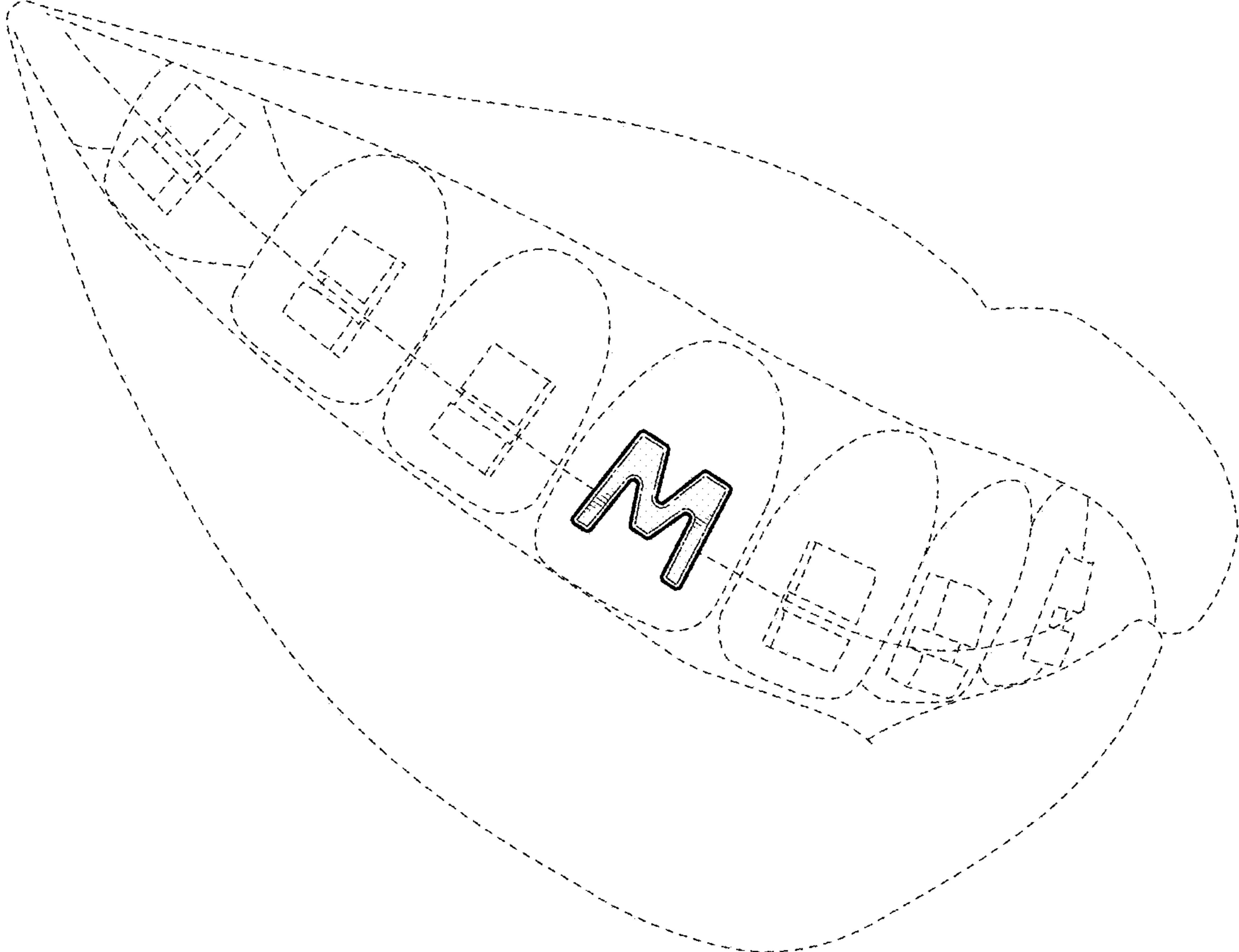


FIG. 104

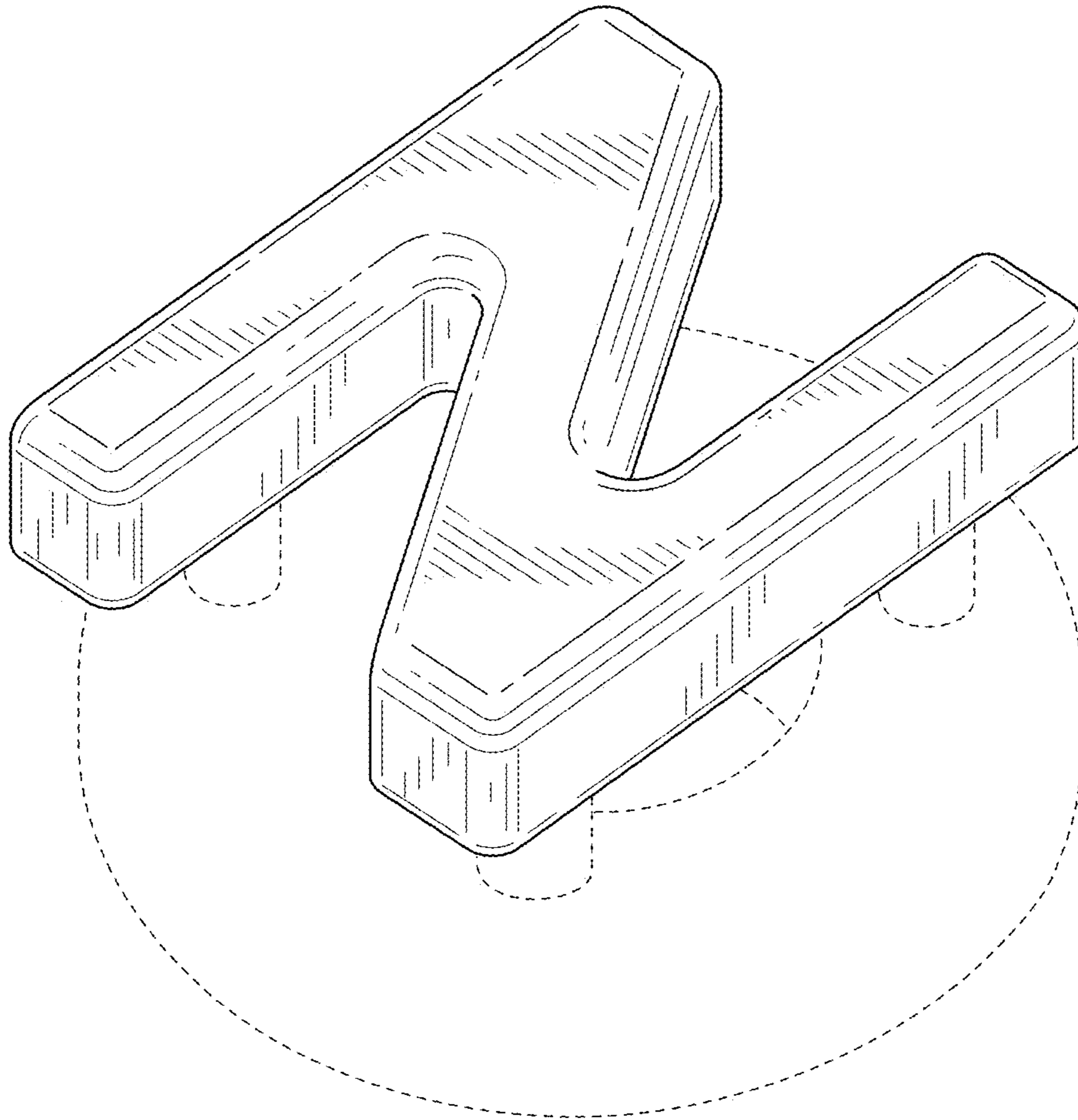


FIG. 105

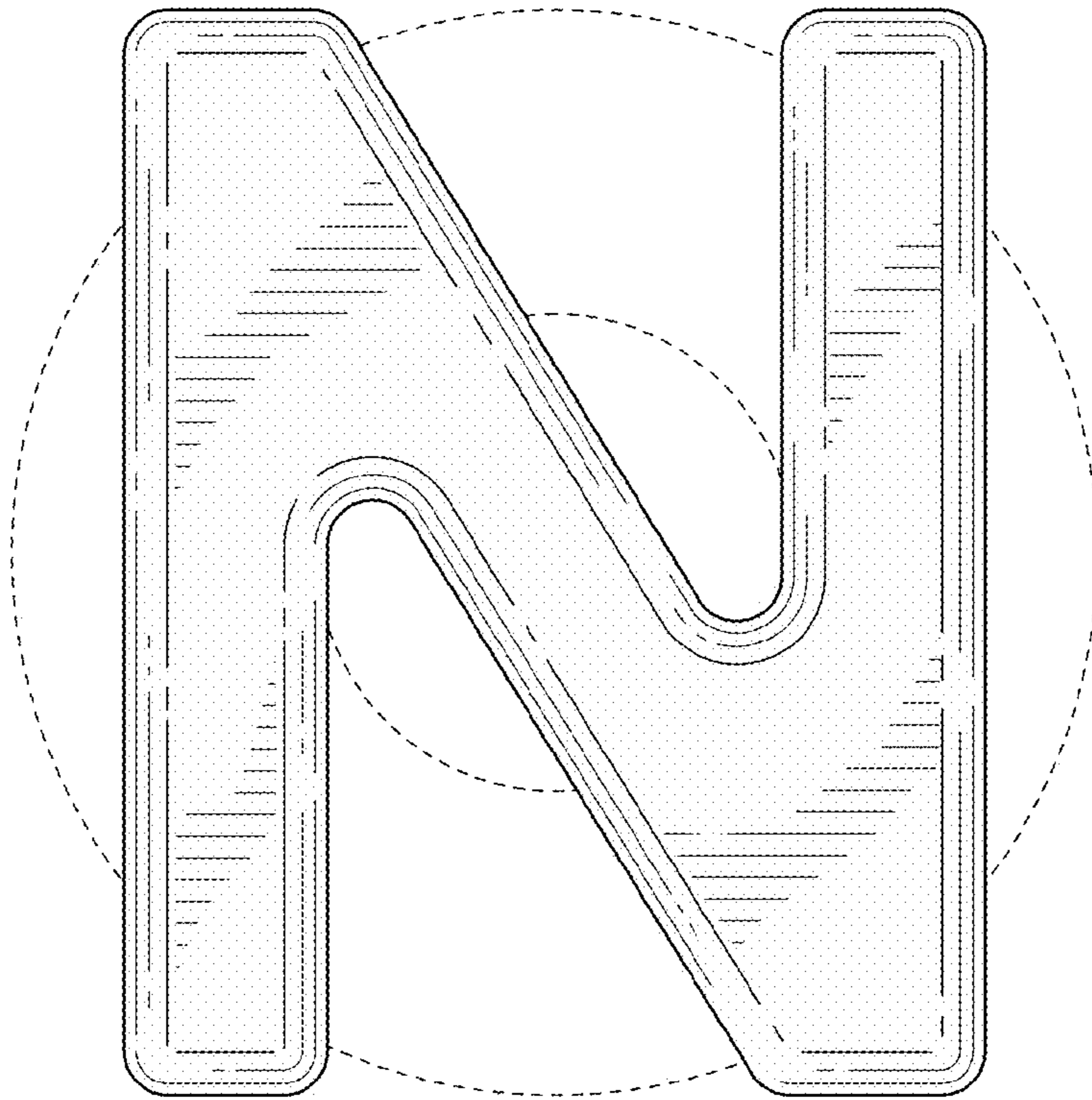


FIG. 106

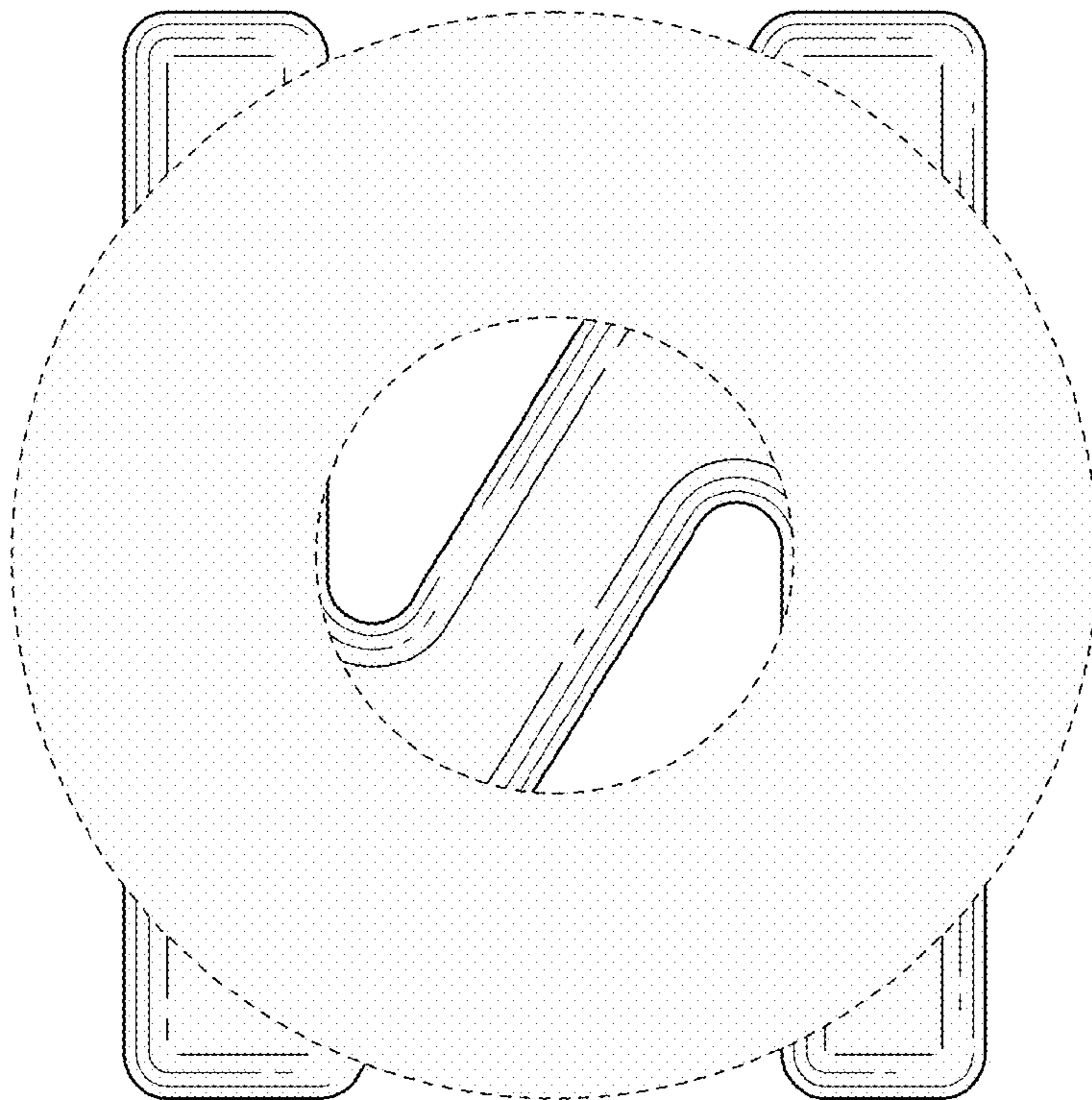


FIG. 107

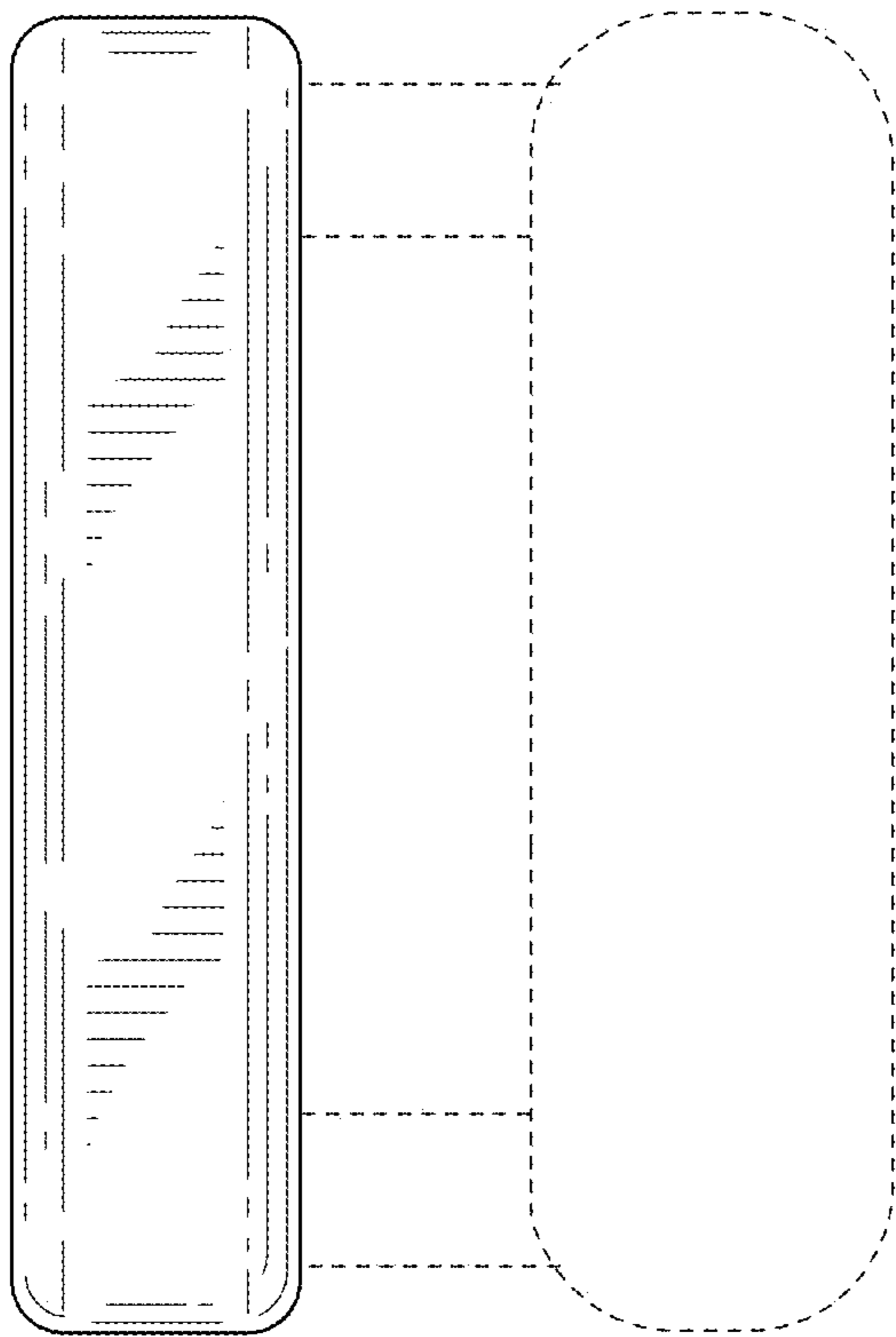


FIG. 108

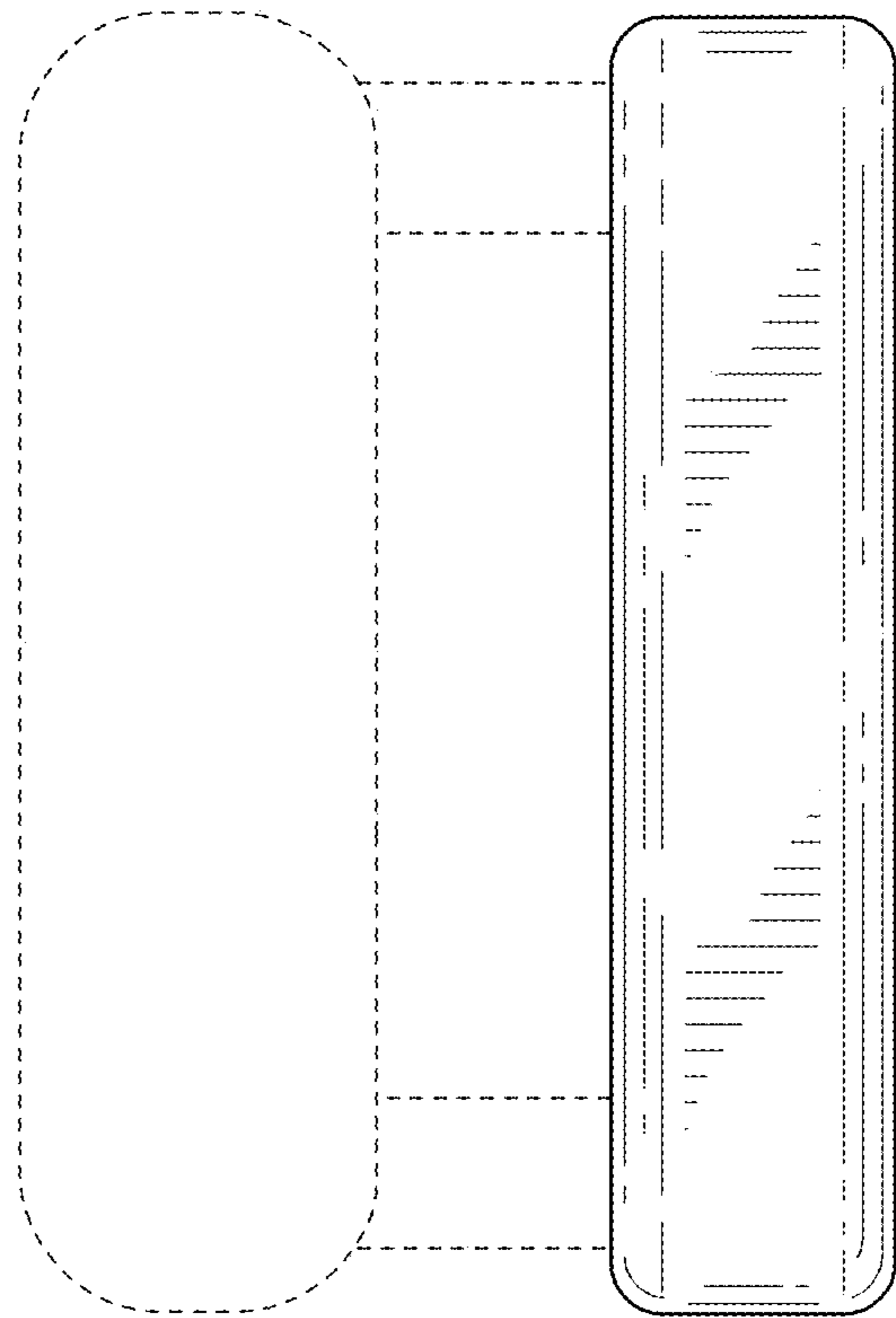


FIG. 109

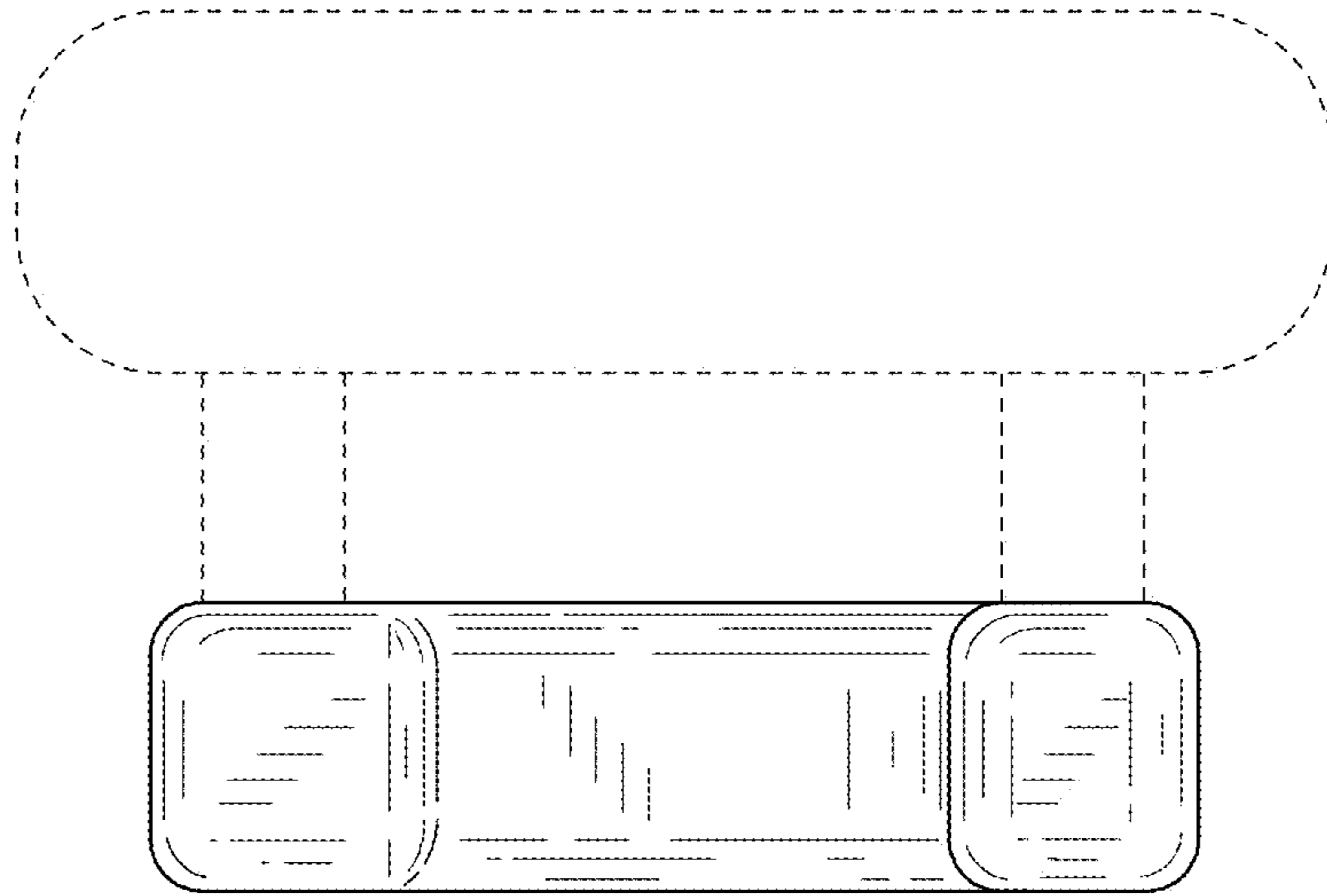


FIG. 110

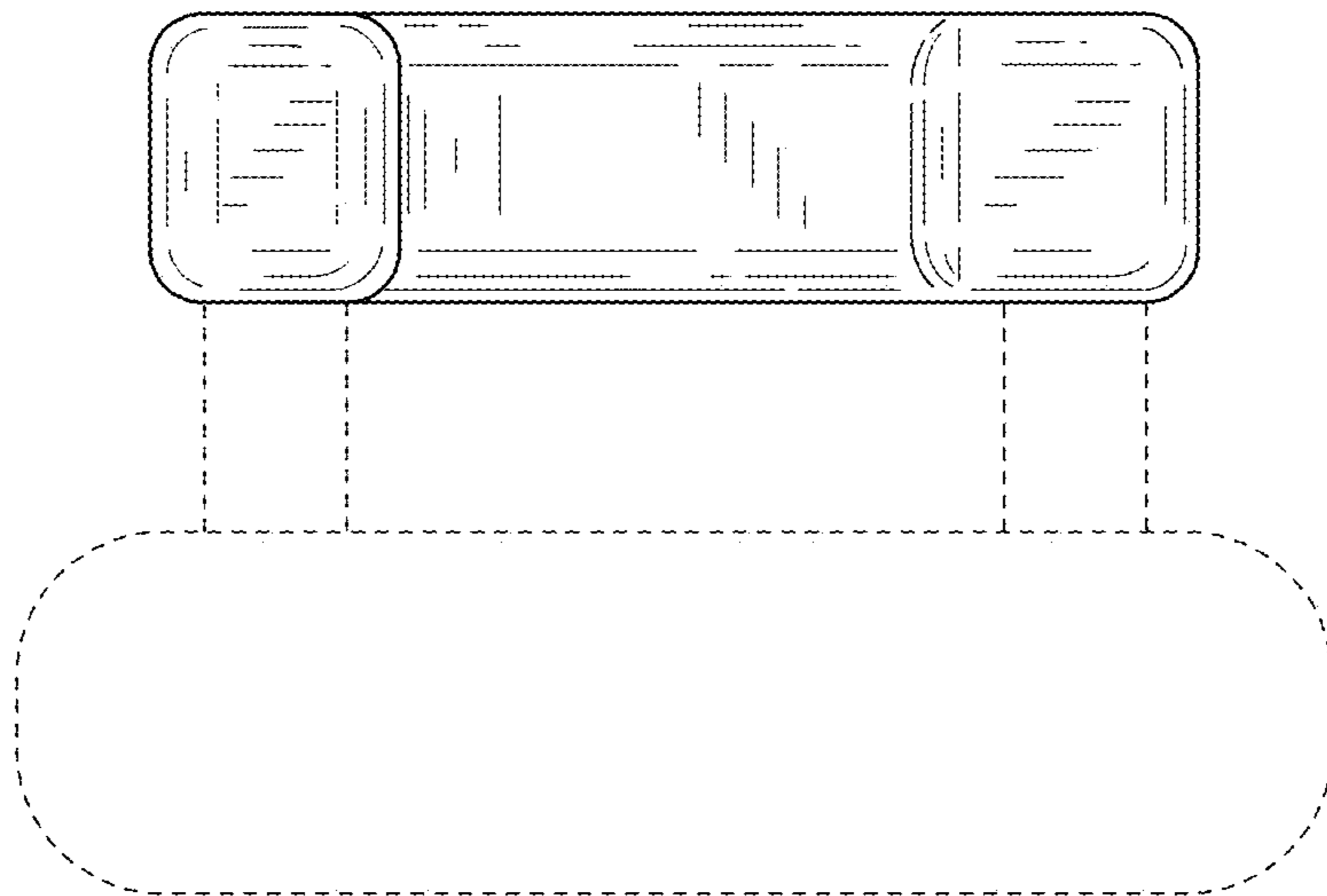


FIG. 111

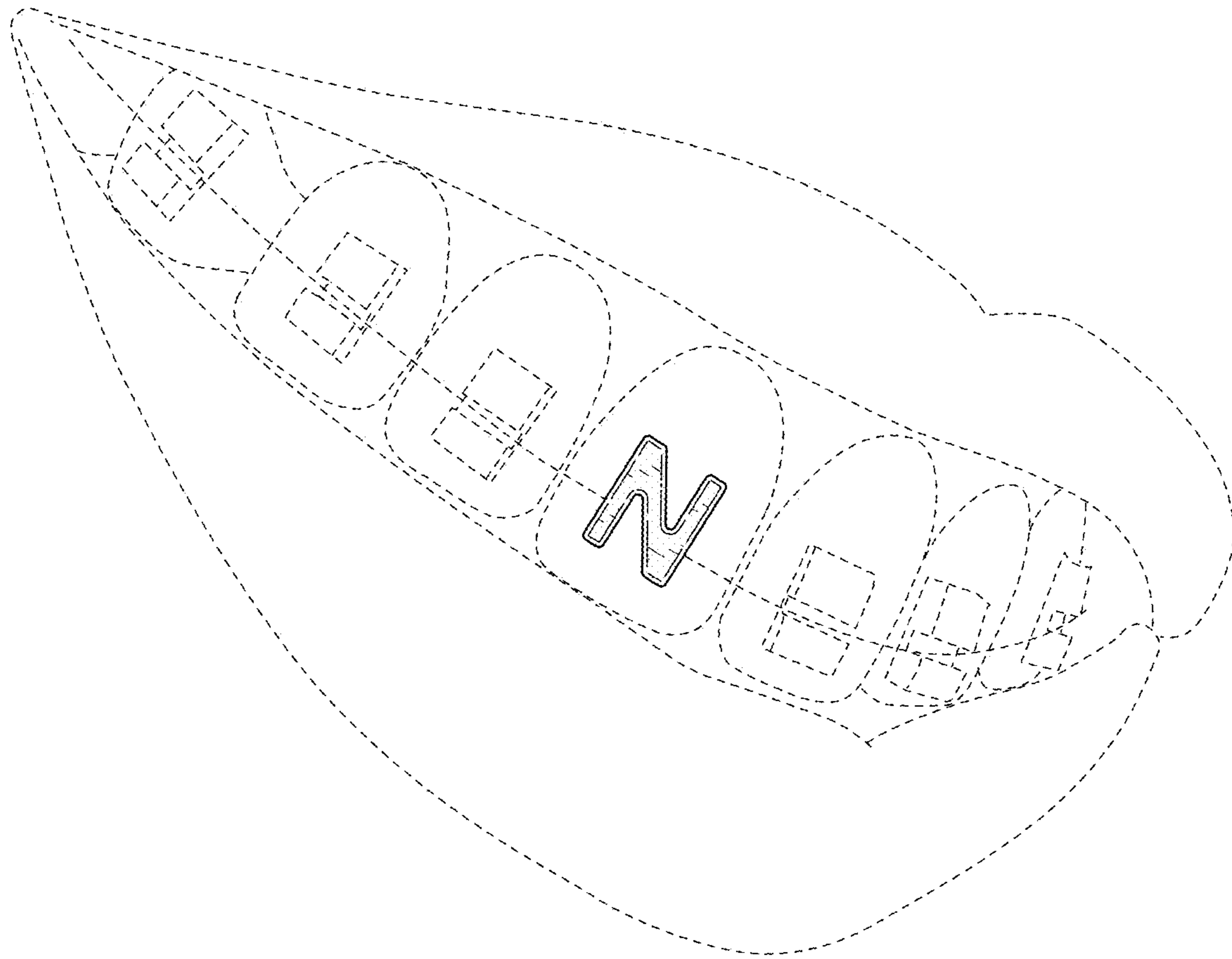


FIG. 112

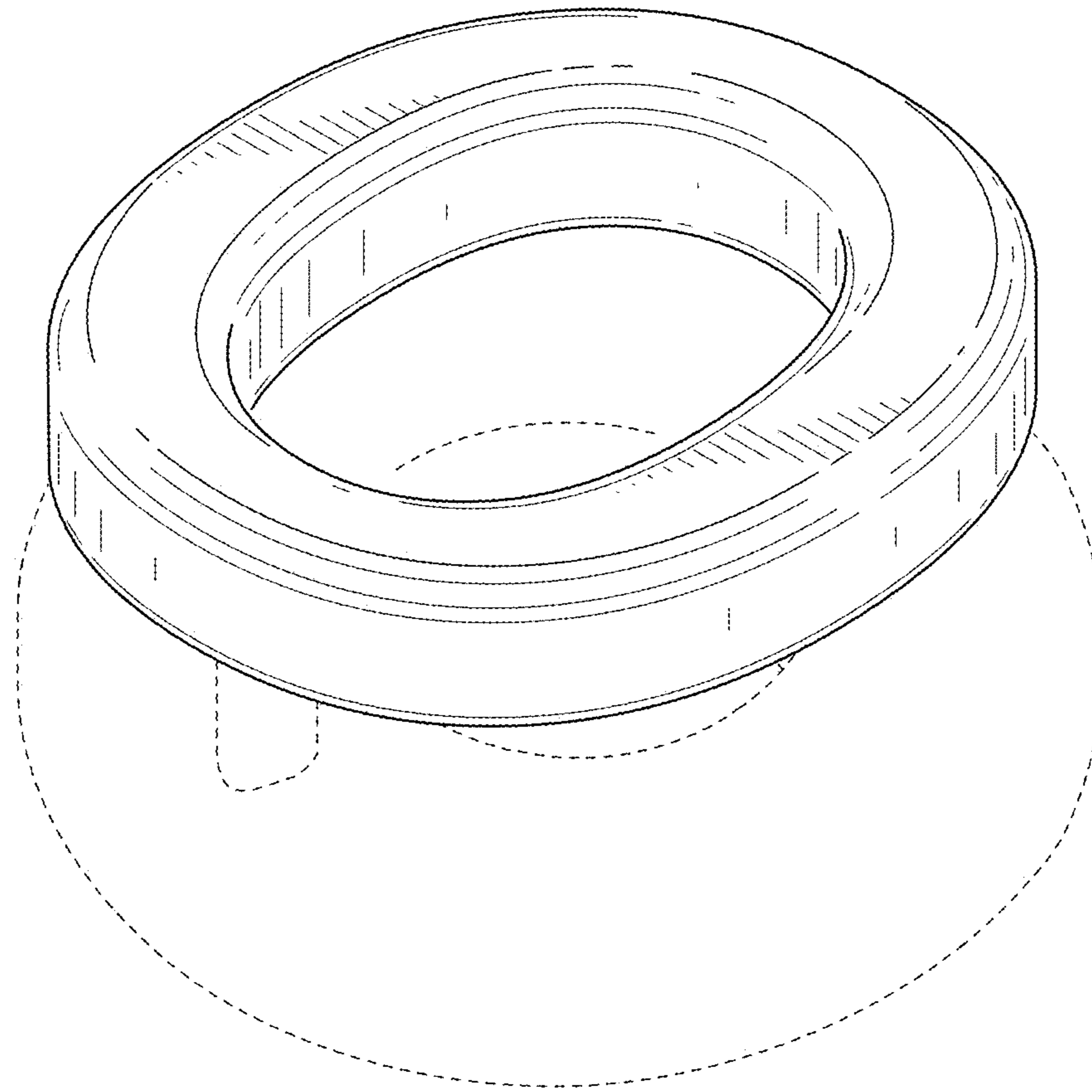


FIG. 113

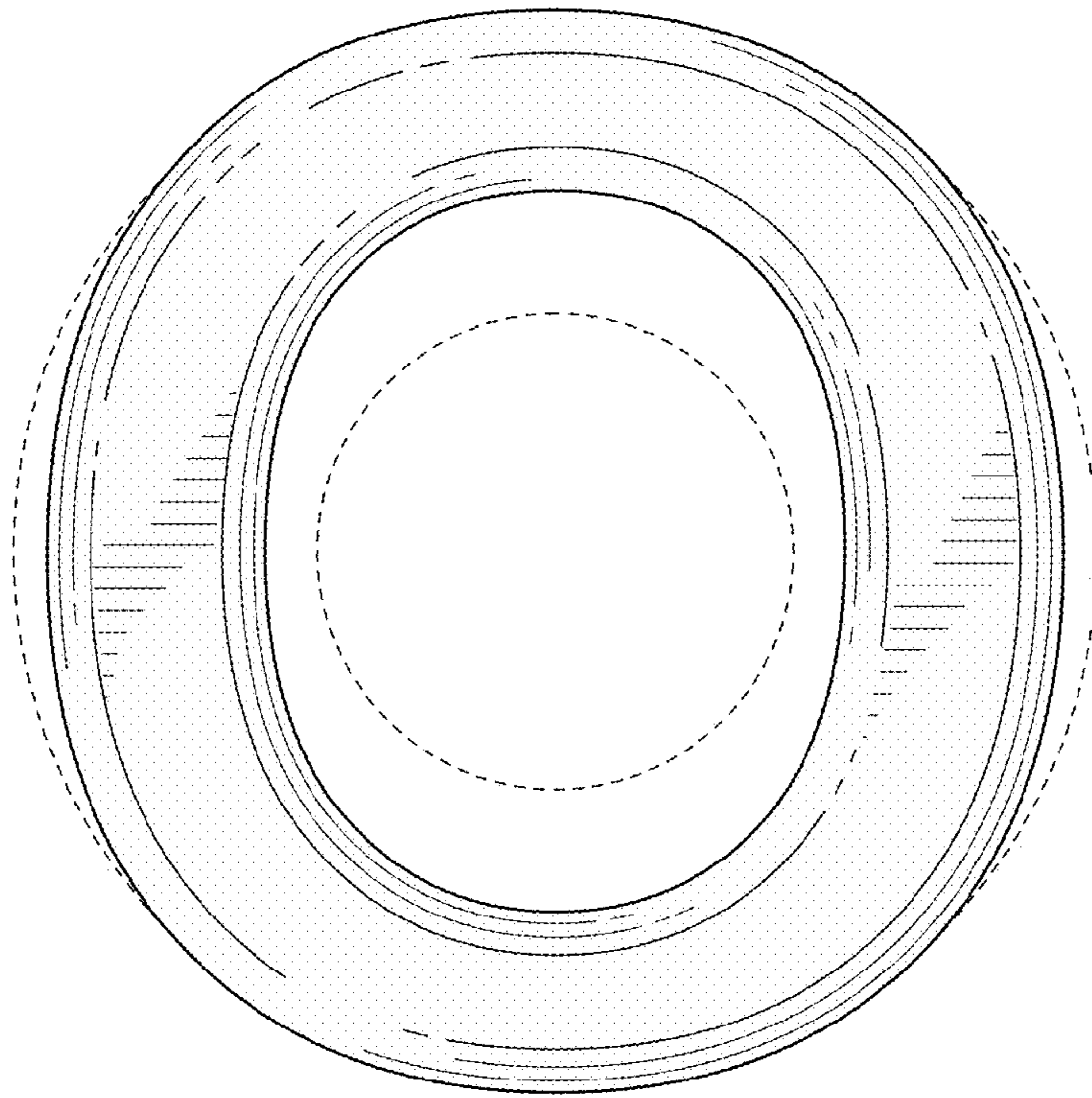


FIG. 114

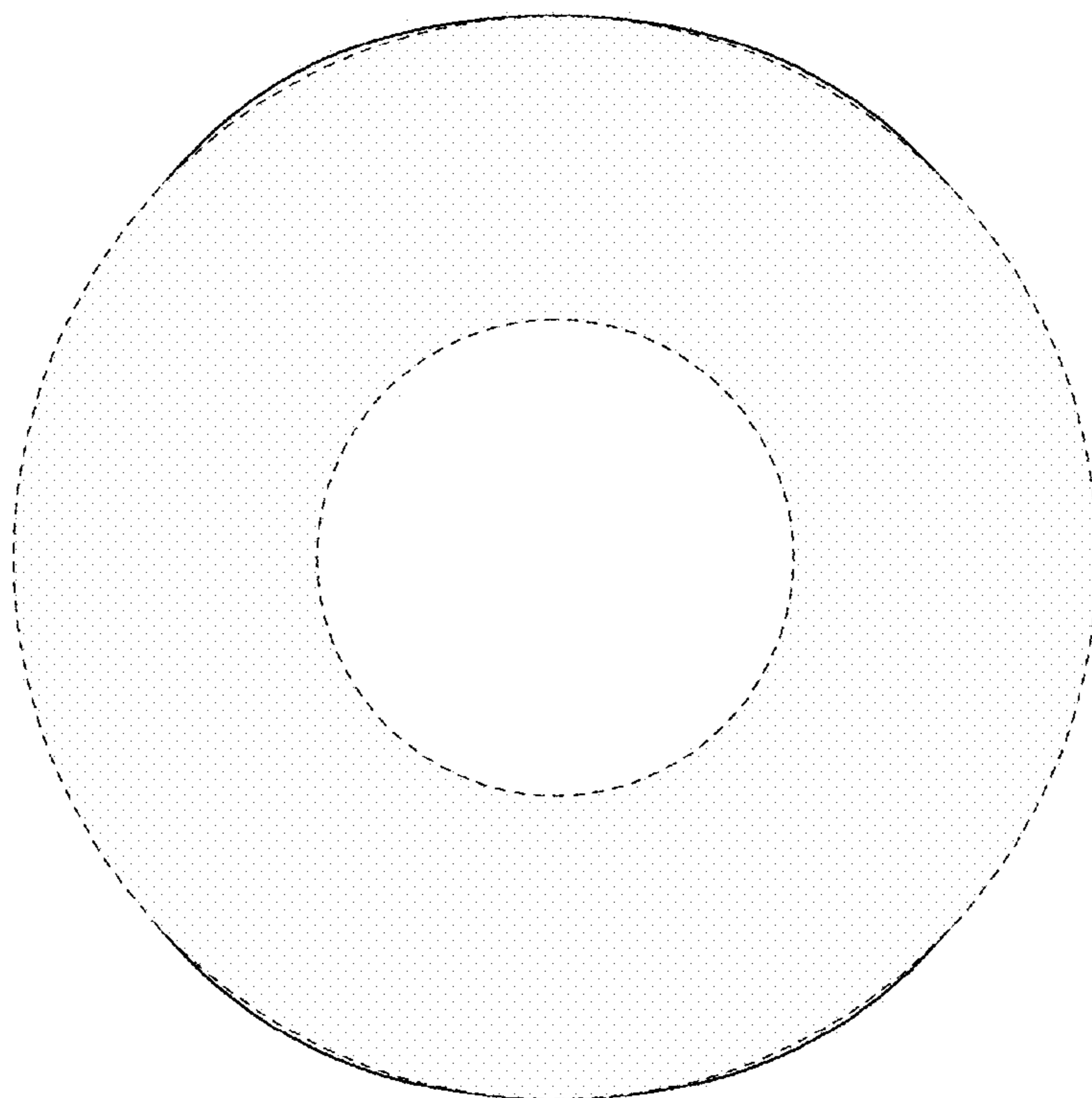


FIG. 115

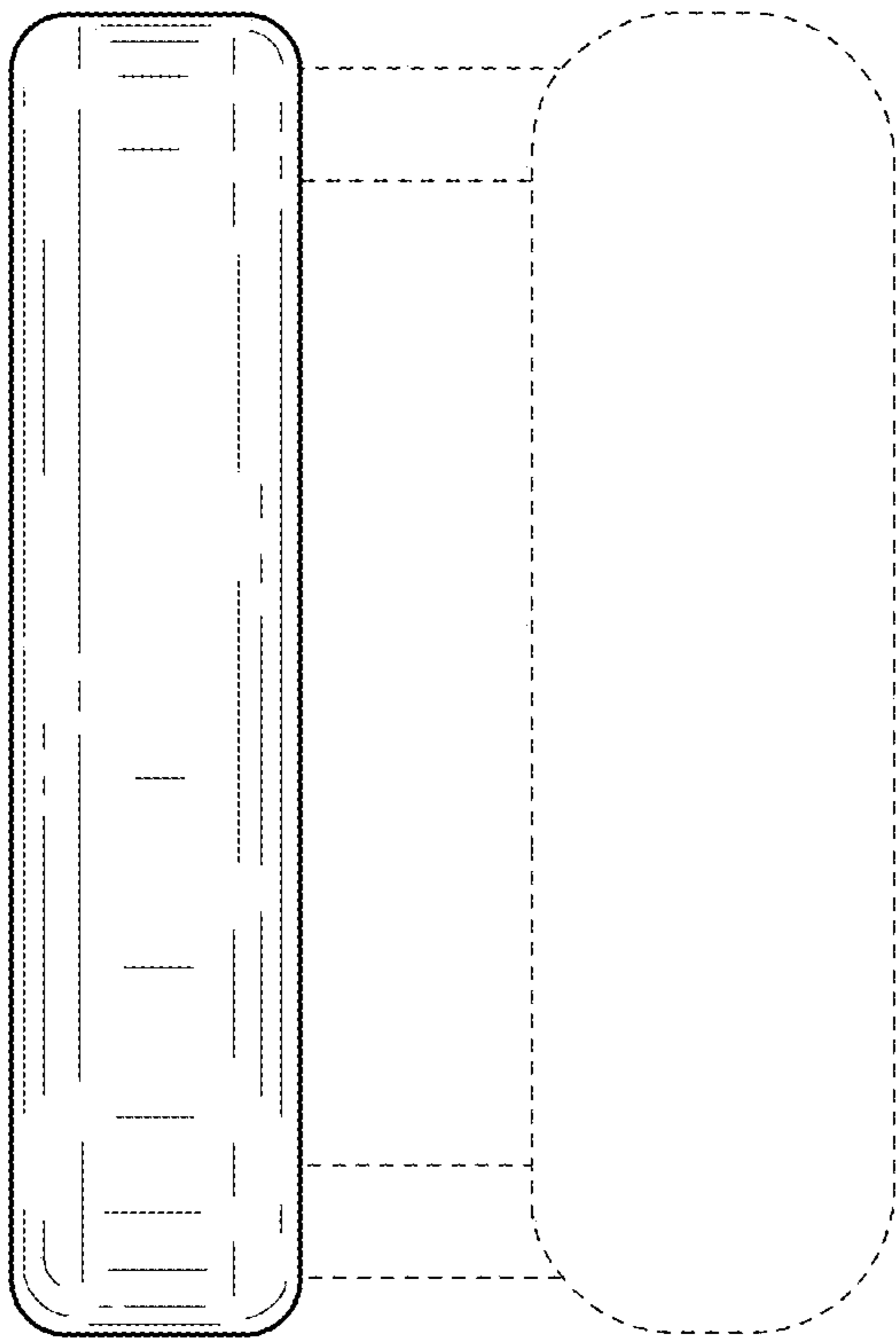


FIG. 116

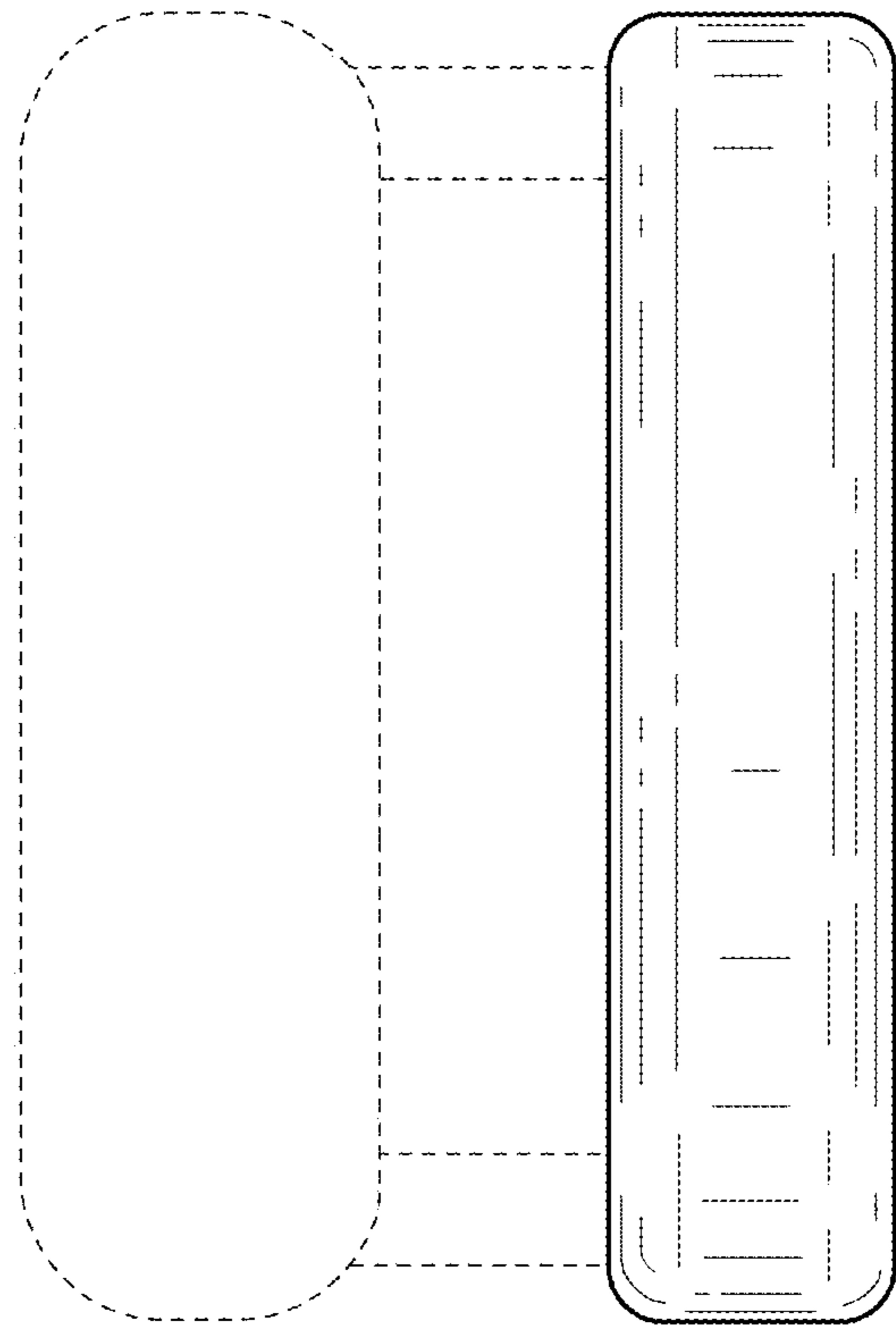


FIG. 117

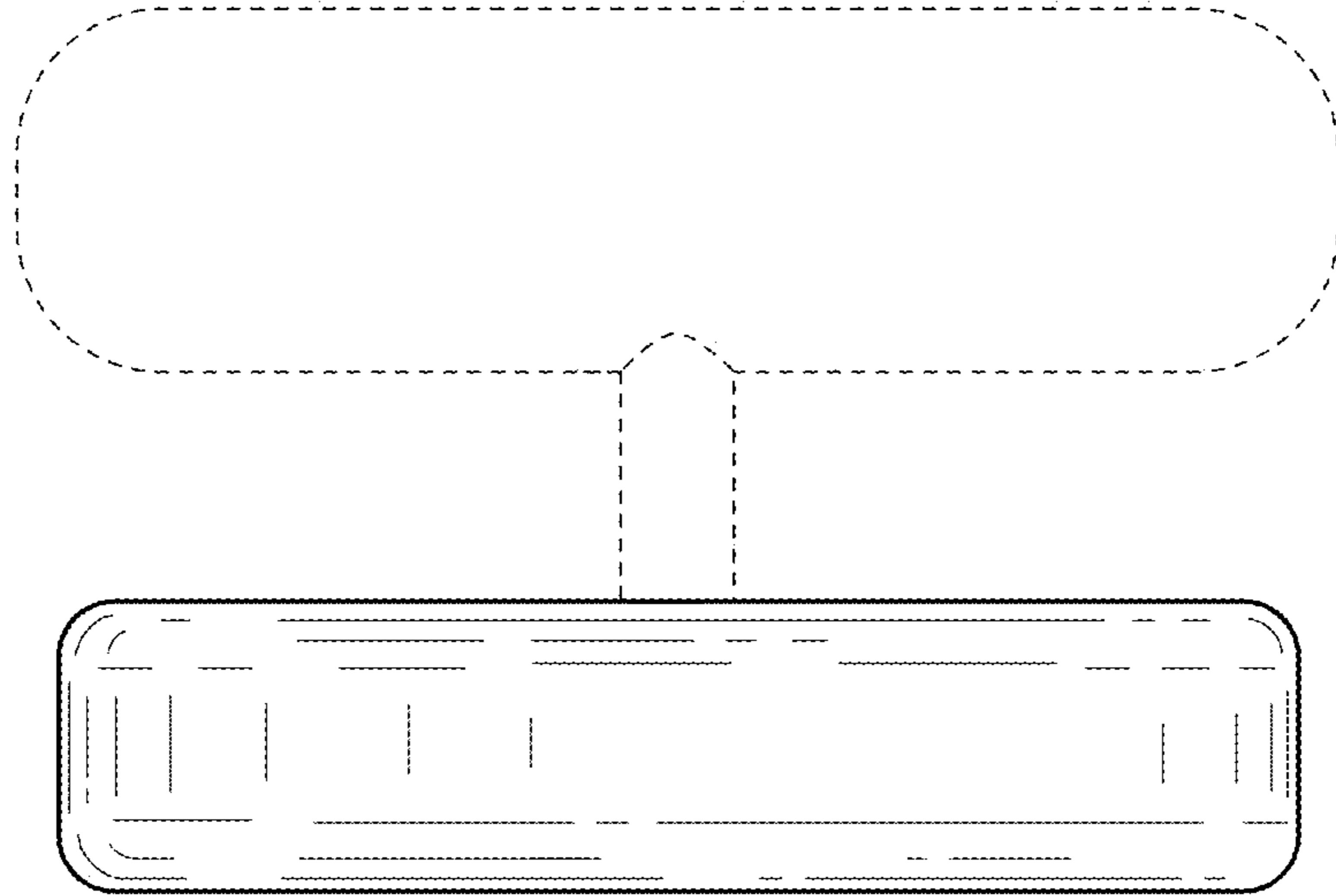


FIG. 118

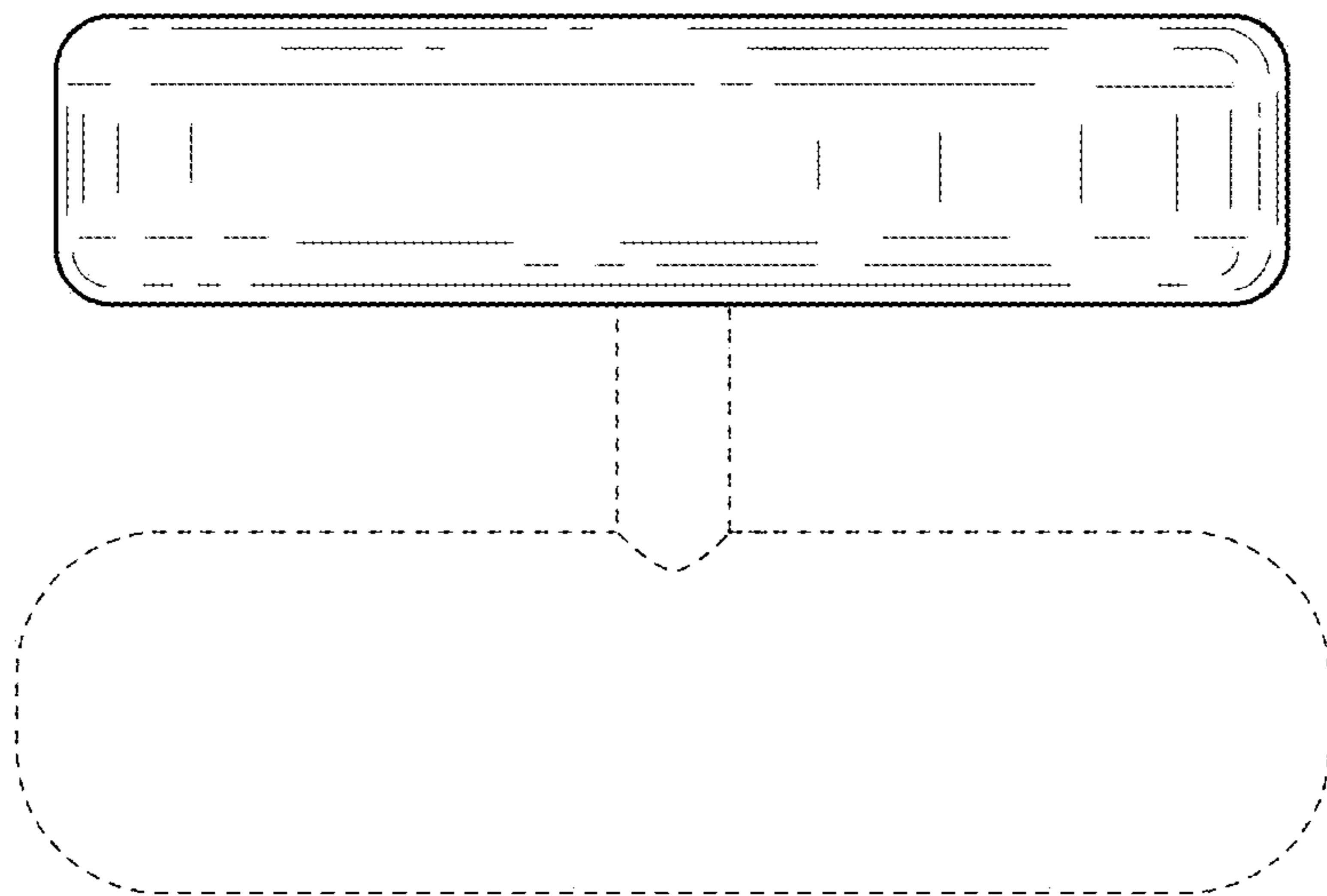


FIG. 119

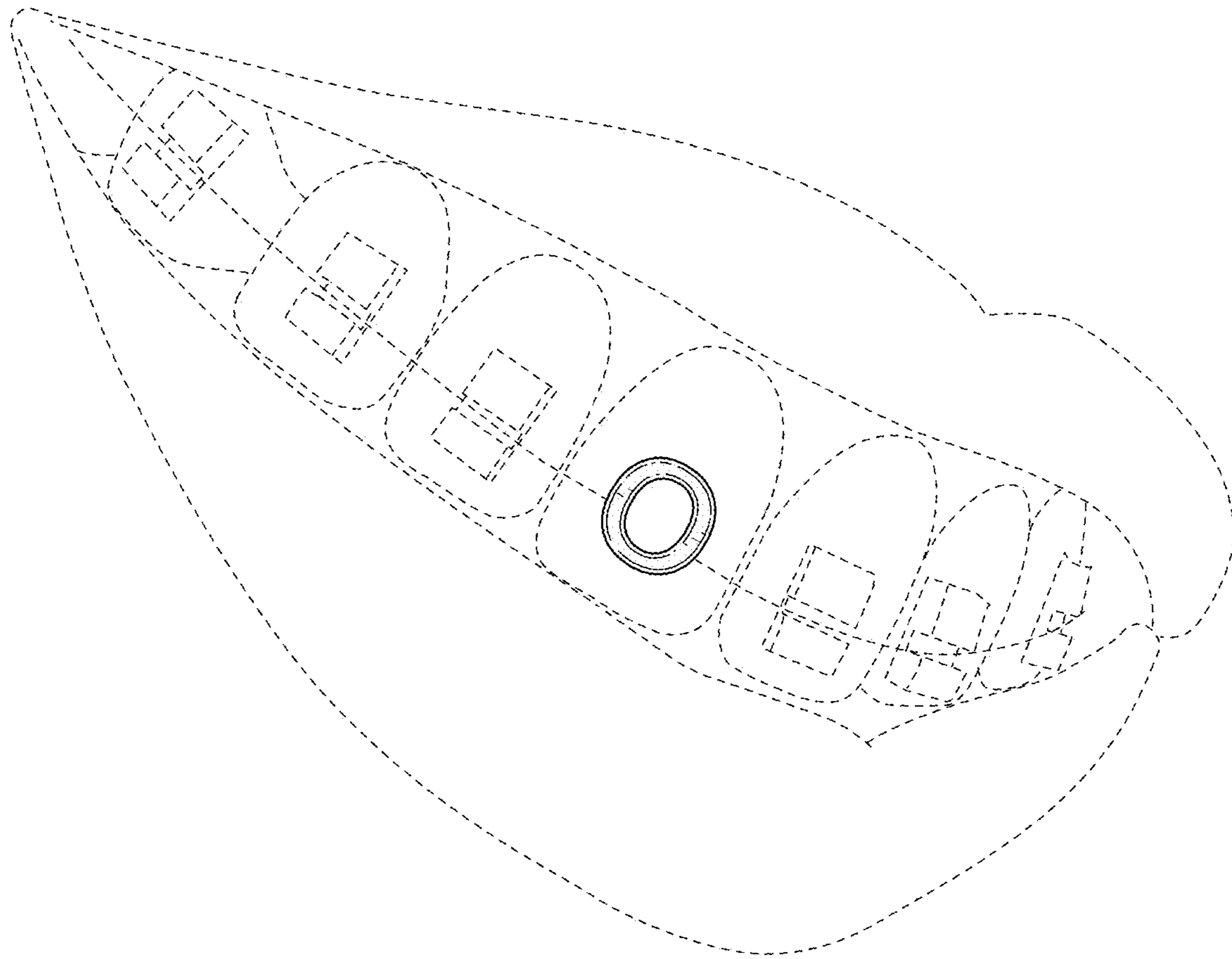


FIG. 120

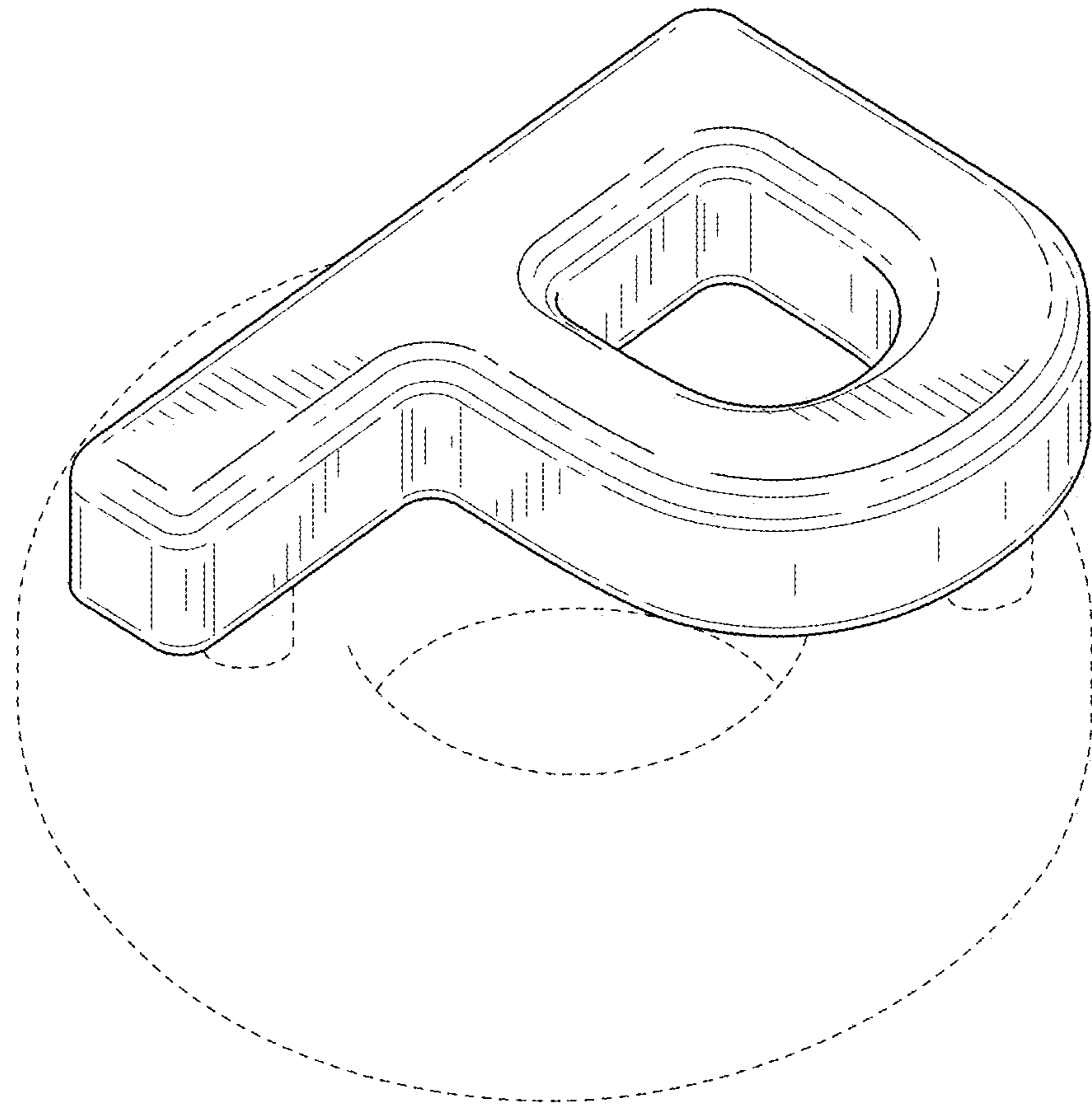


FIG. 121

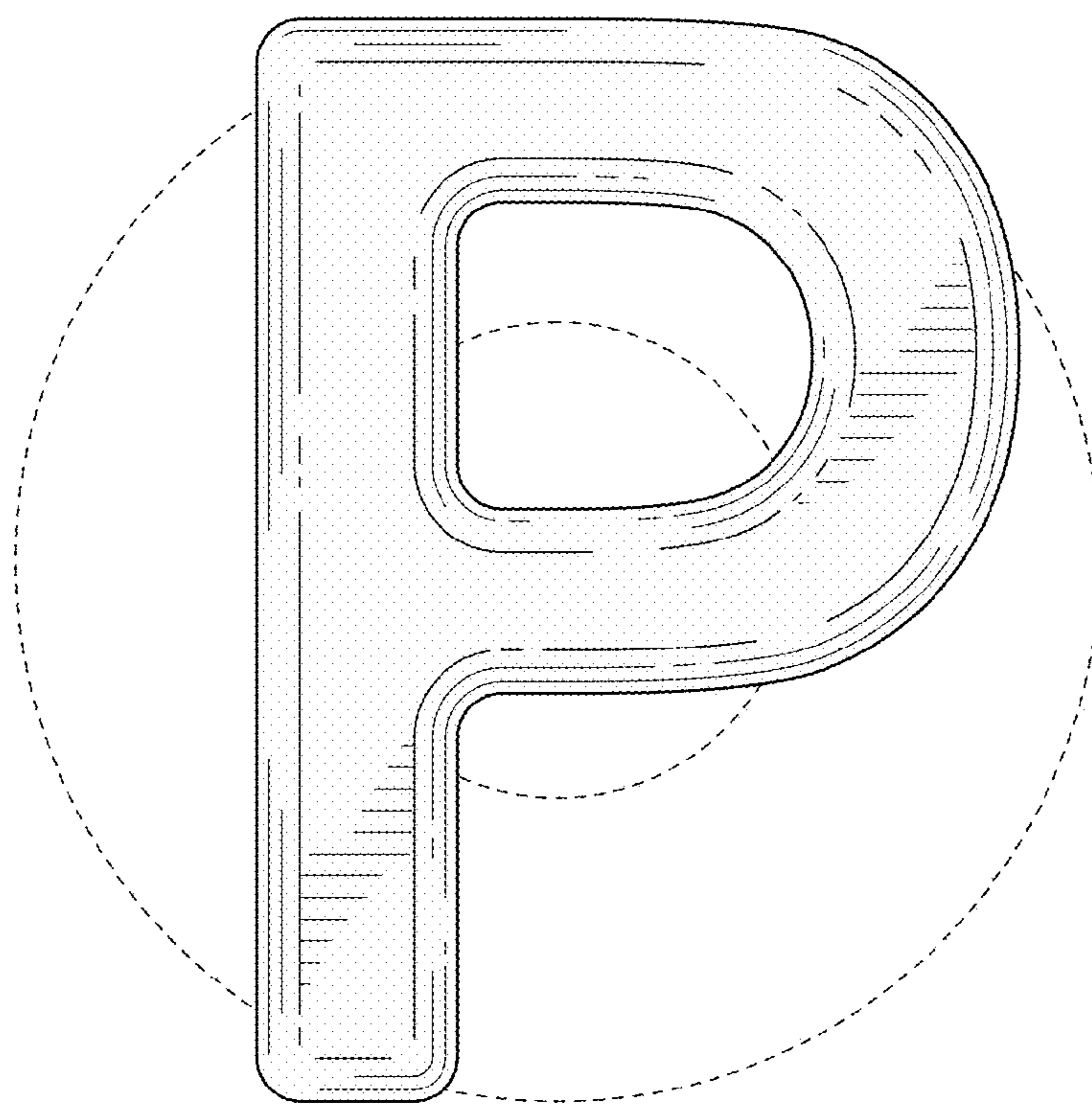


FIG. 122

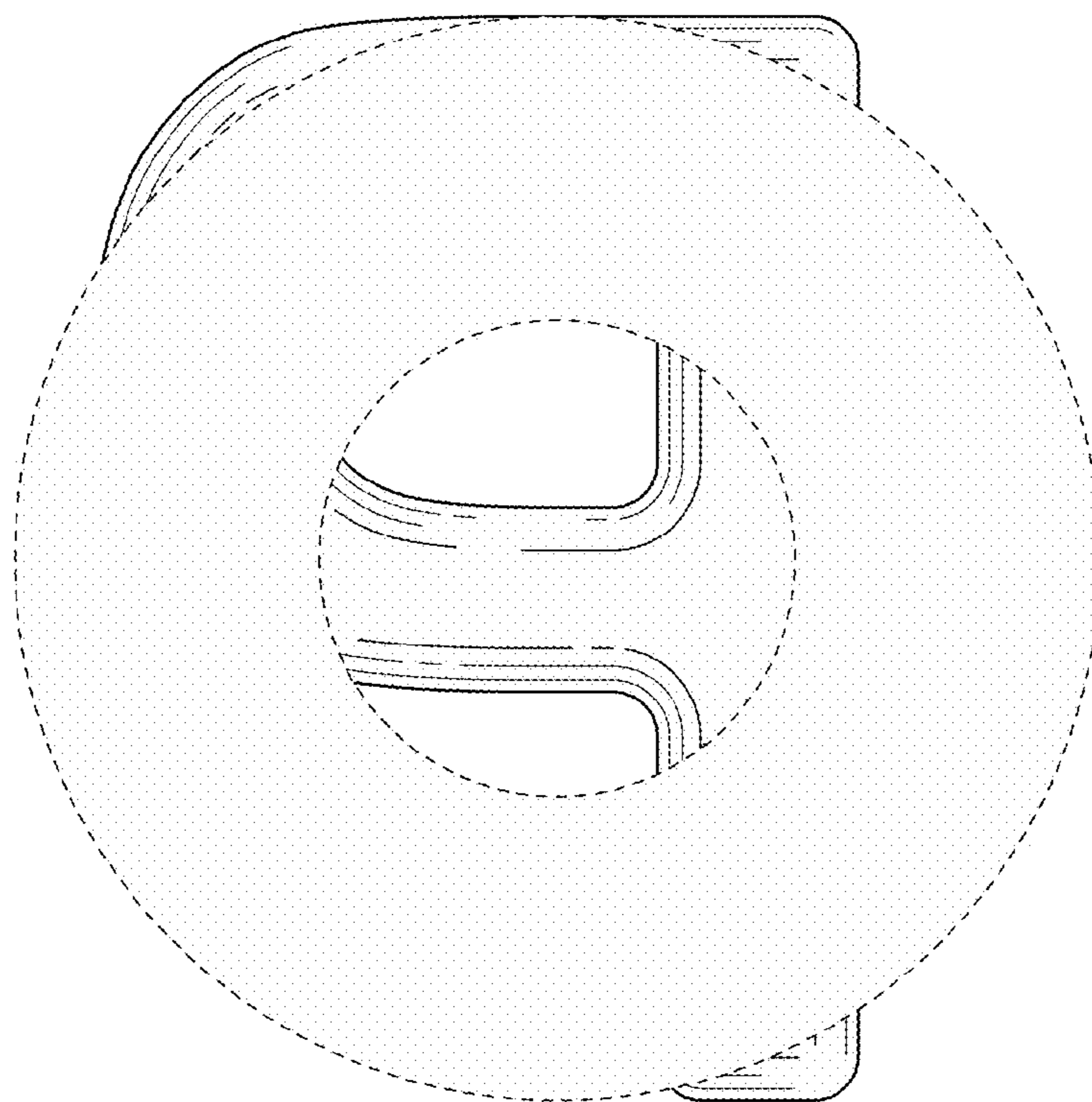


FIG. 123

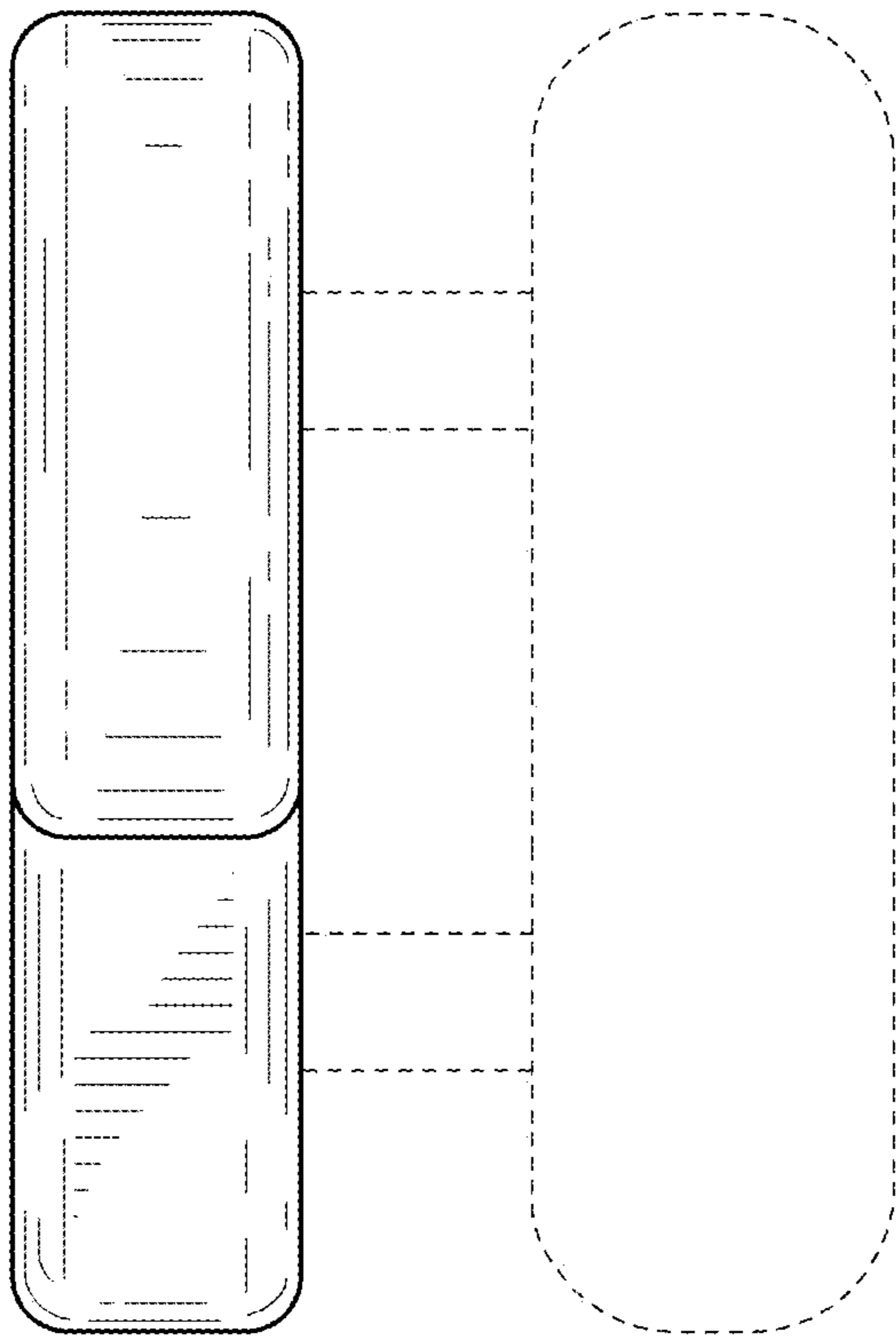


FIG. 124

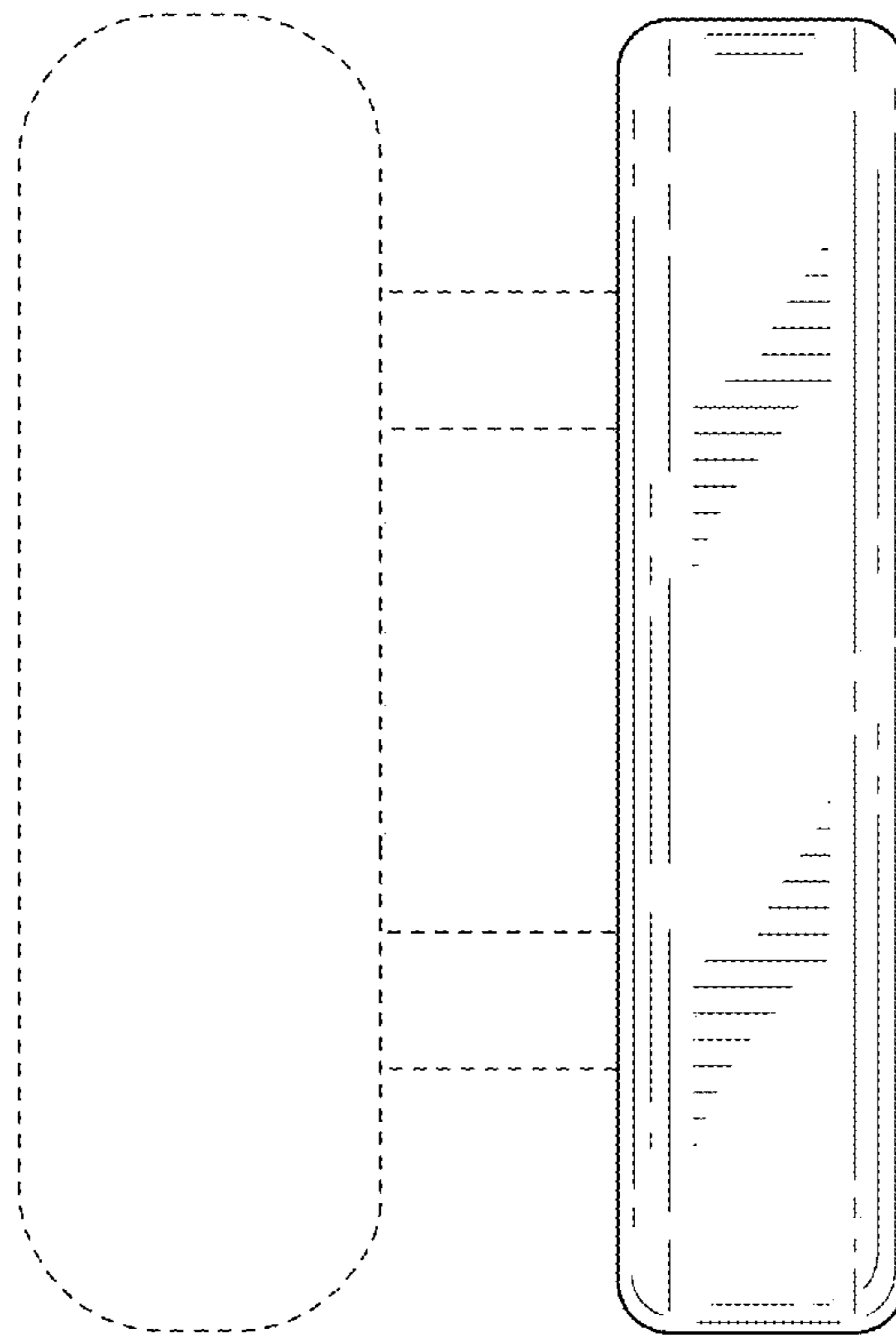


FIG. 125

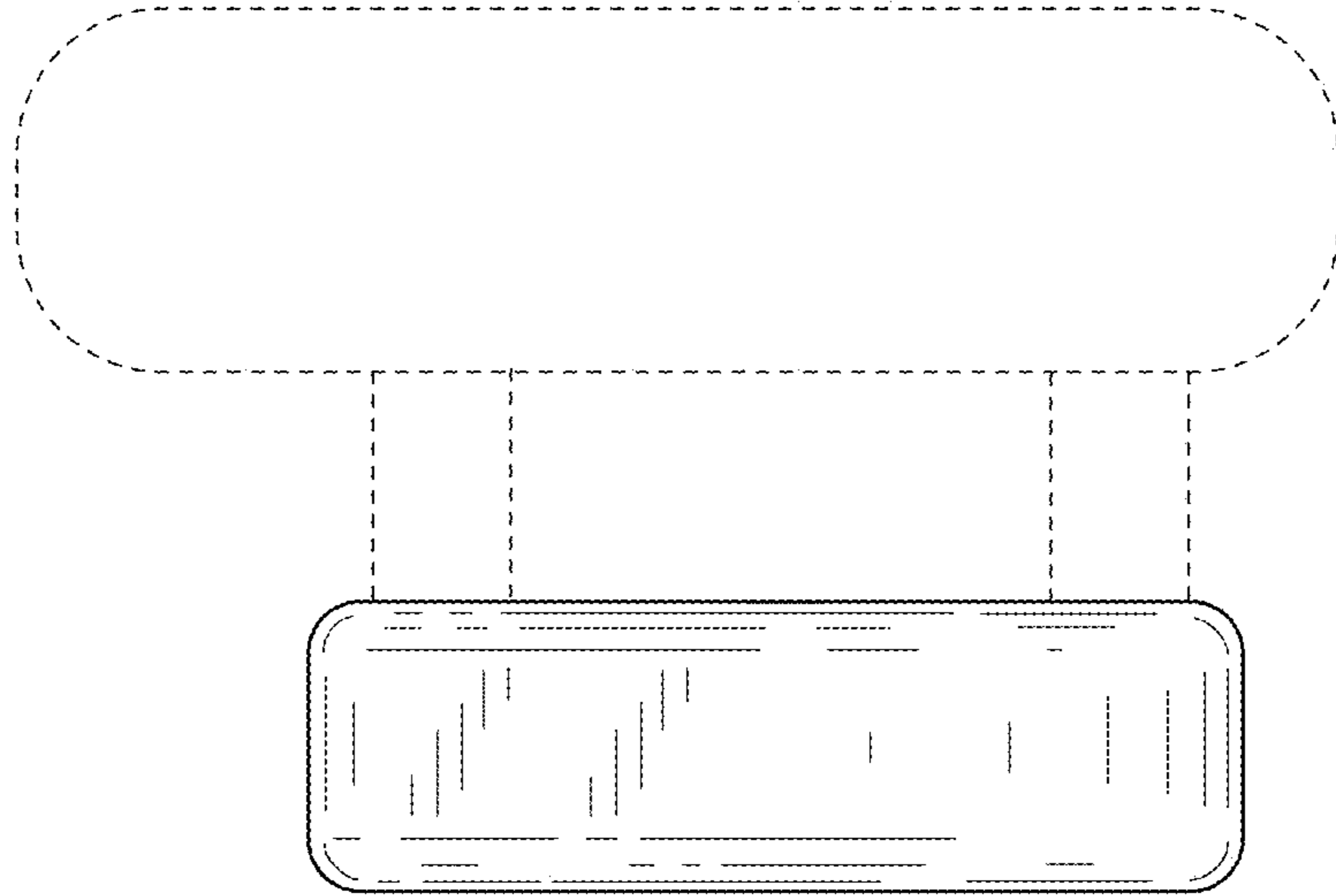


FIG. 126

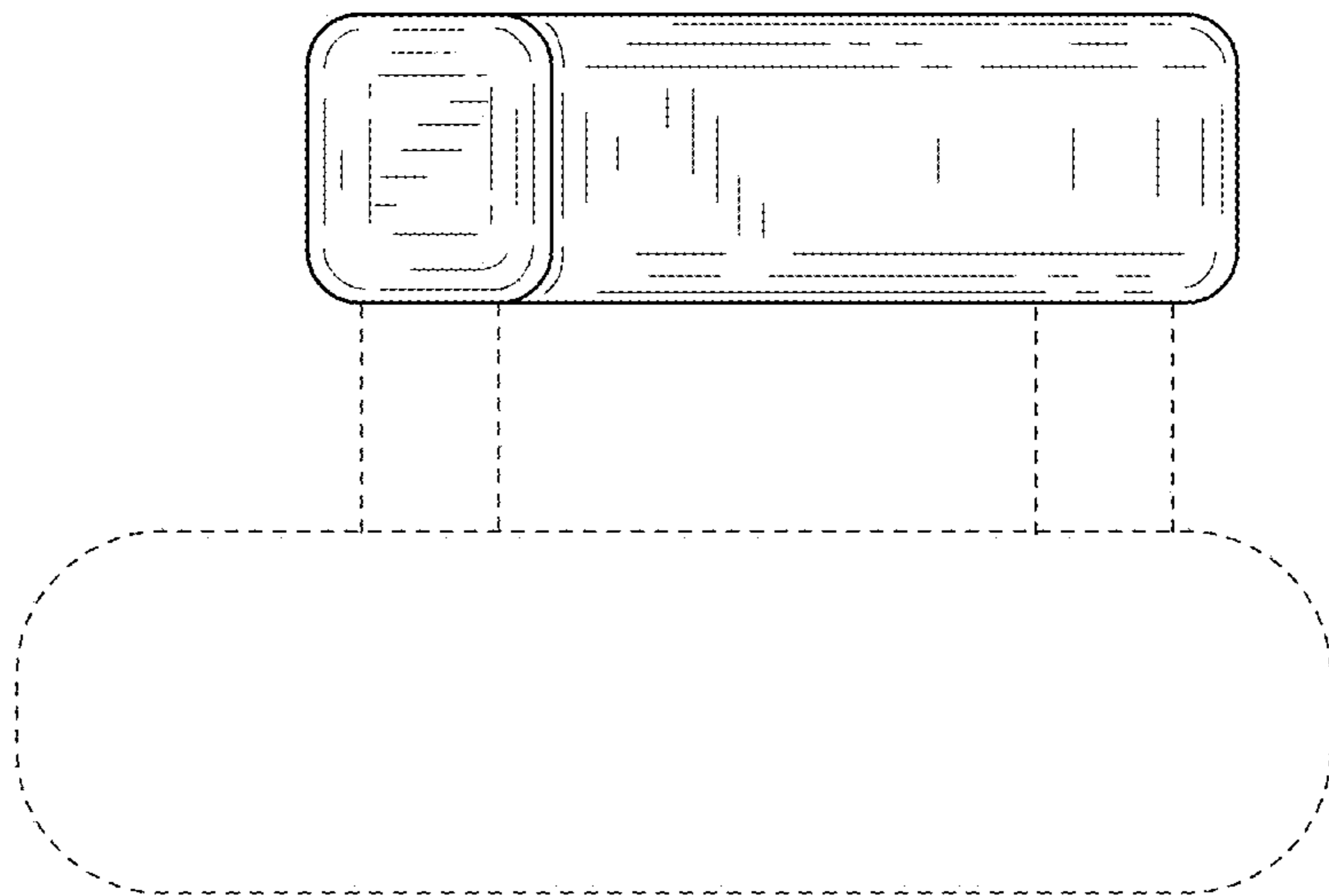


FIG. 127

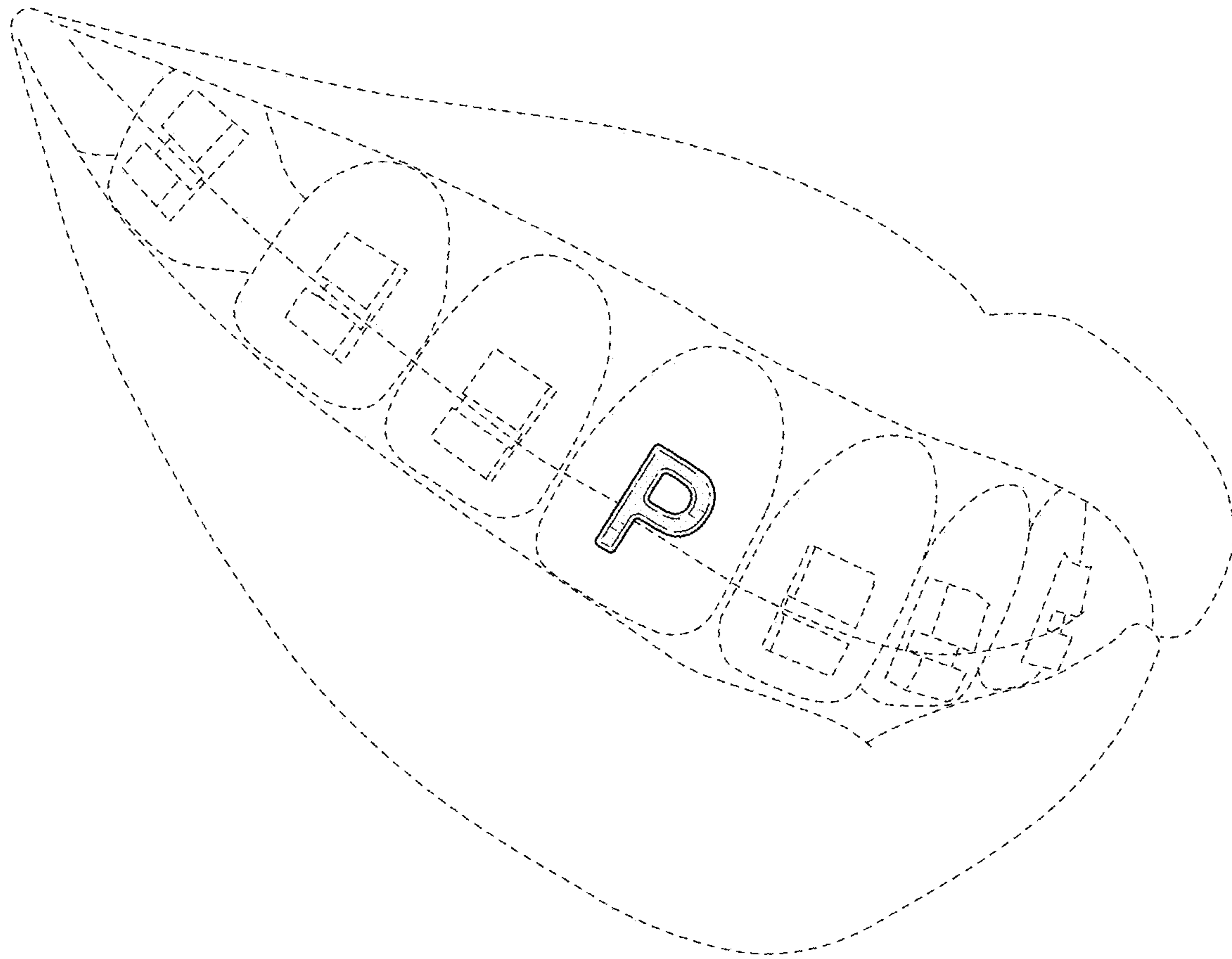


FIG. 128

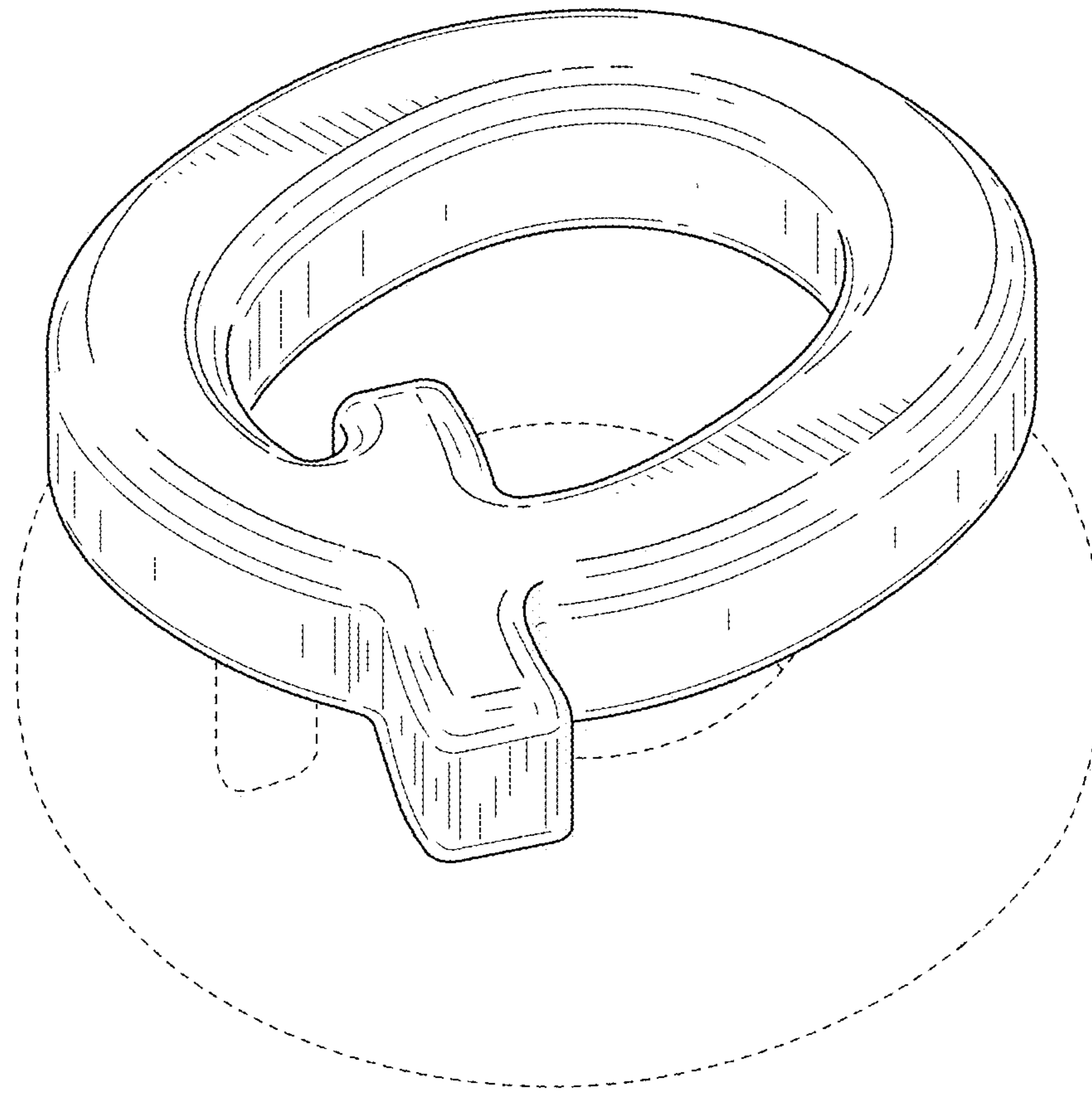


FIG. 129

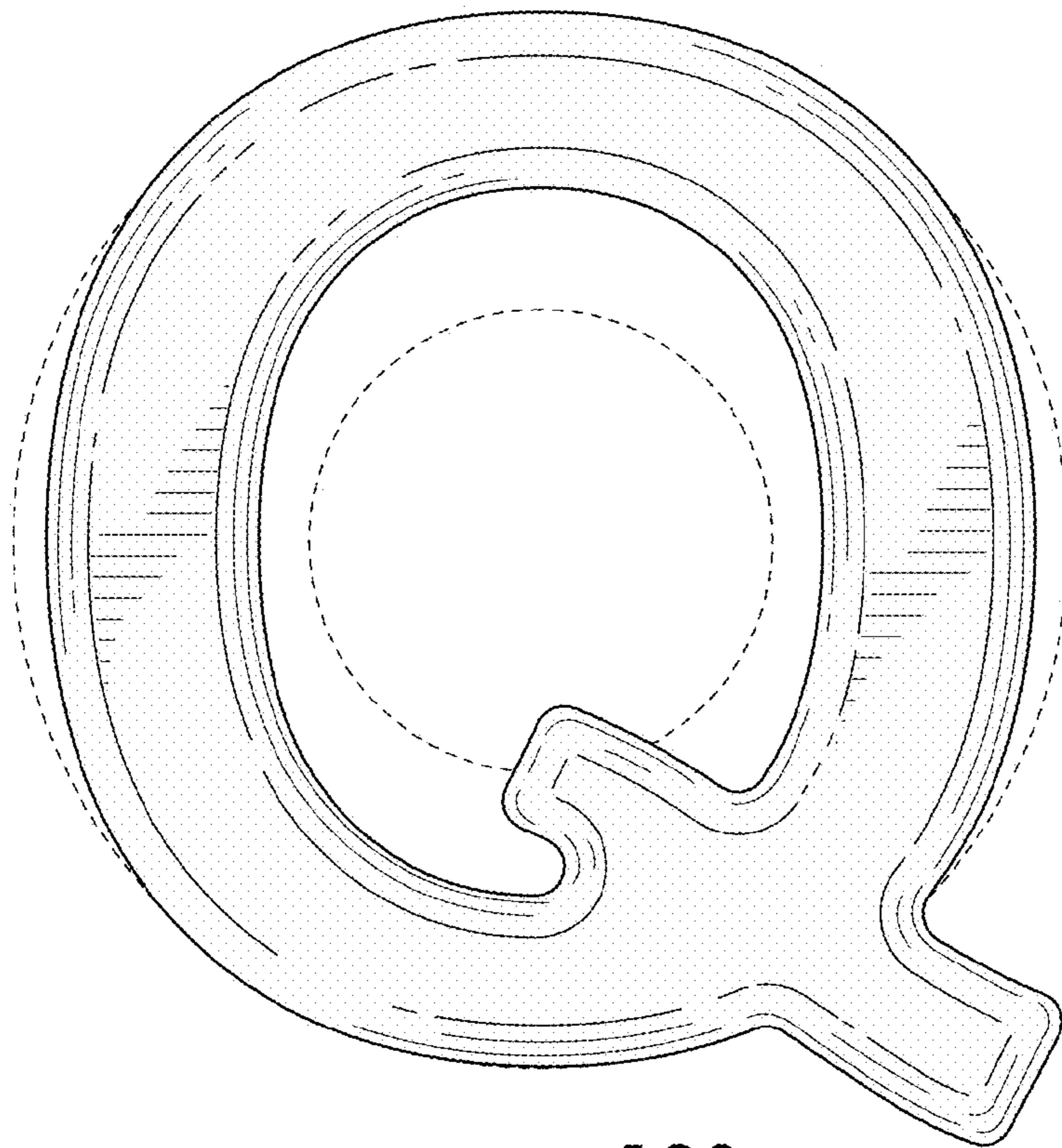


FIG. 130

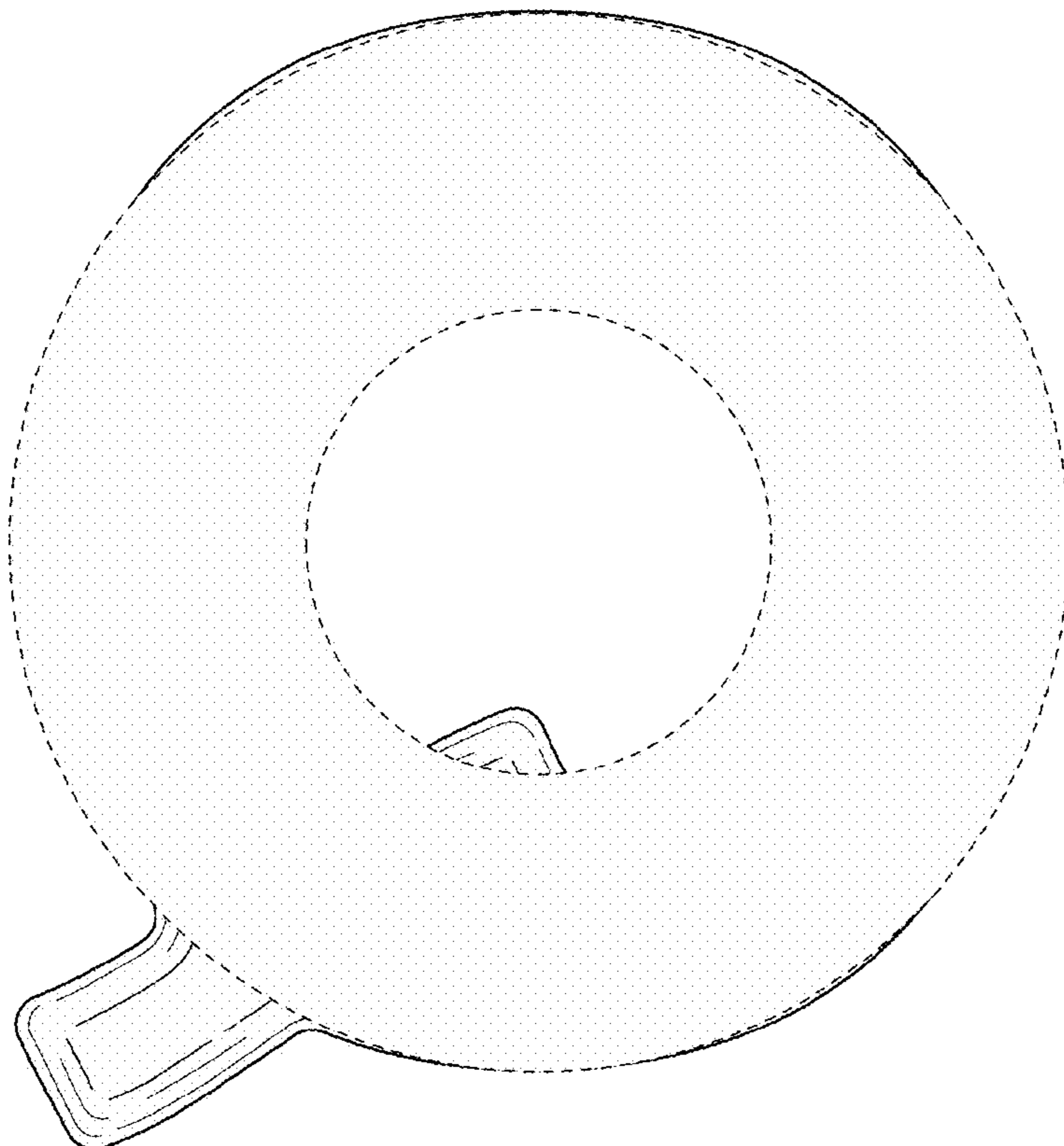


FIG. 131

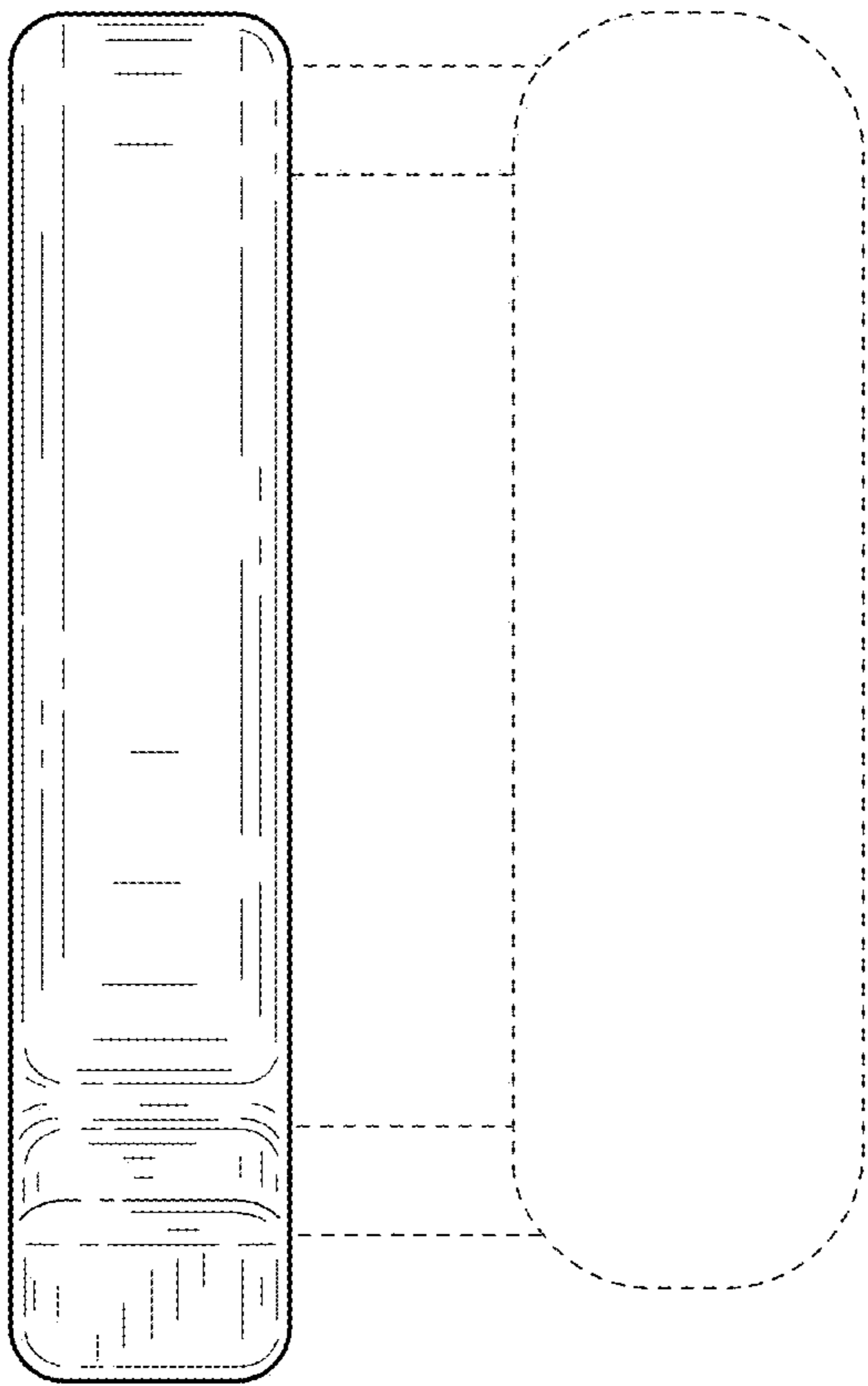


FIG. 132

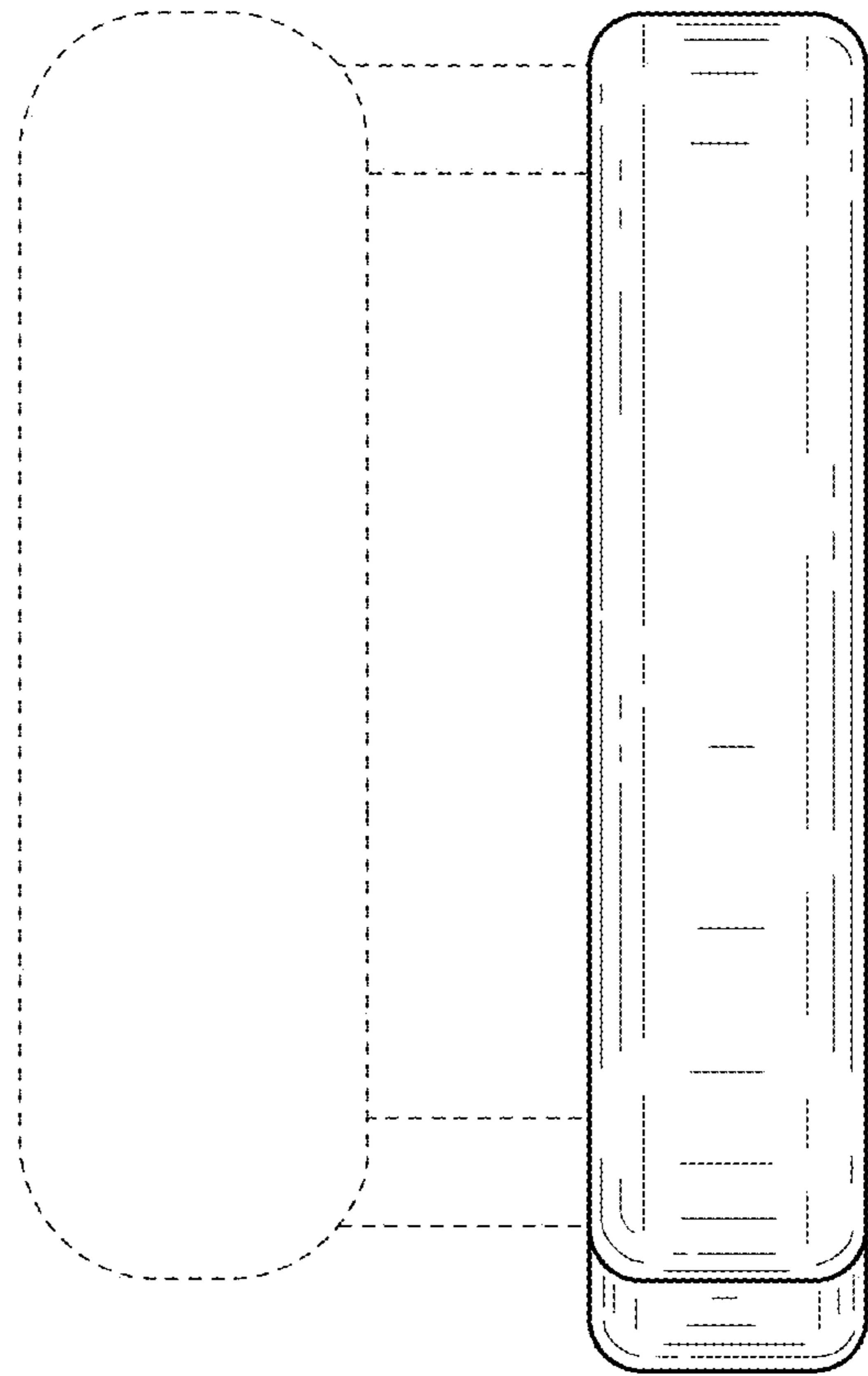


FIG. 133

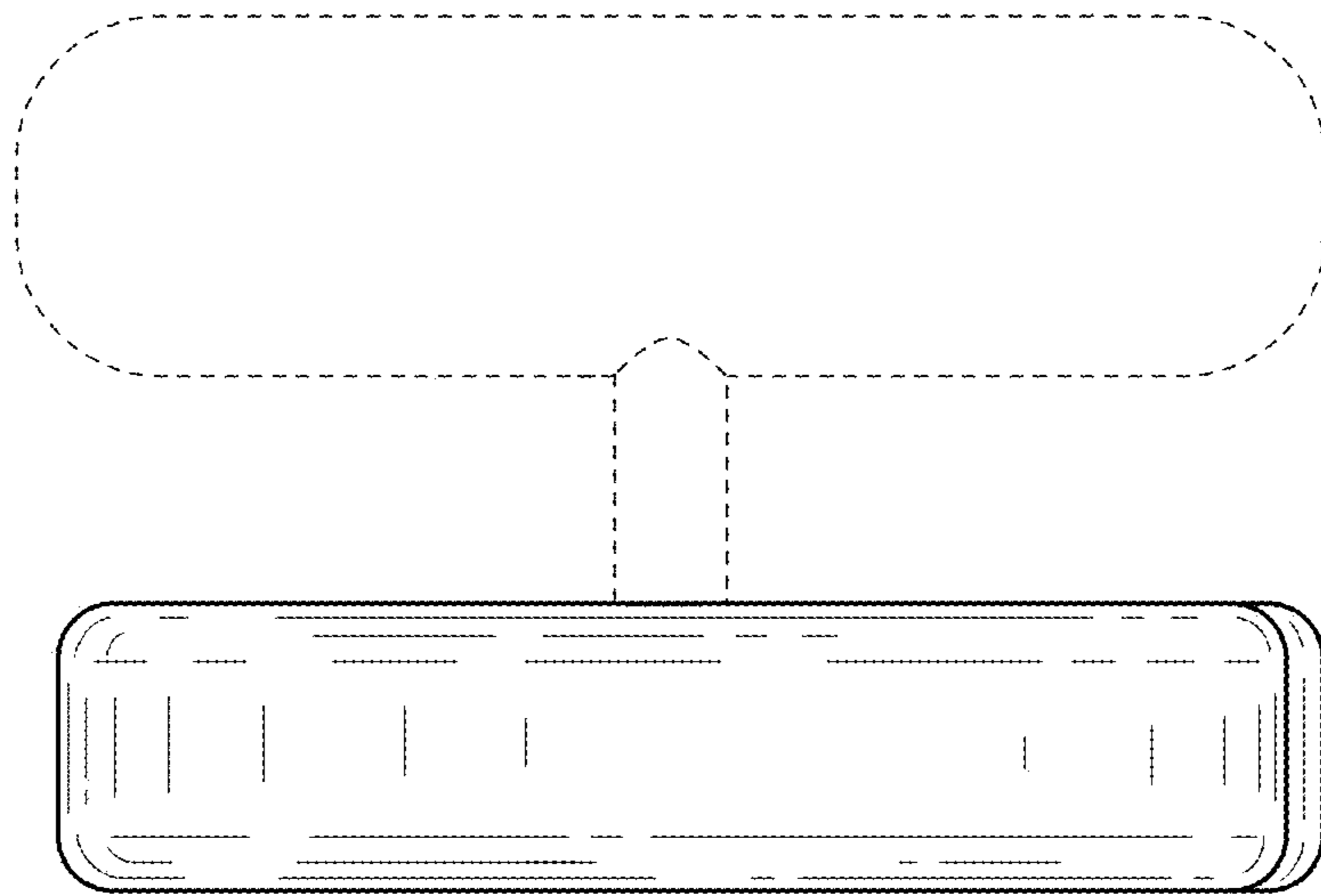


FIG. 134

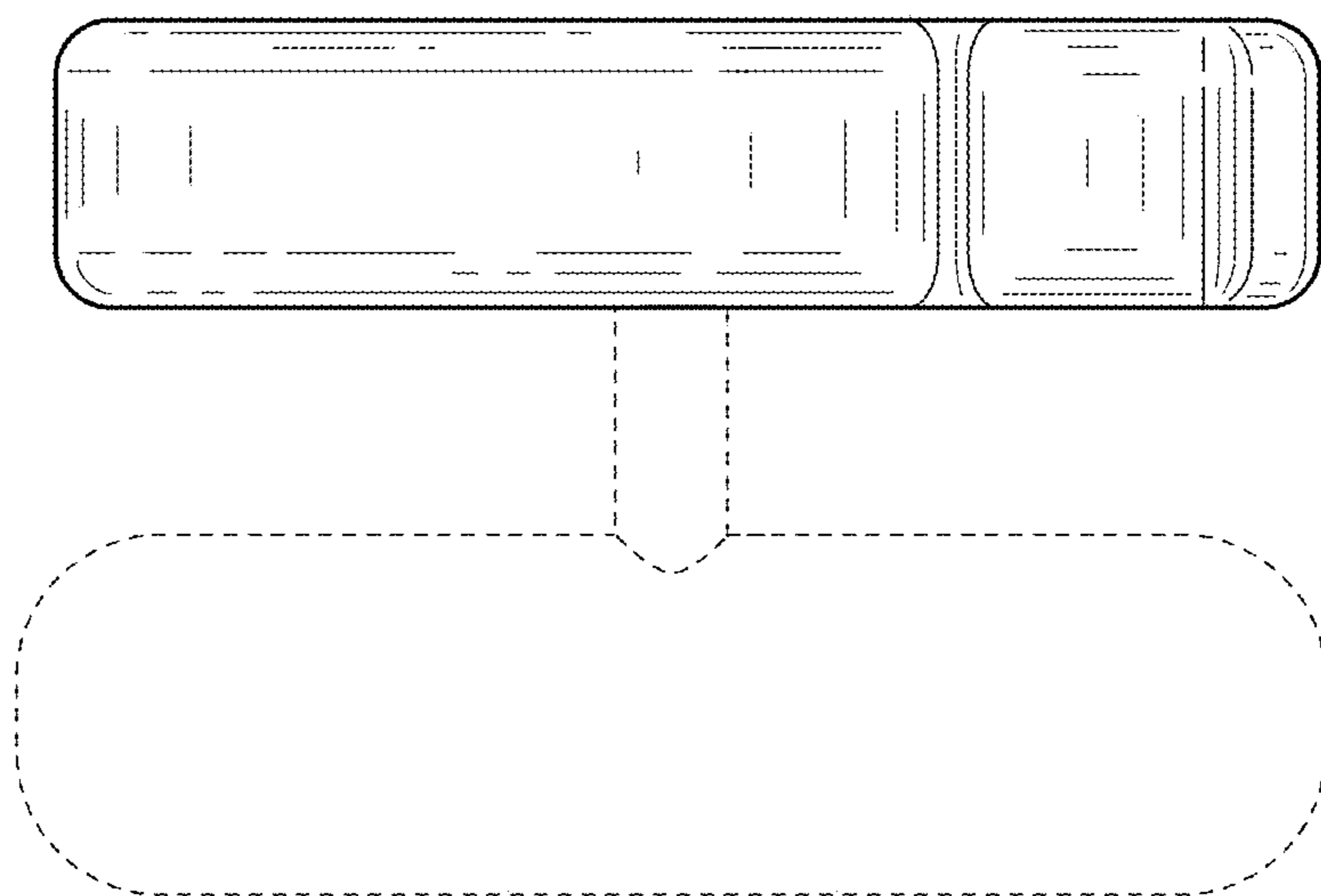


FIG. 135

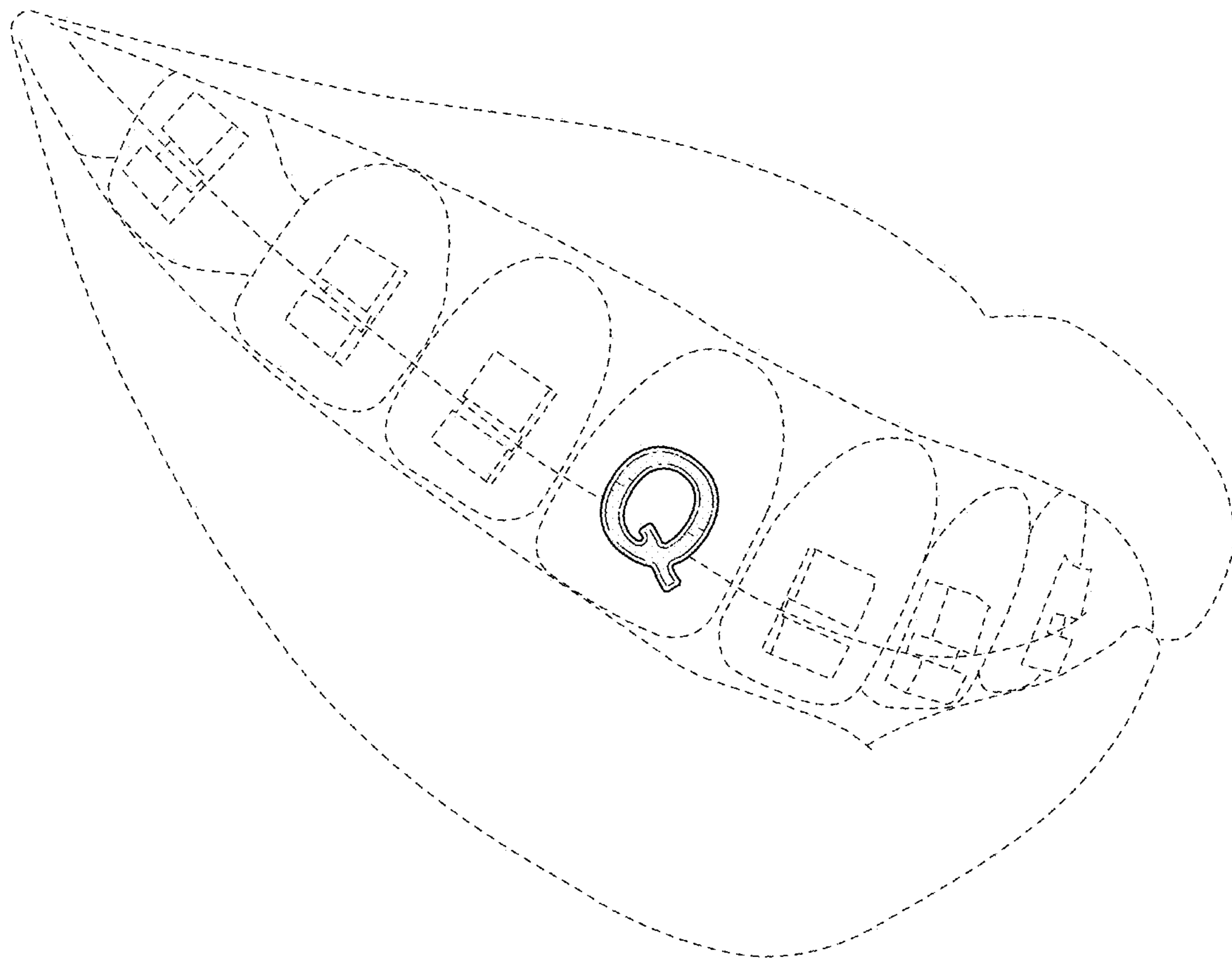


FIG. 136

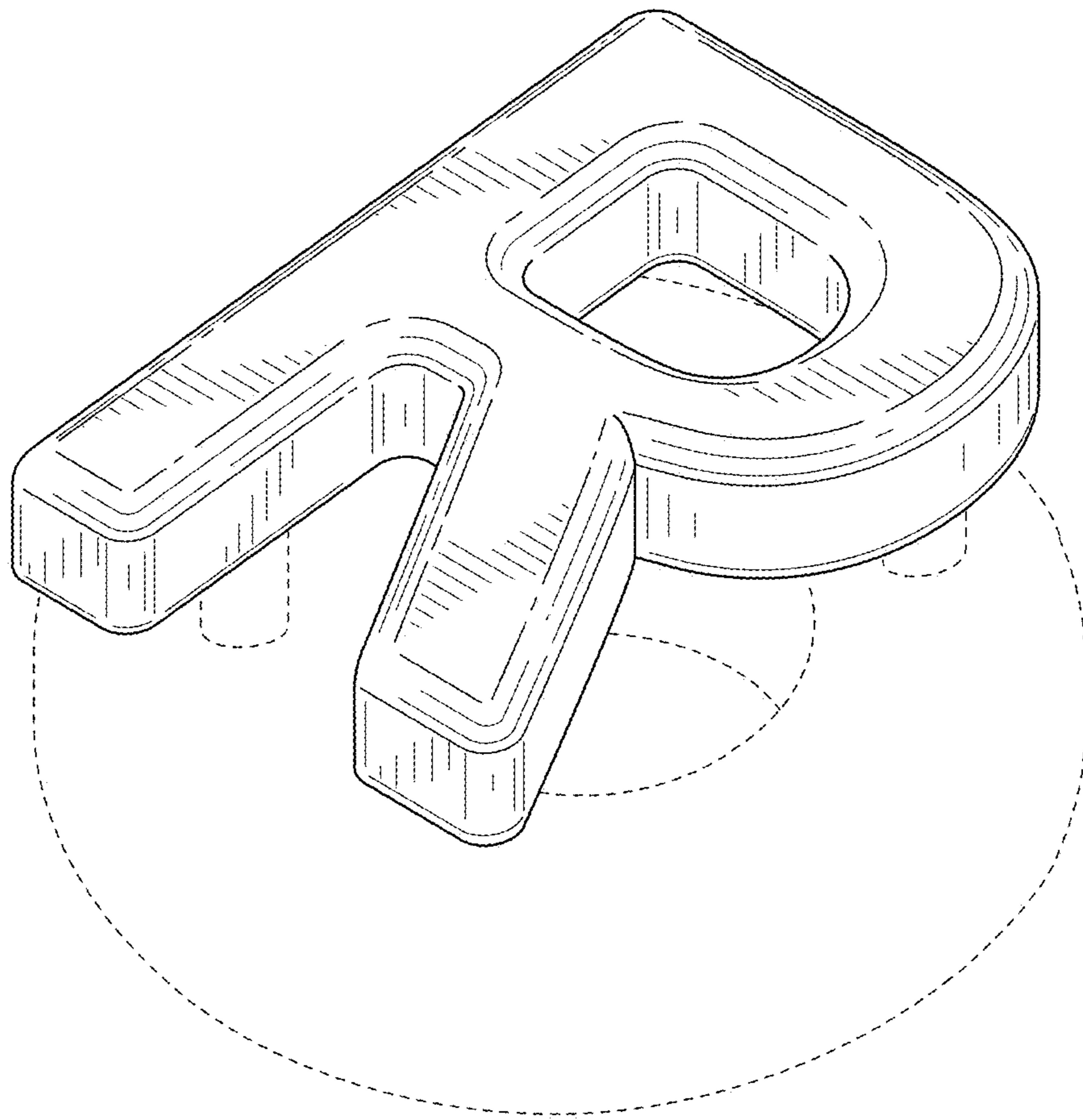


FIG. 137



FIG. 138

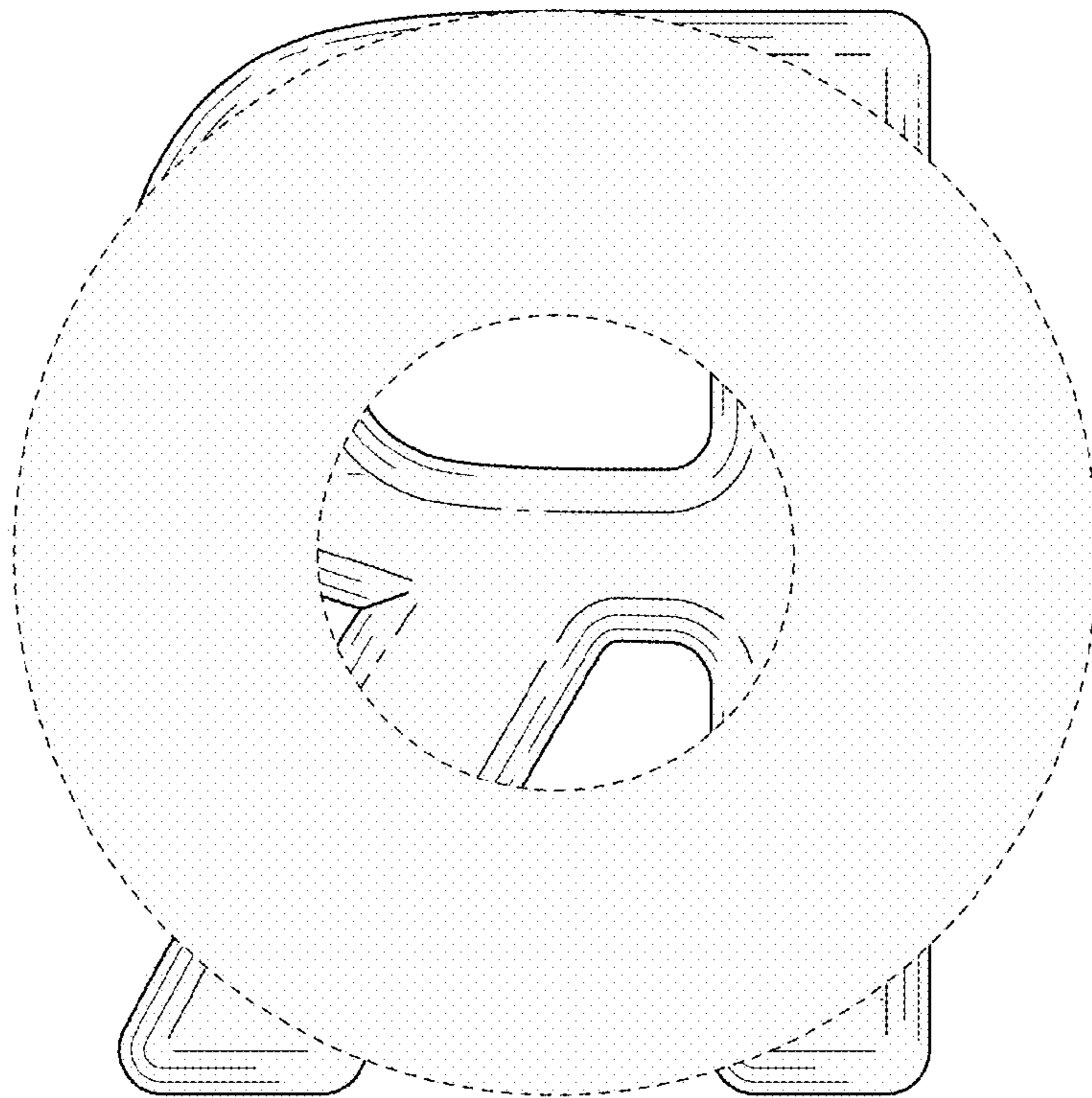


FIG. 139

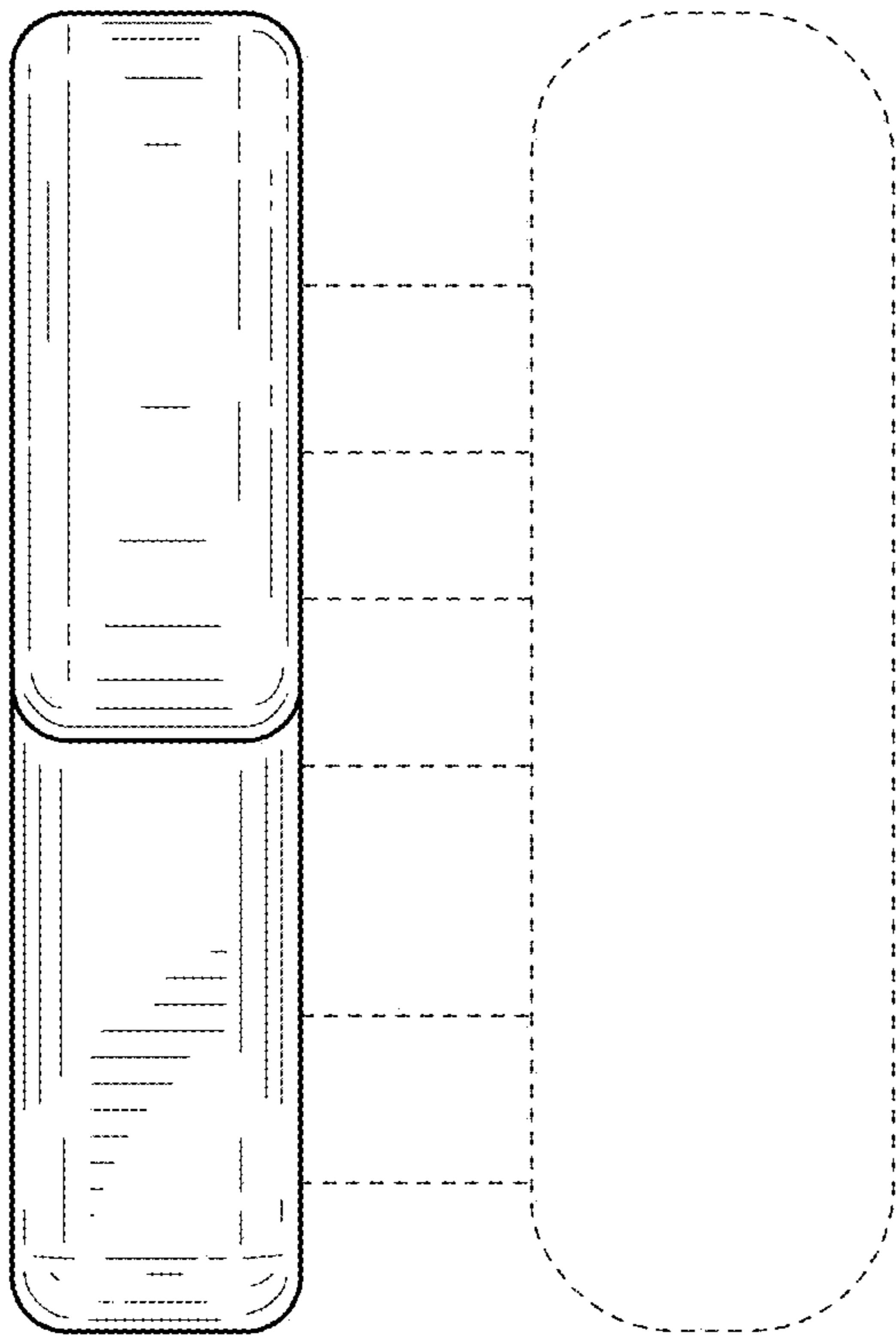


FIG. 140

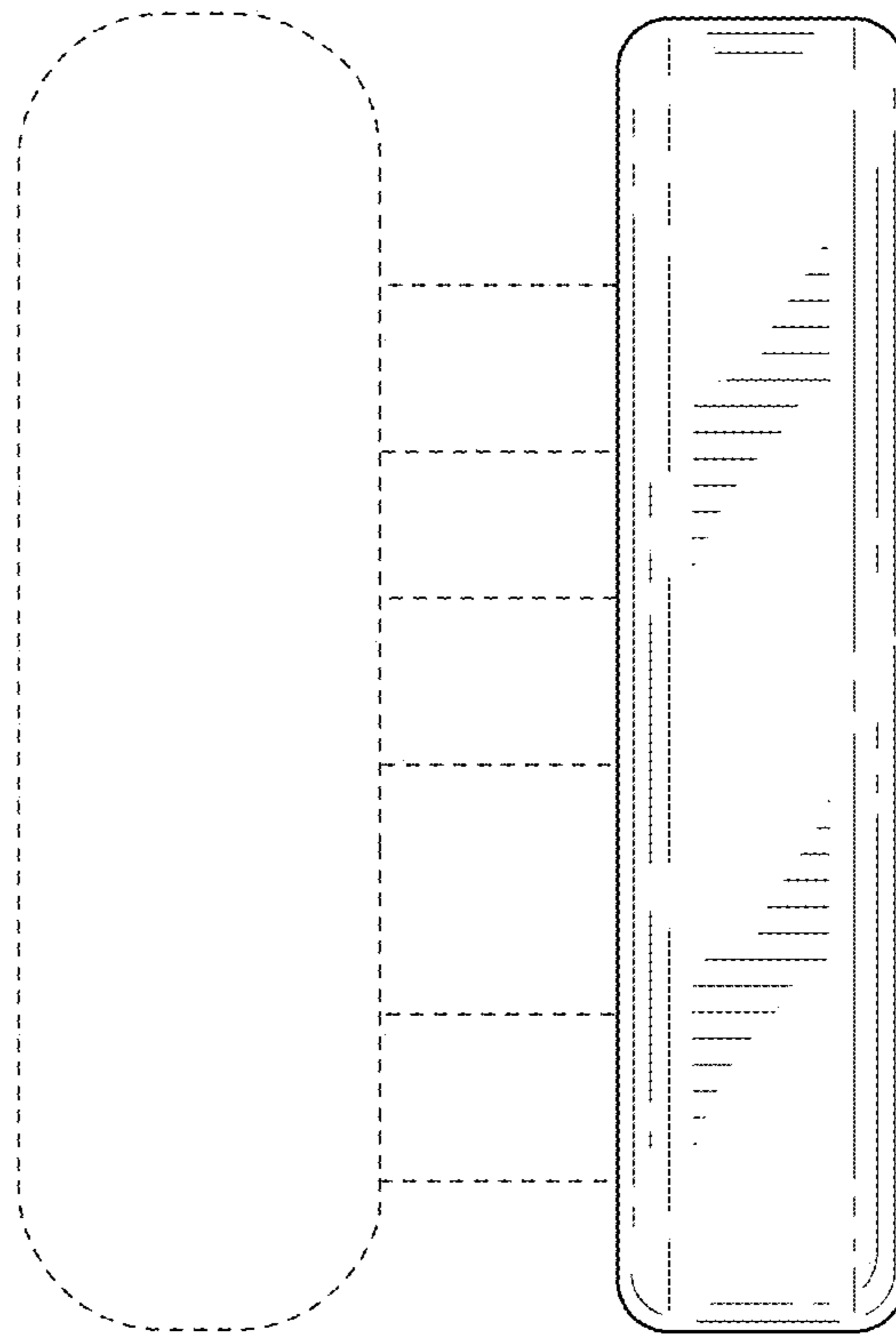


FIG. 141

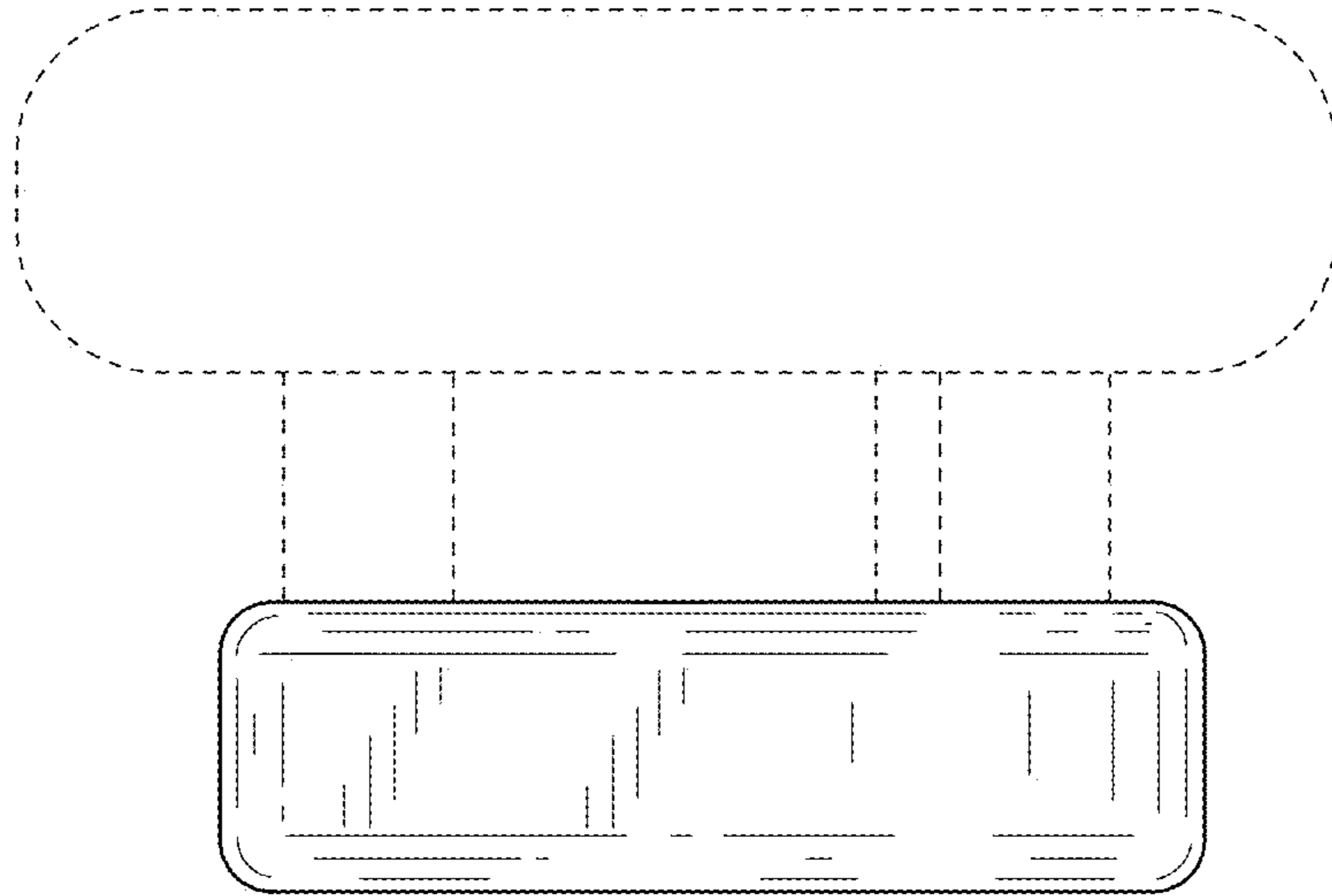


FIG. 142

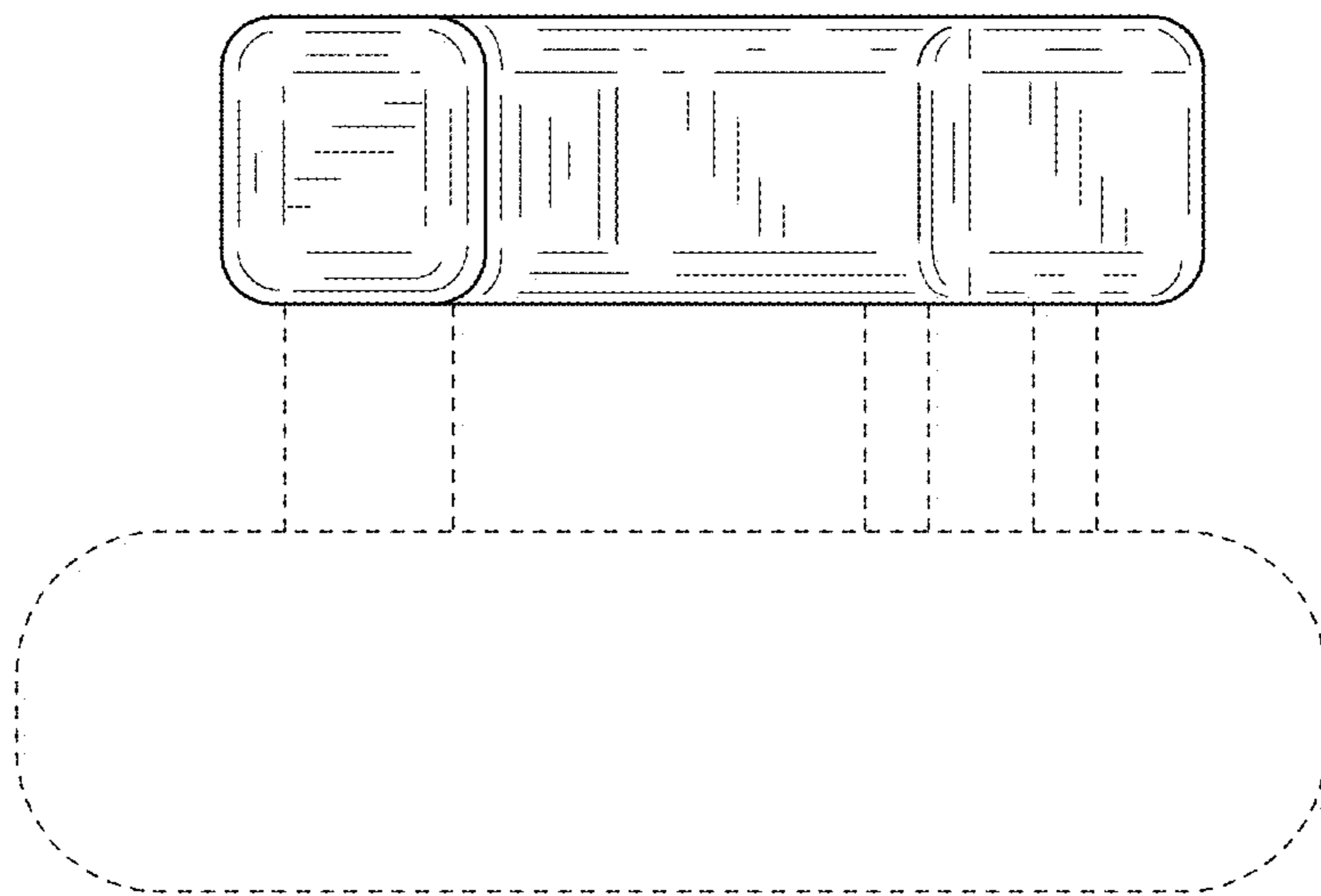


FIG. 143

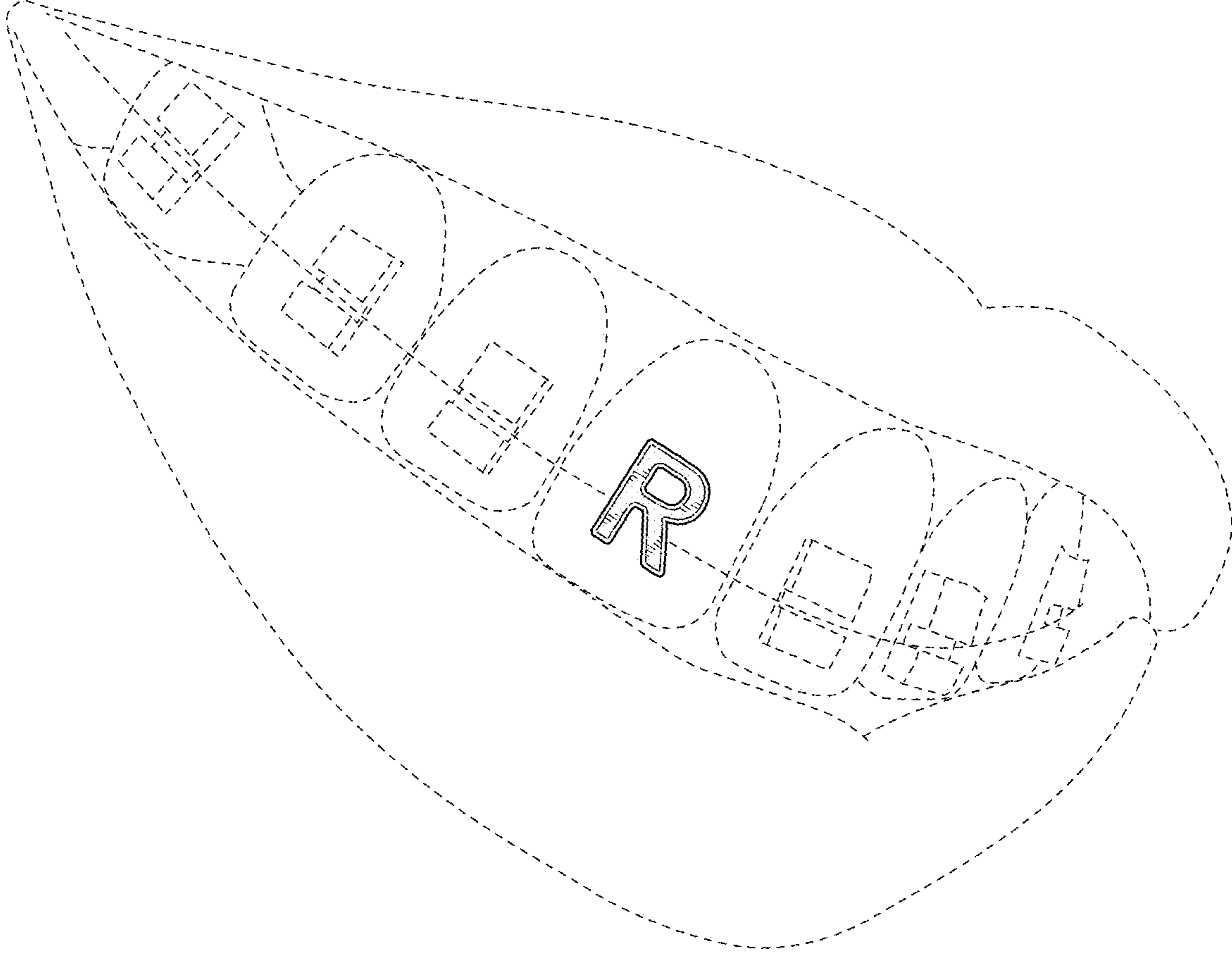


FIG. 144

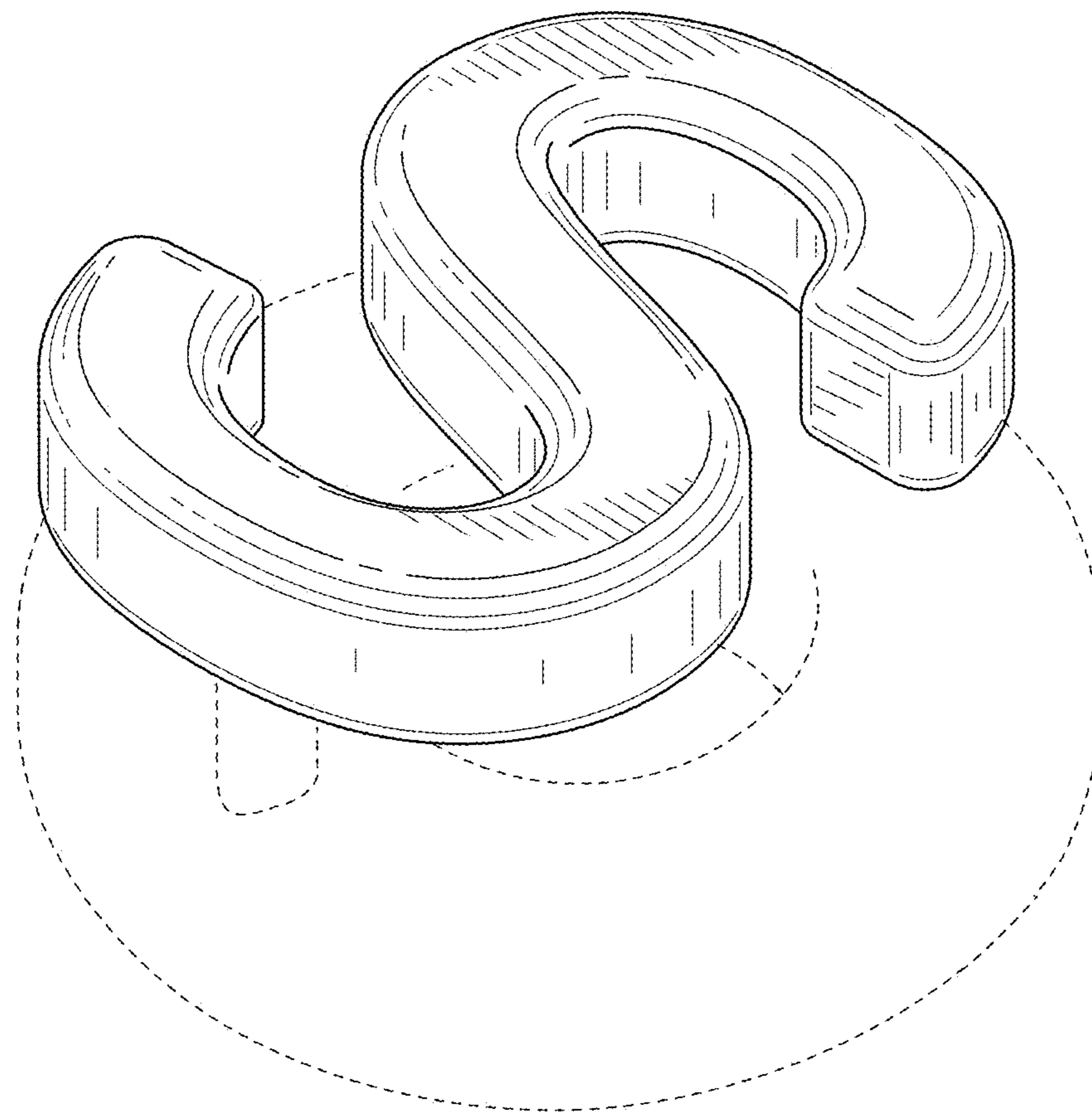


FIG. 145

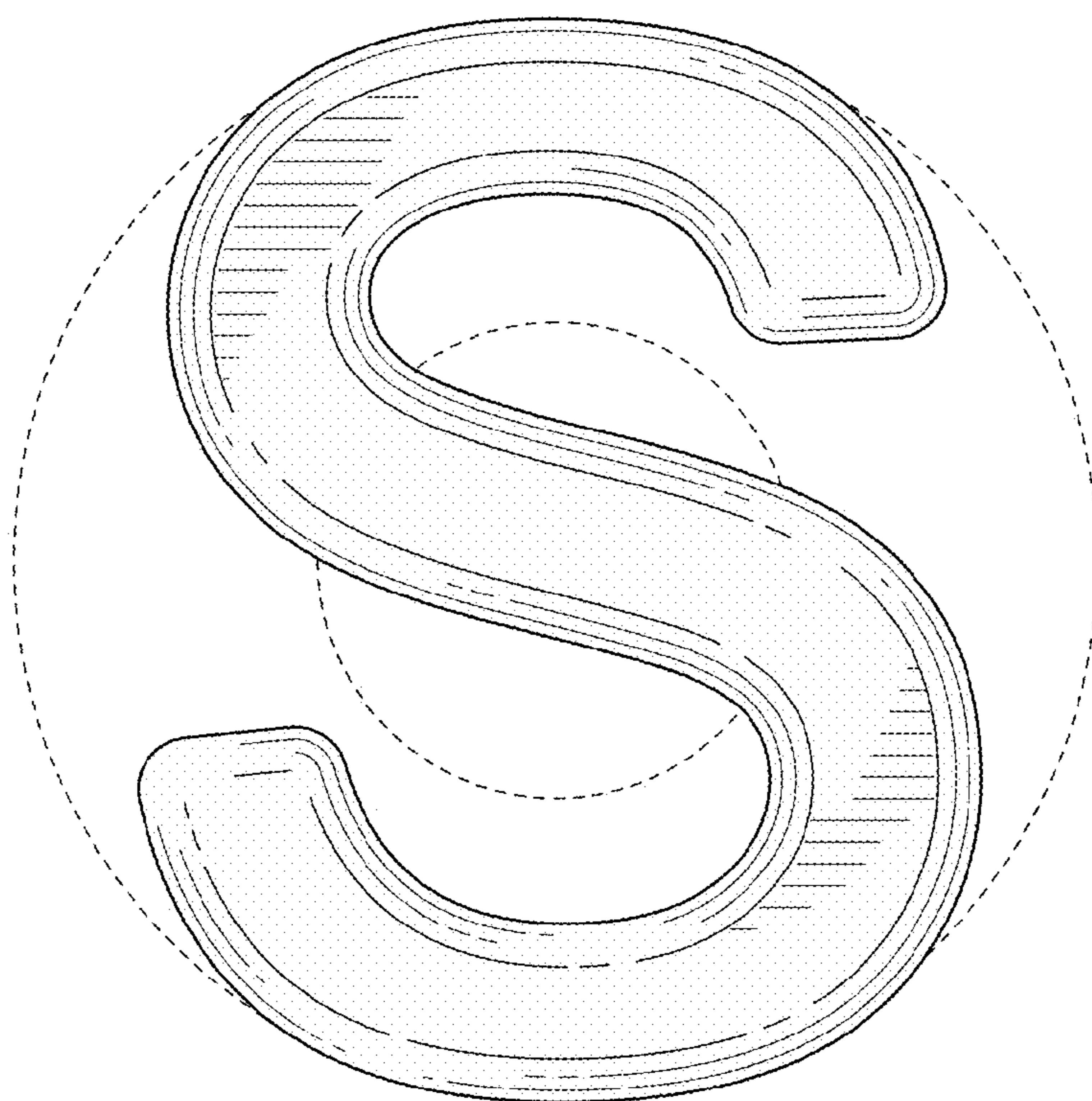


FIG. 146

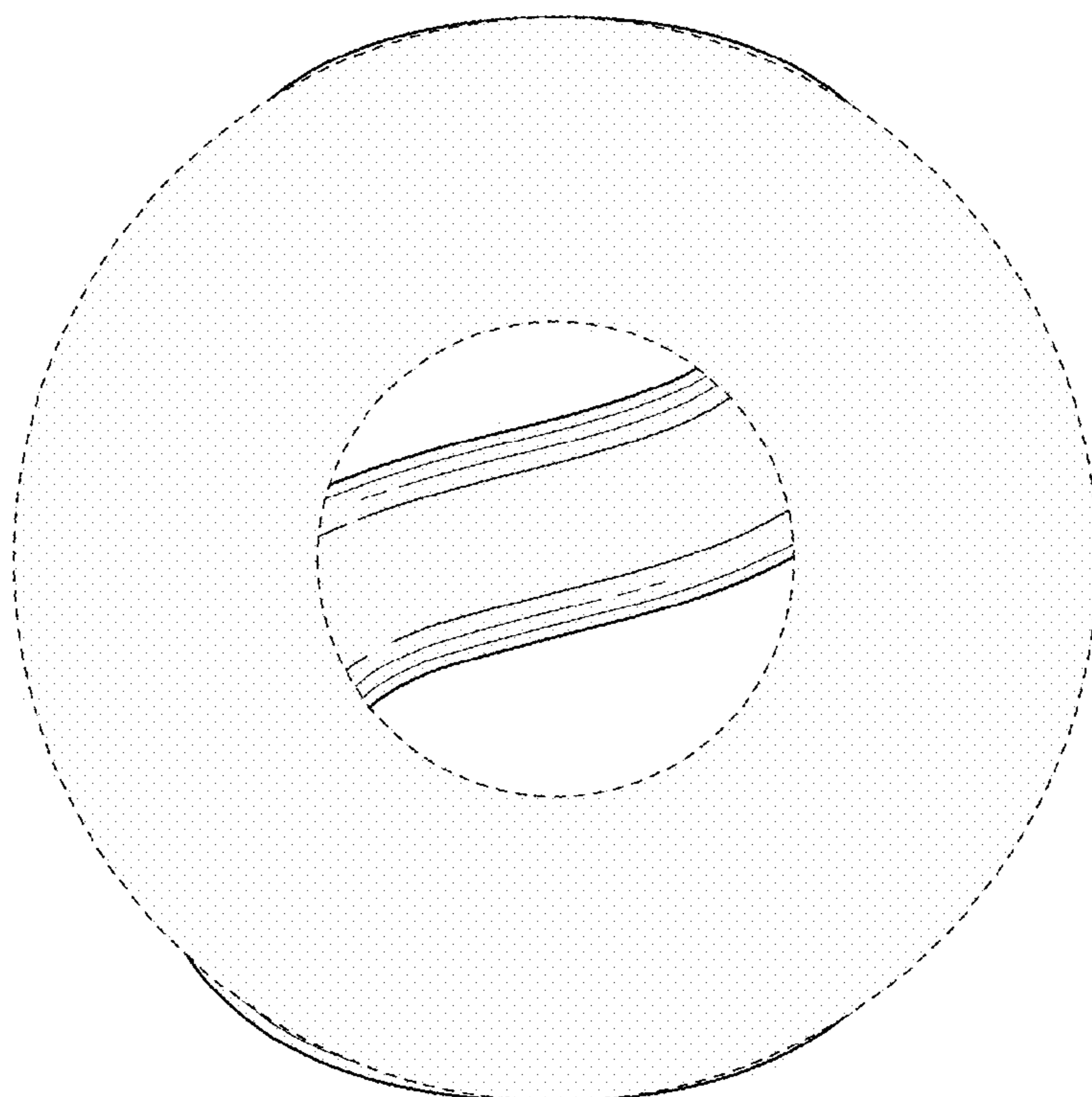


FIG. 147

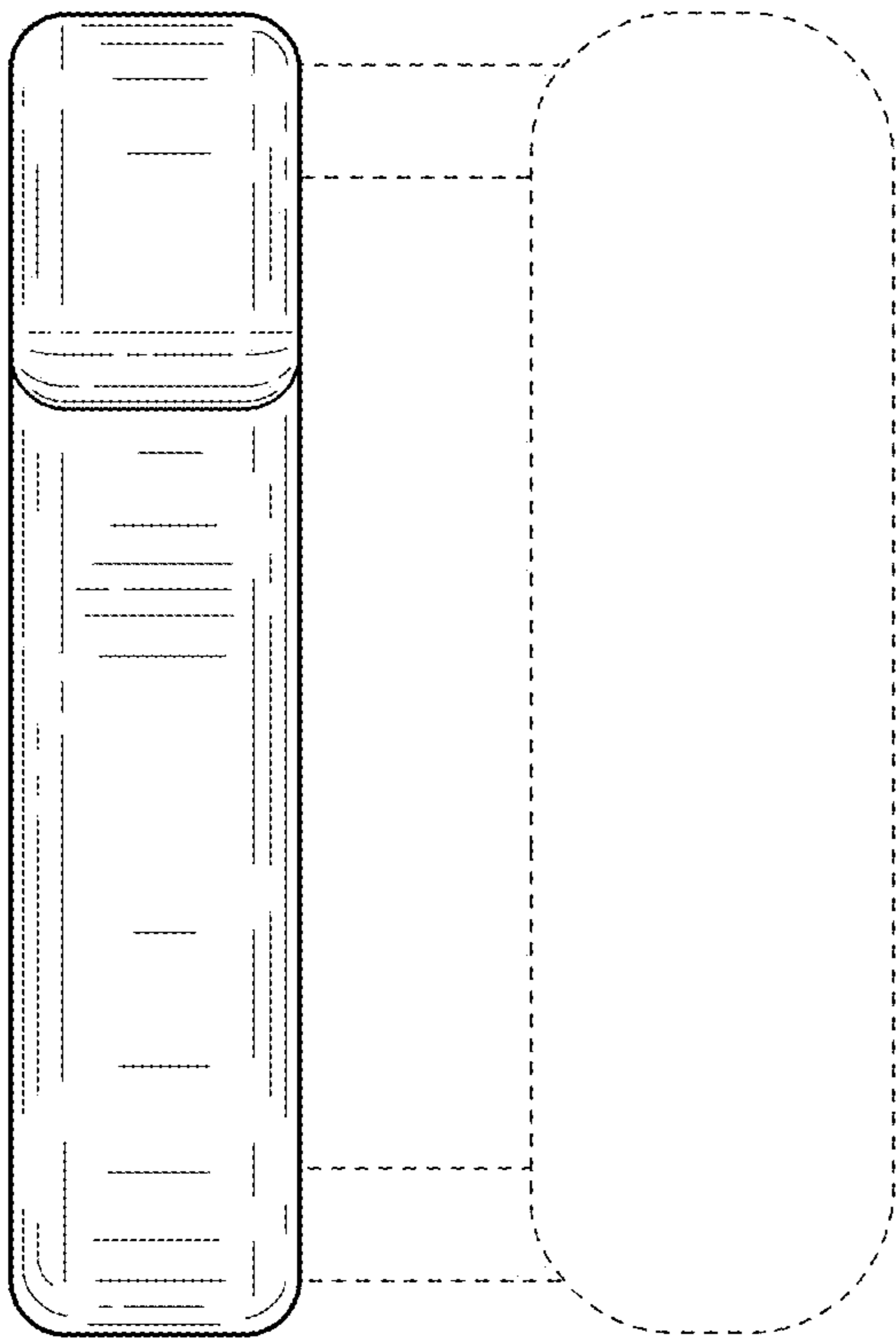


FIG. 148

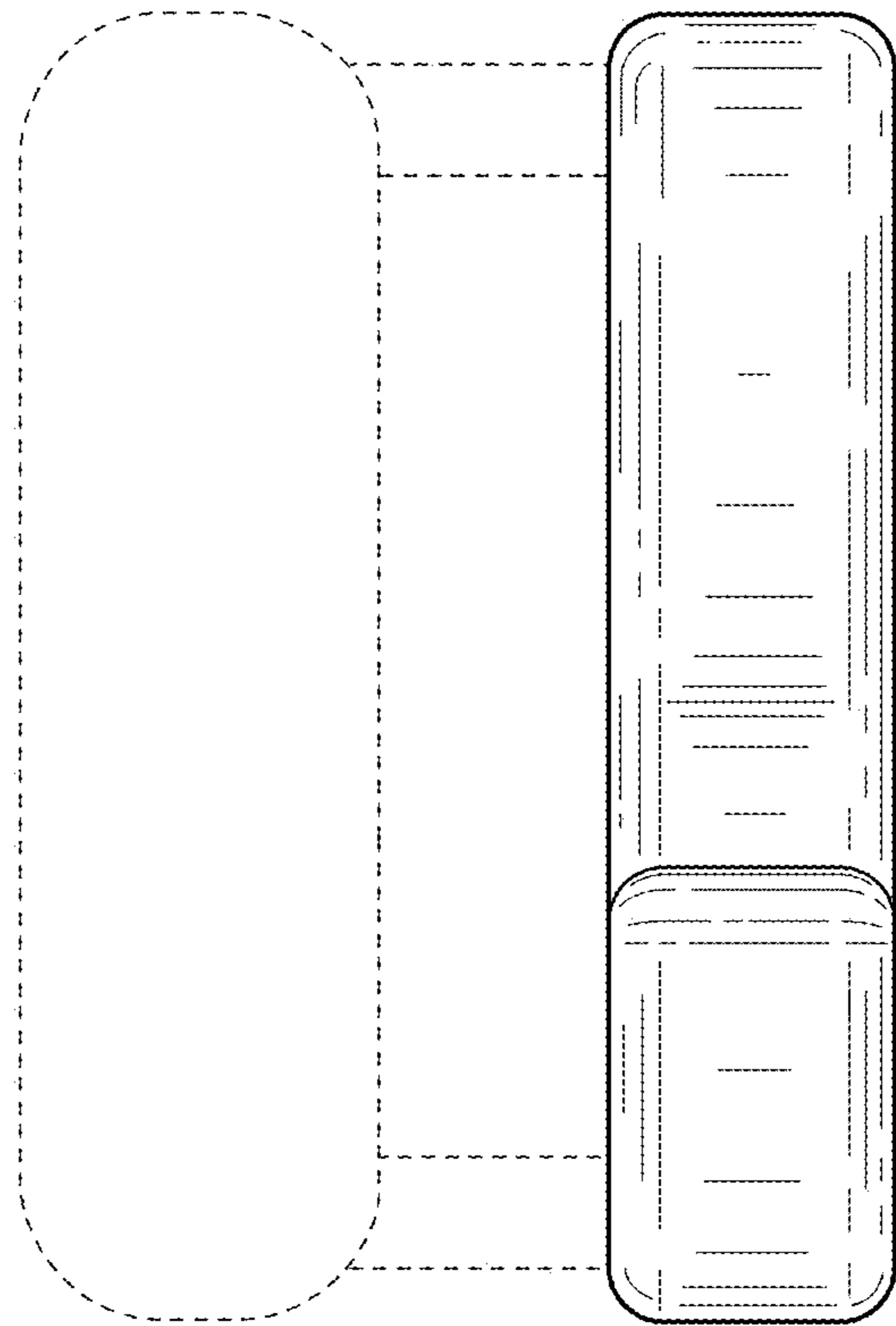


FIG. 149

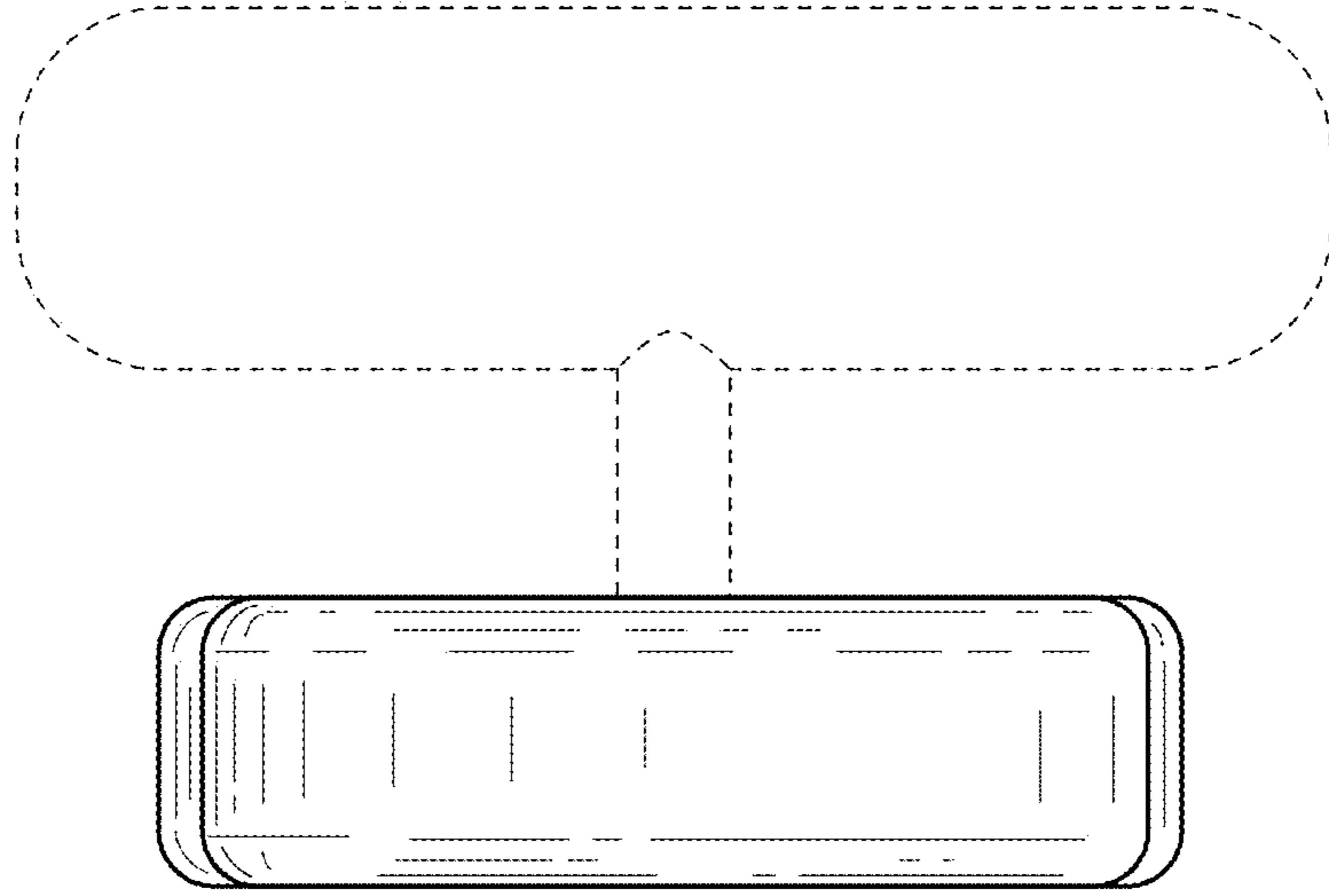


FIG. 150

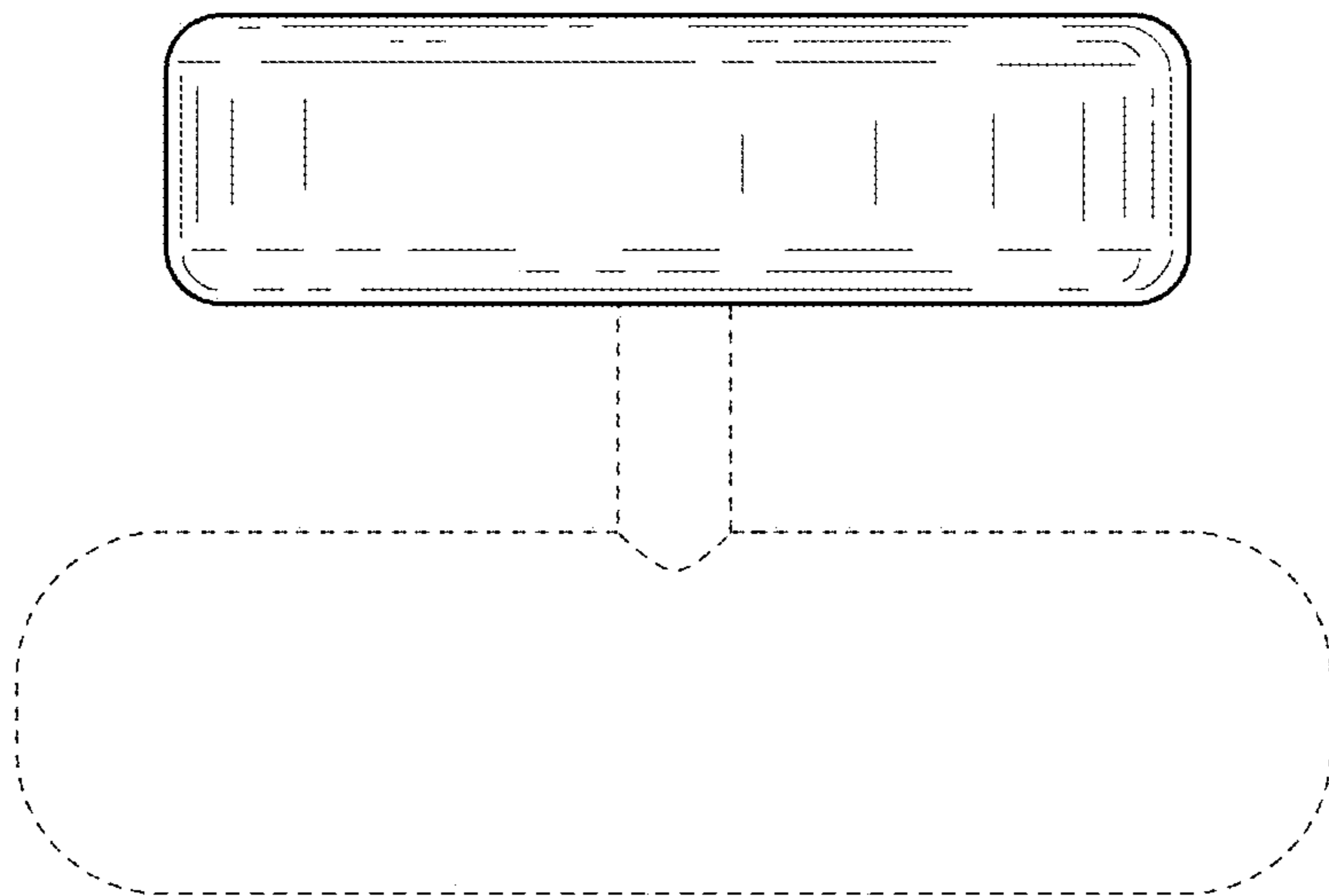


FIG. 151

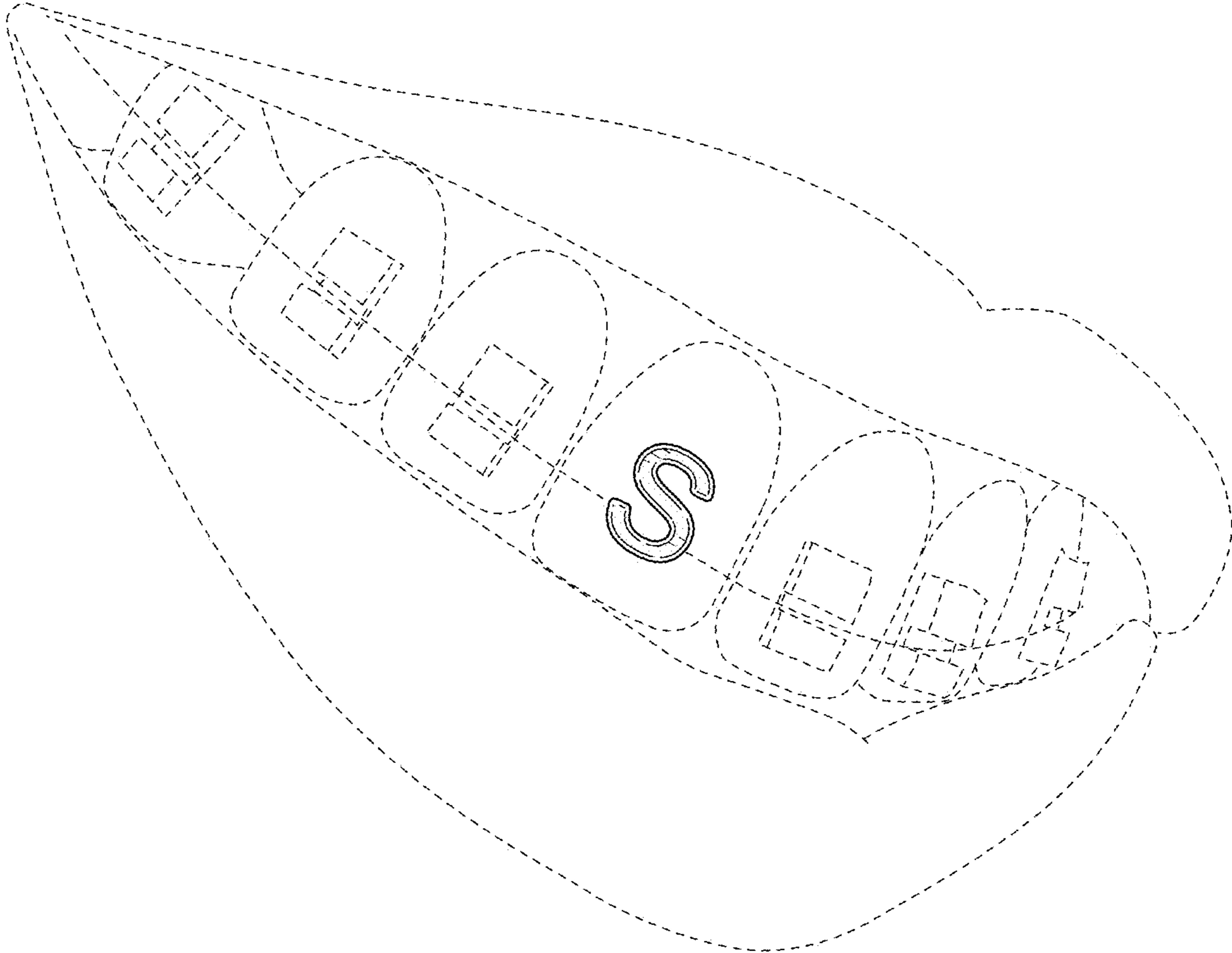


FIG. 152

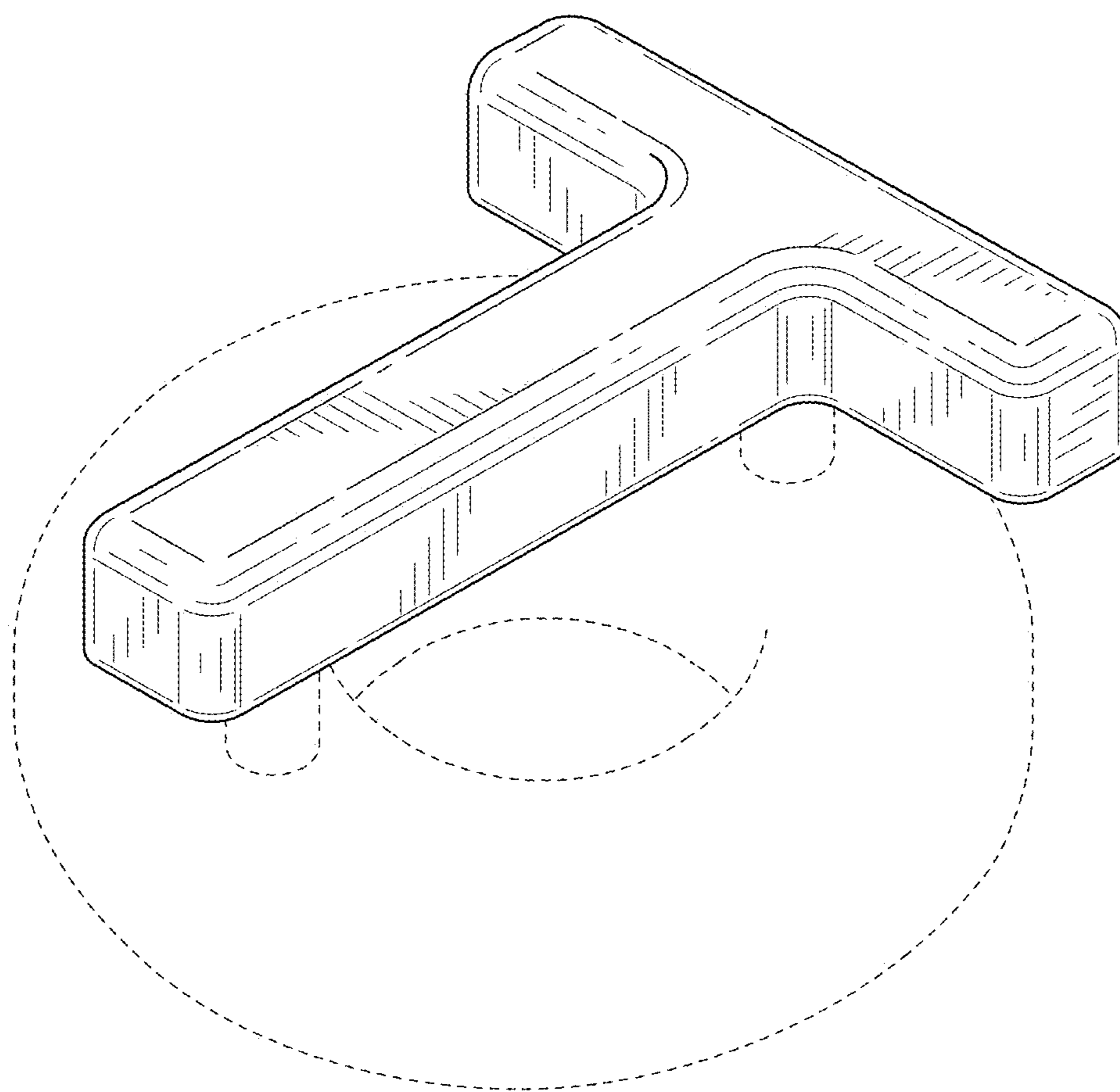


FIG. 153

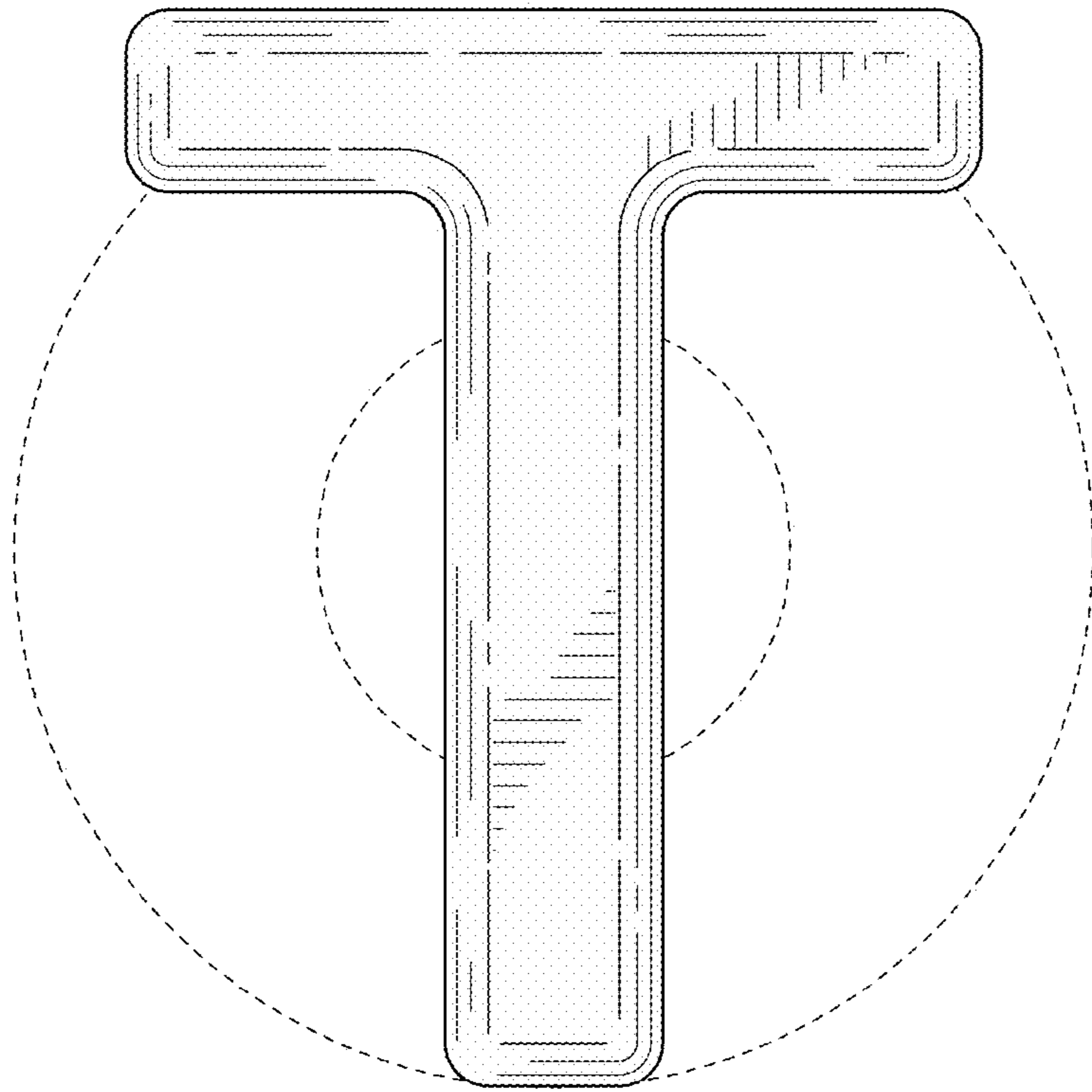


FIG. 154

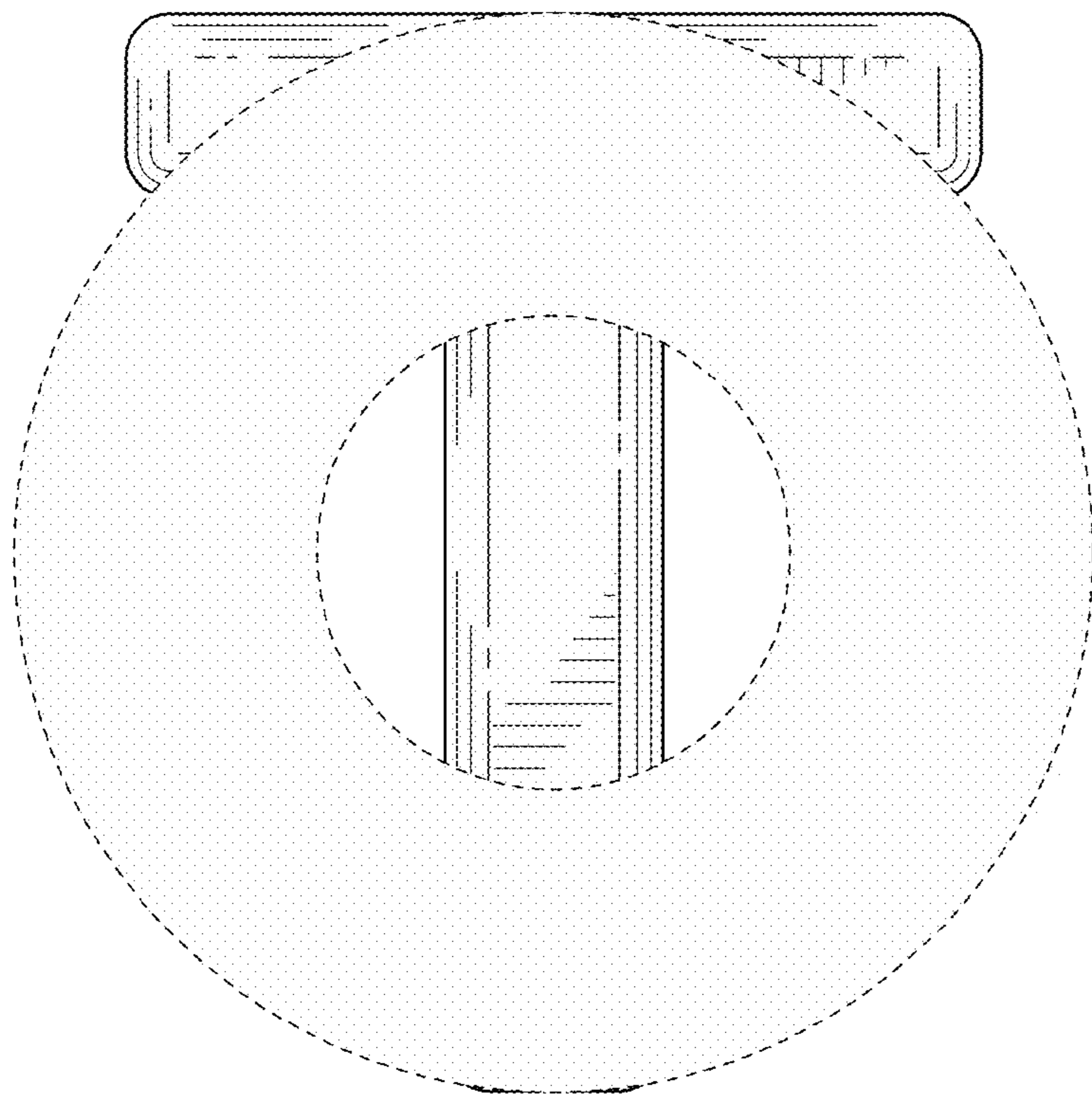


FIG. 155

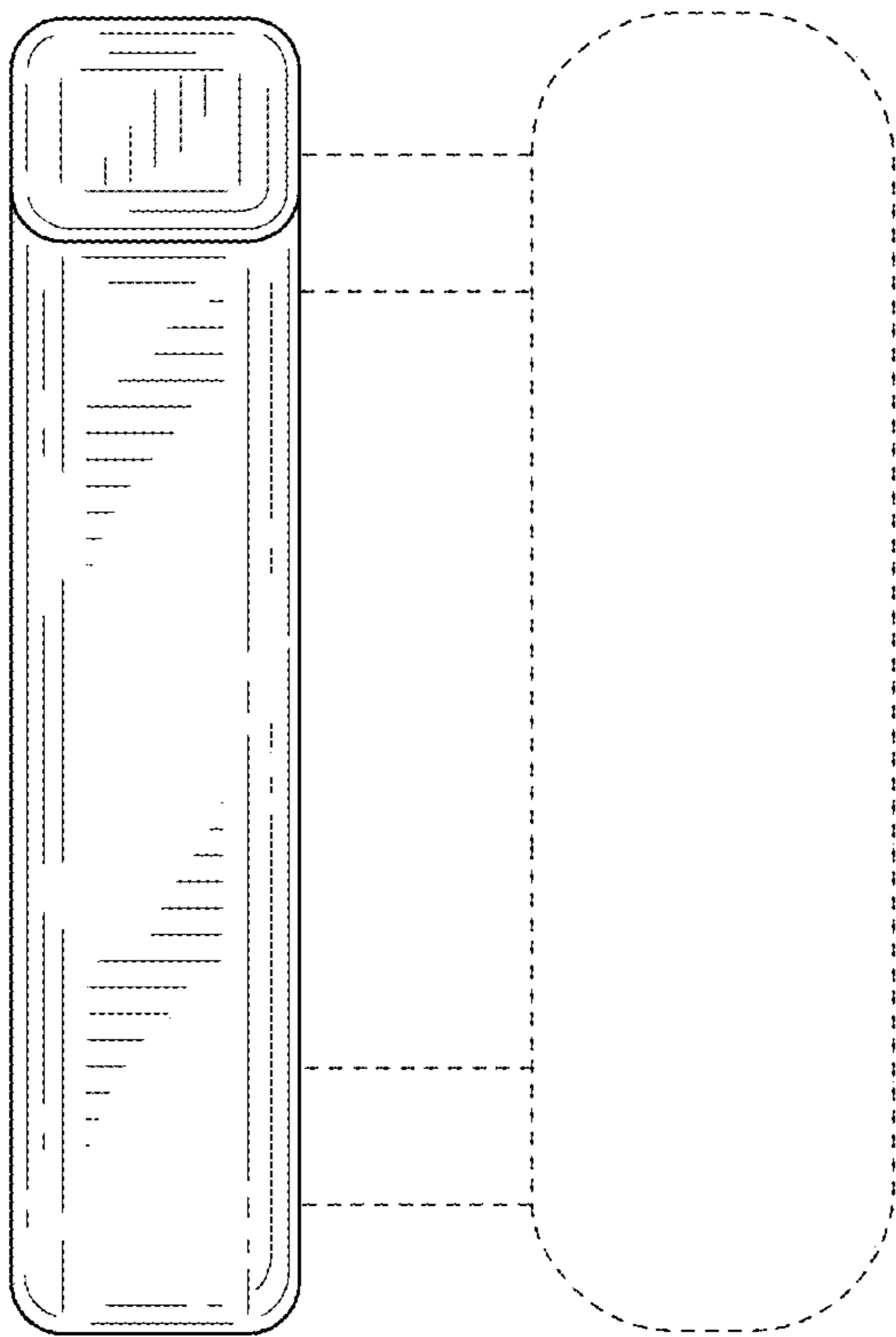


FIG. 156

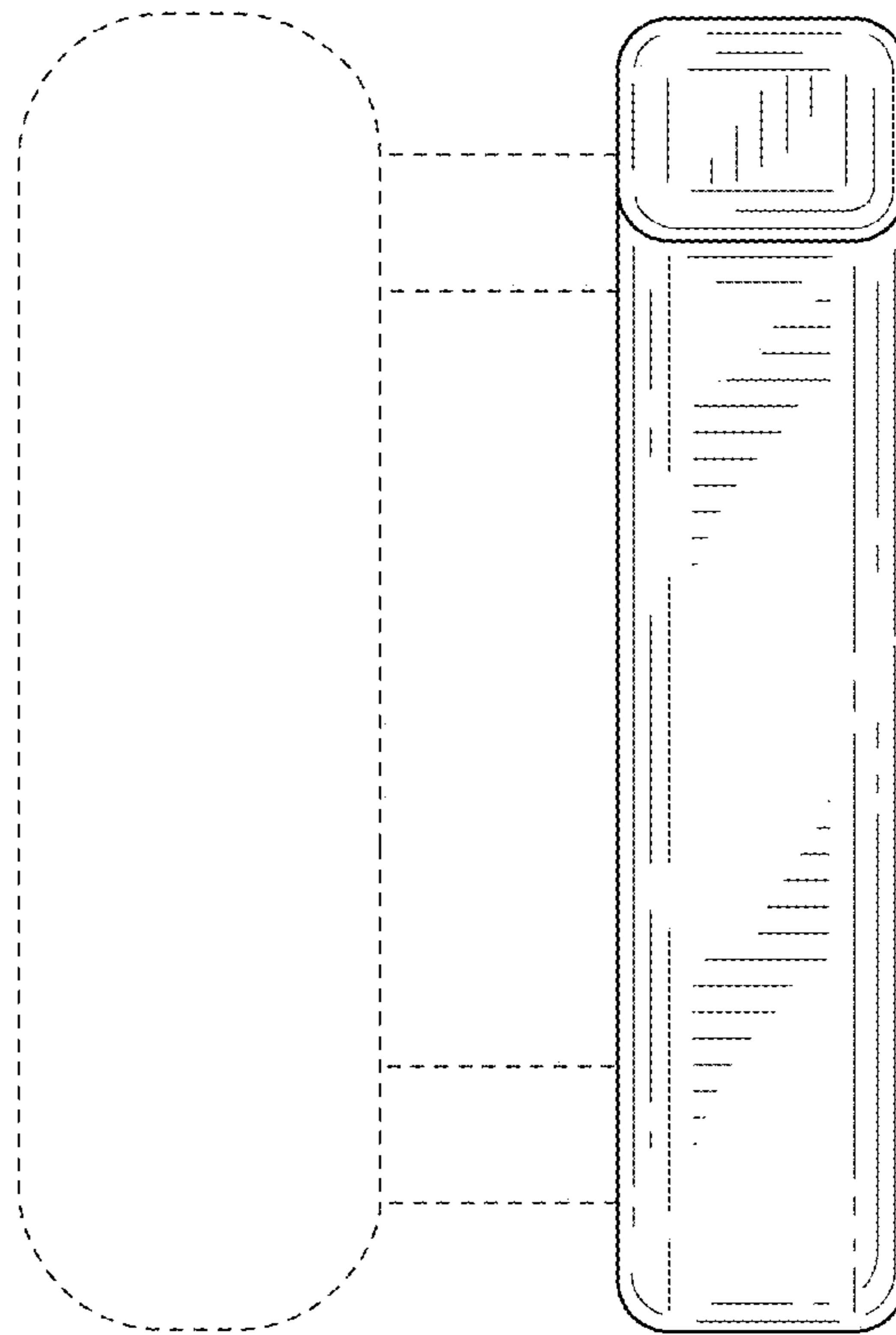


FIG. 157

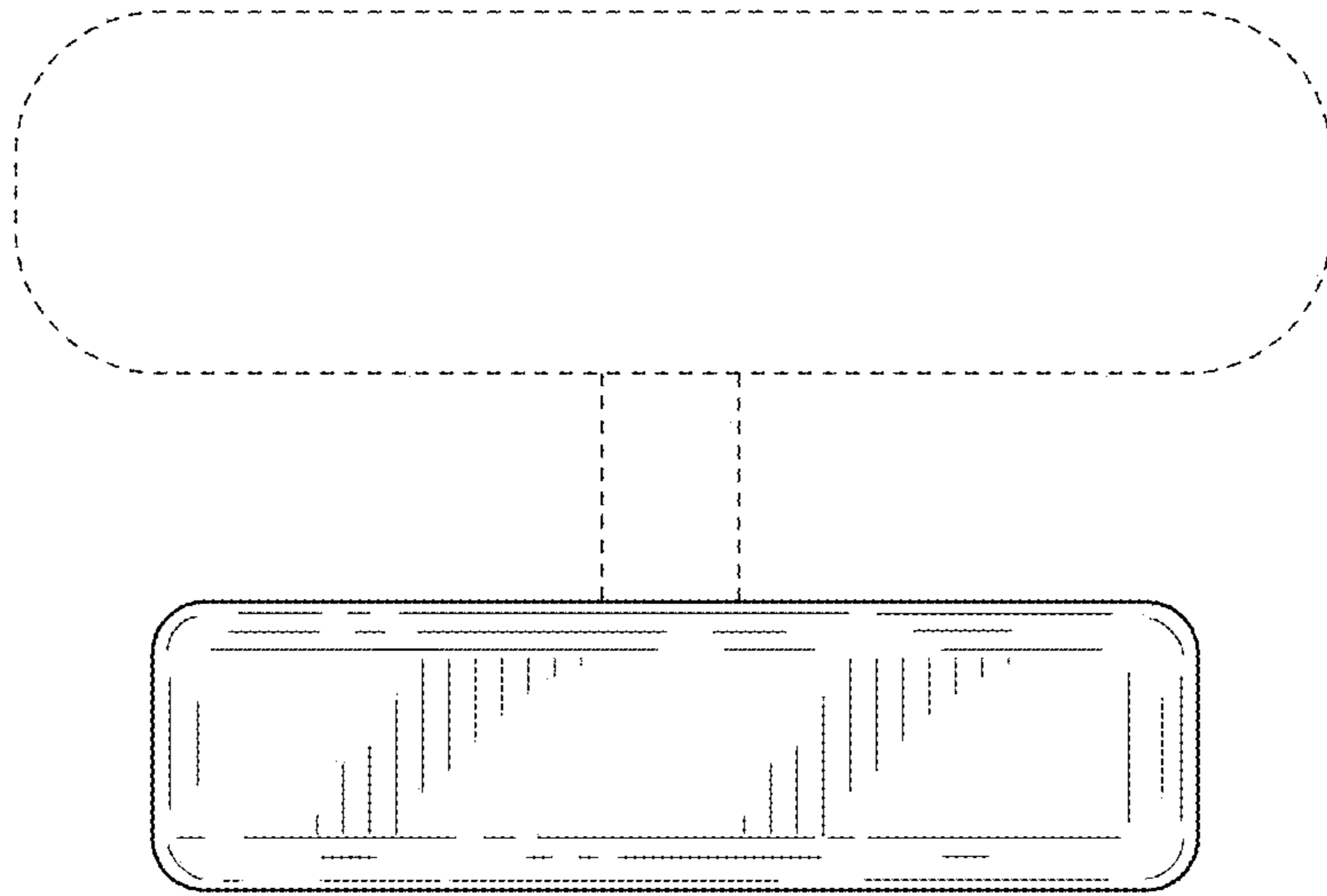


FIG. 158

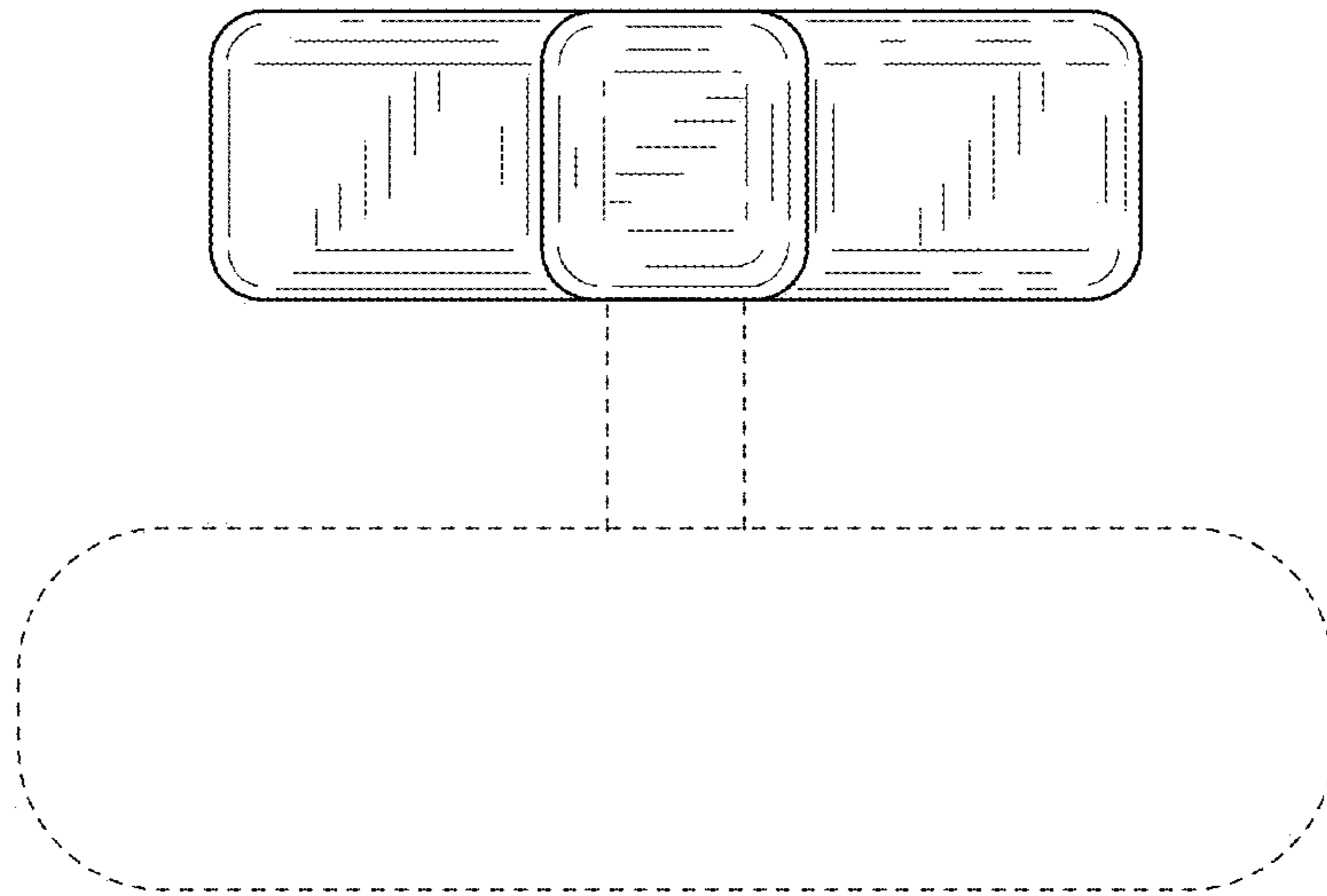


FIG. 159

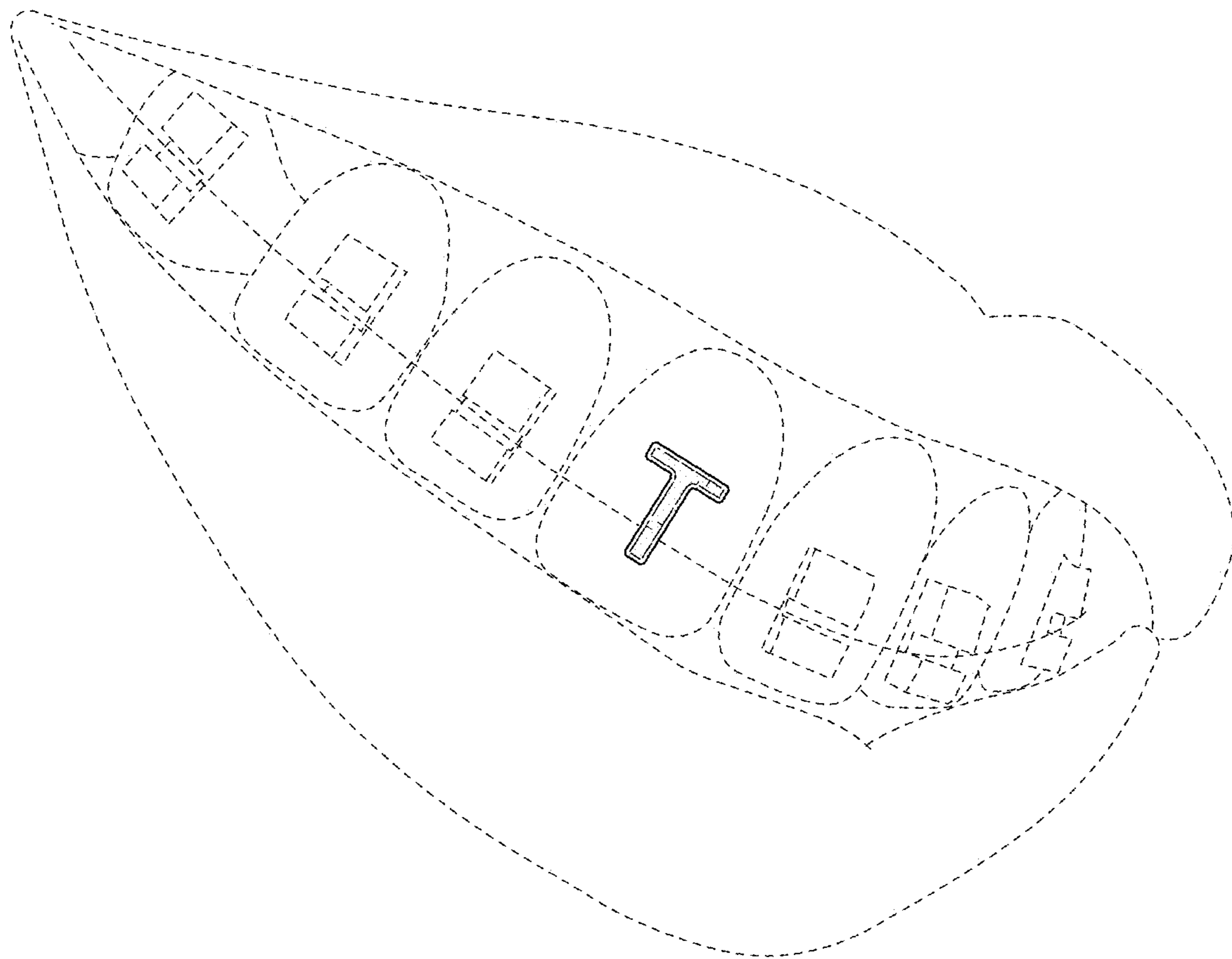


FIG. 160

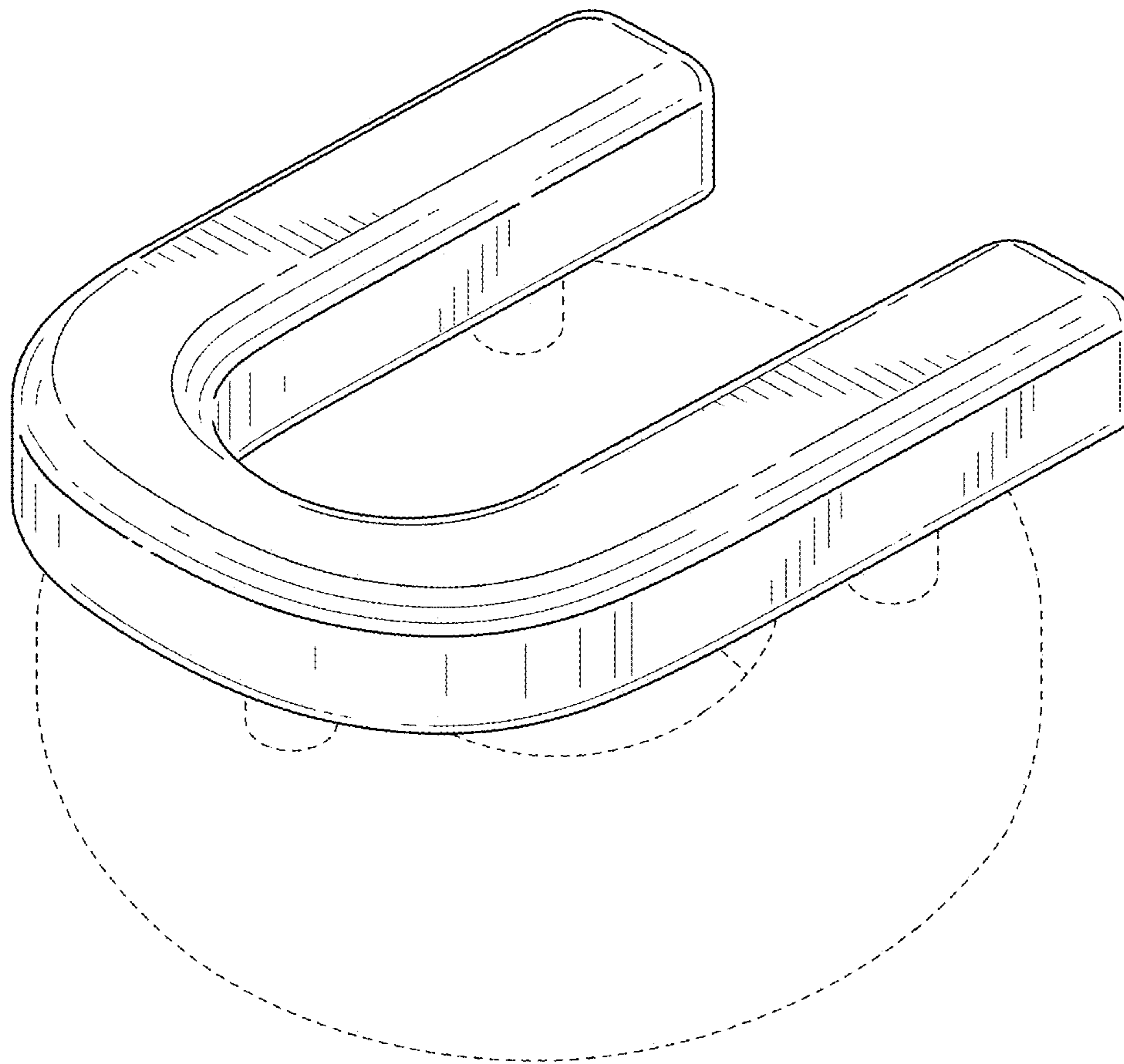


FIG. 161

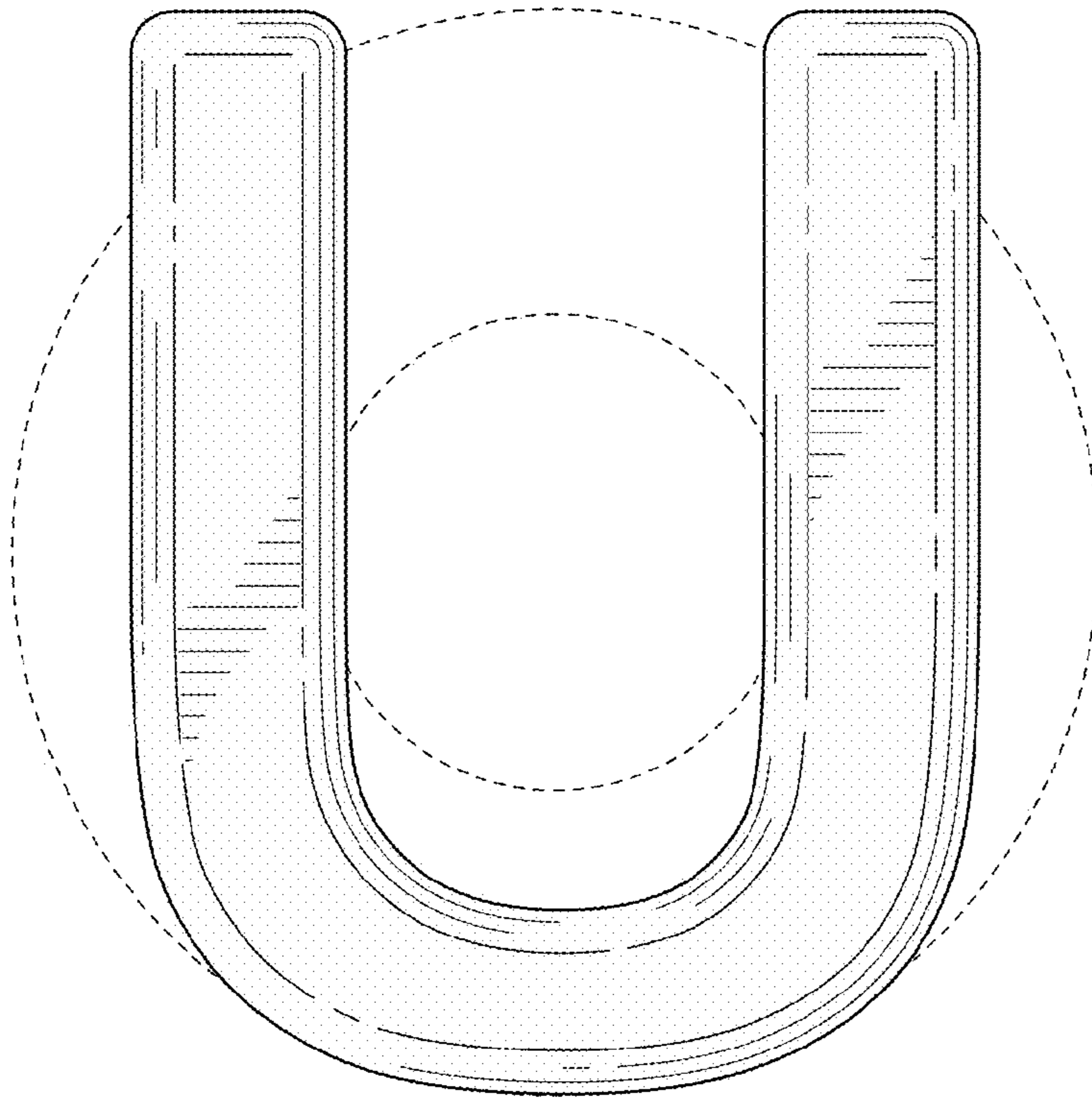


FIG. 162

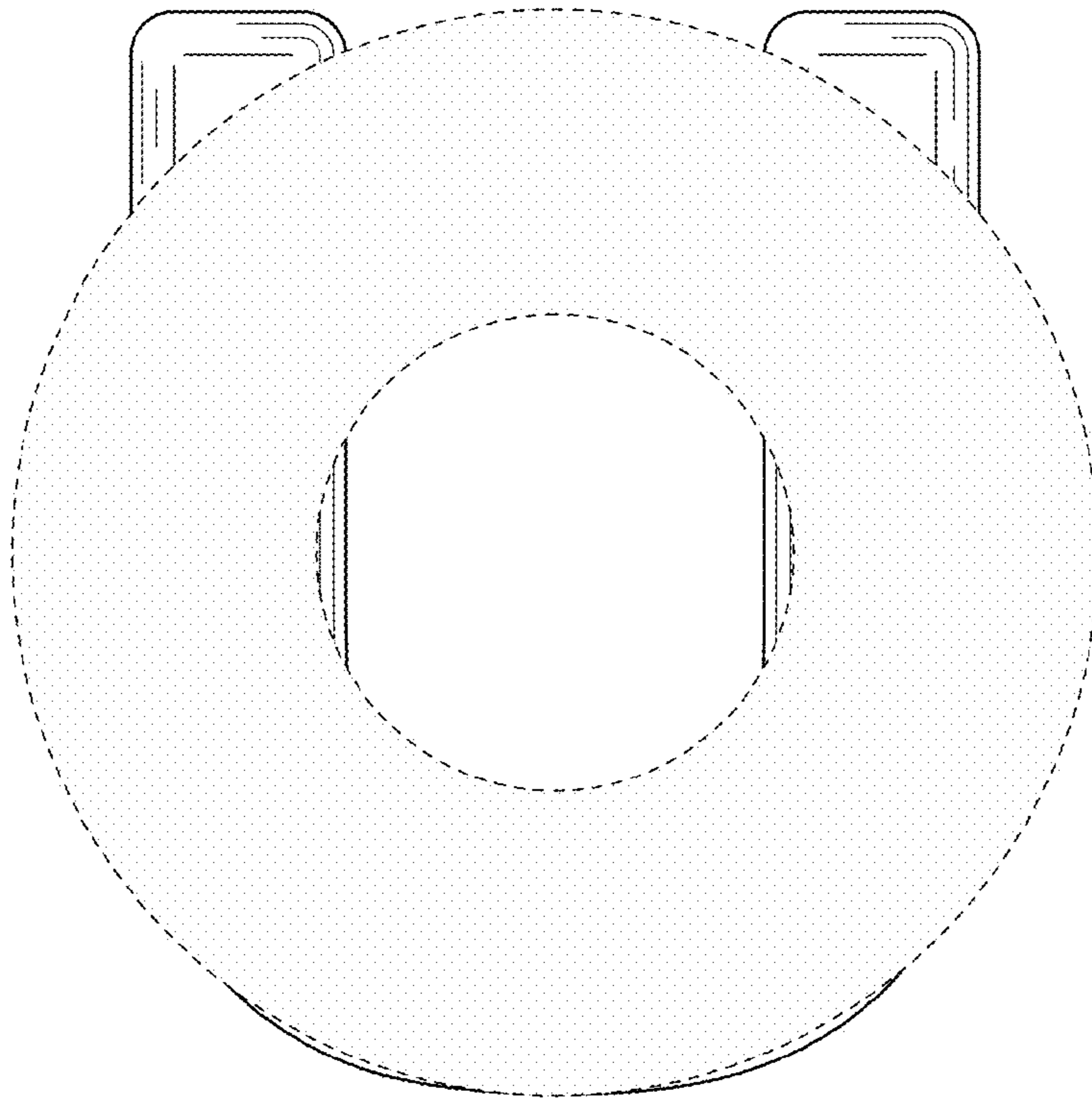


FIG. 163

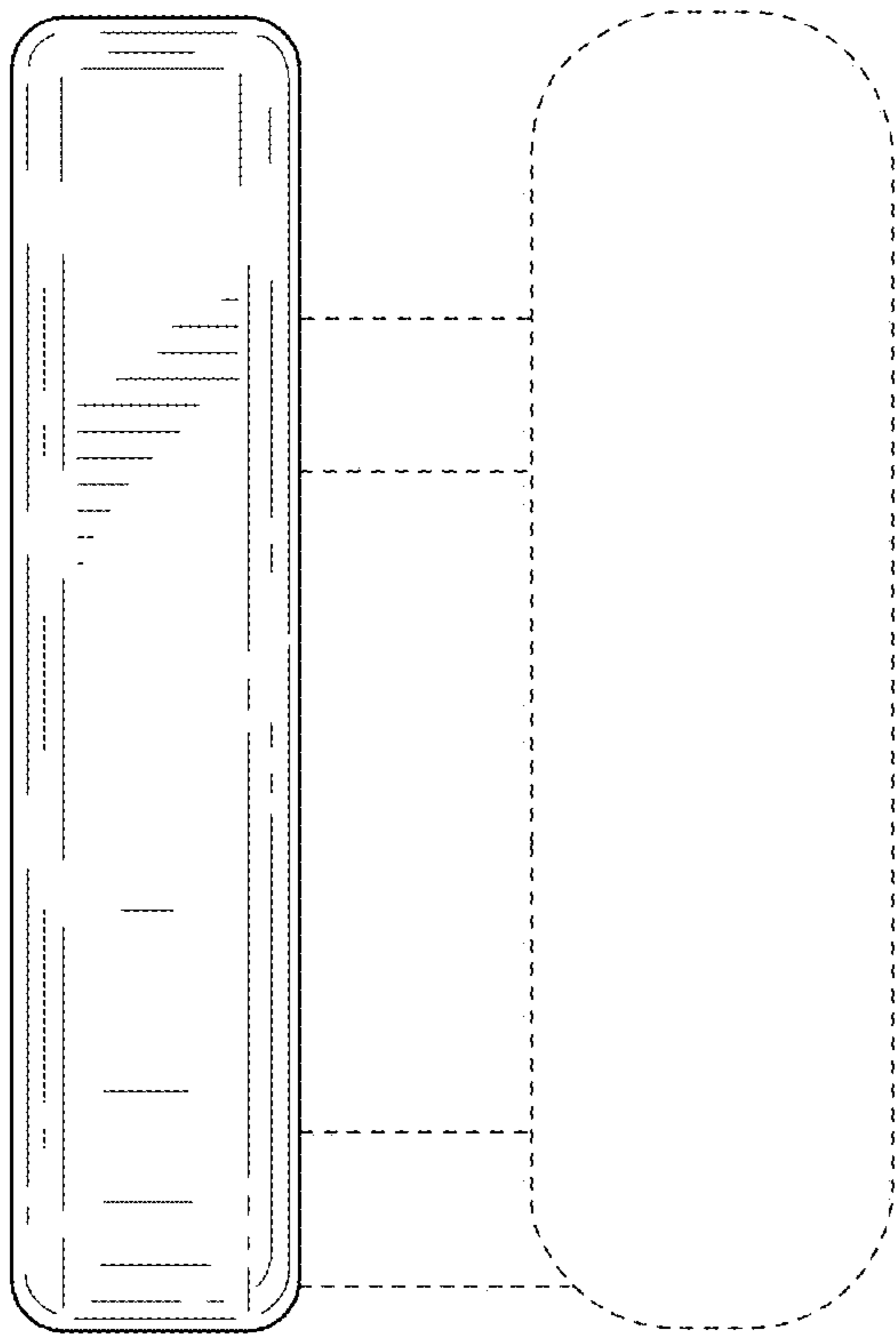


FIG. 164

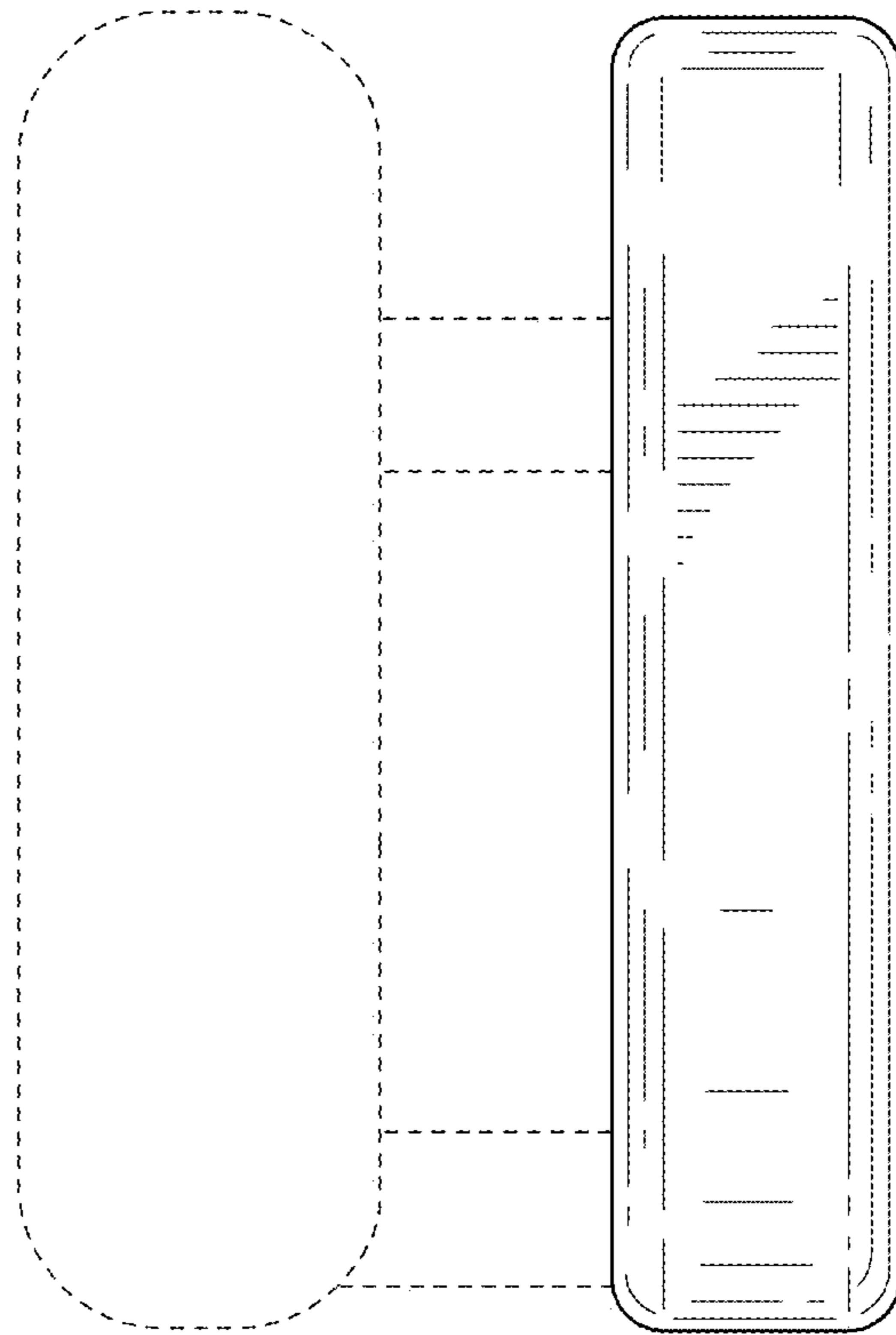


FIG. 165

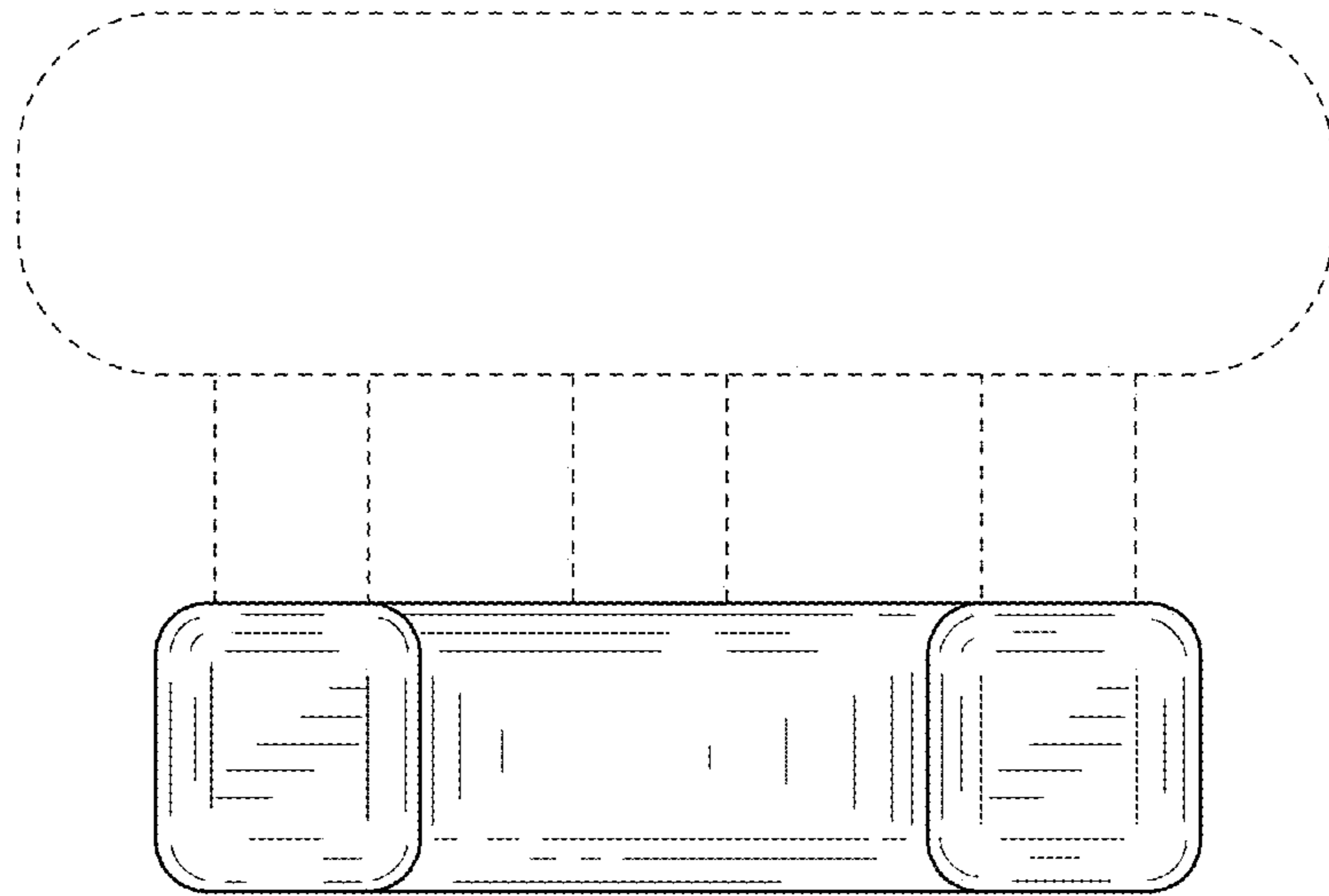


FIG. 166

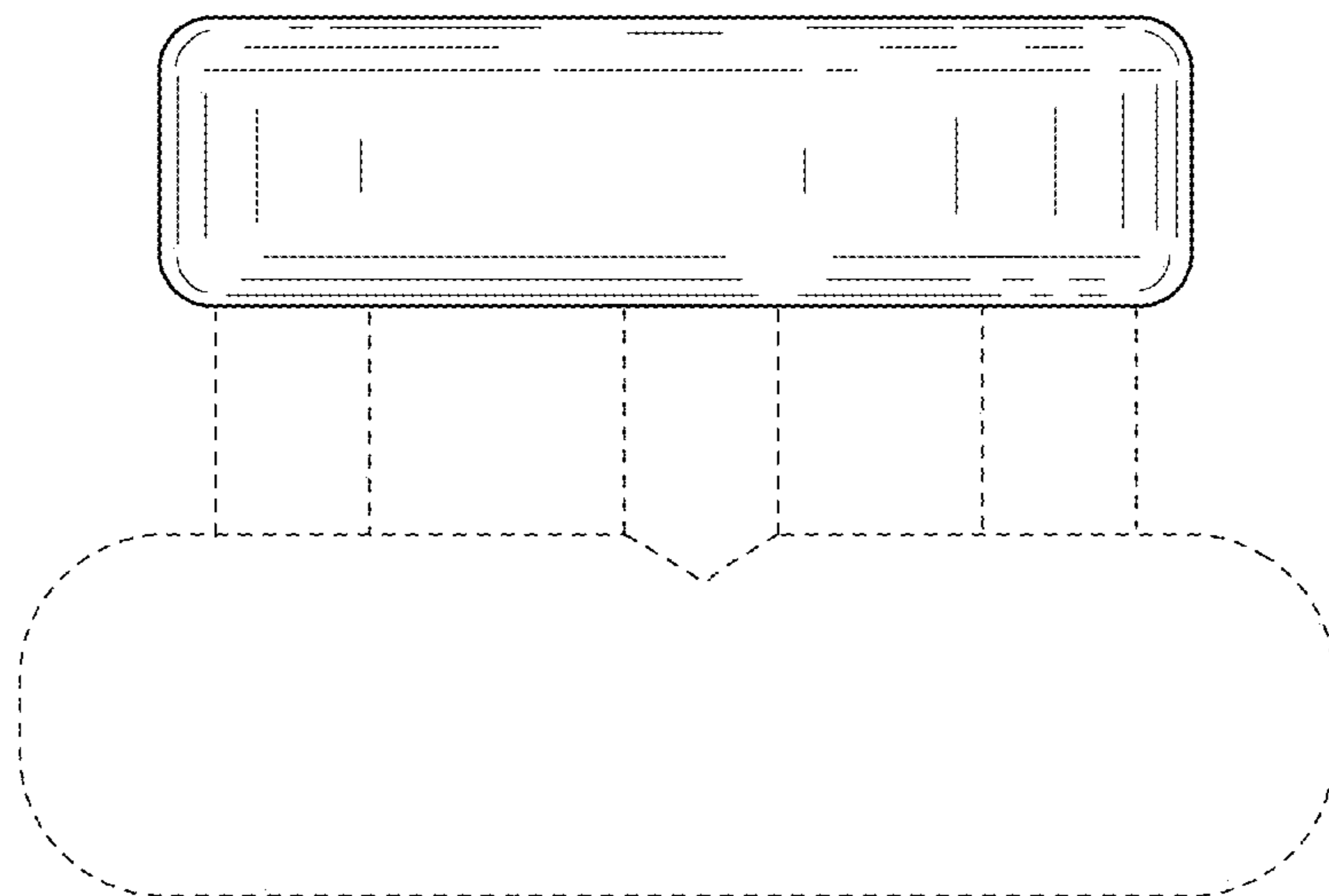


FIG. 167

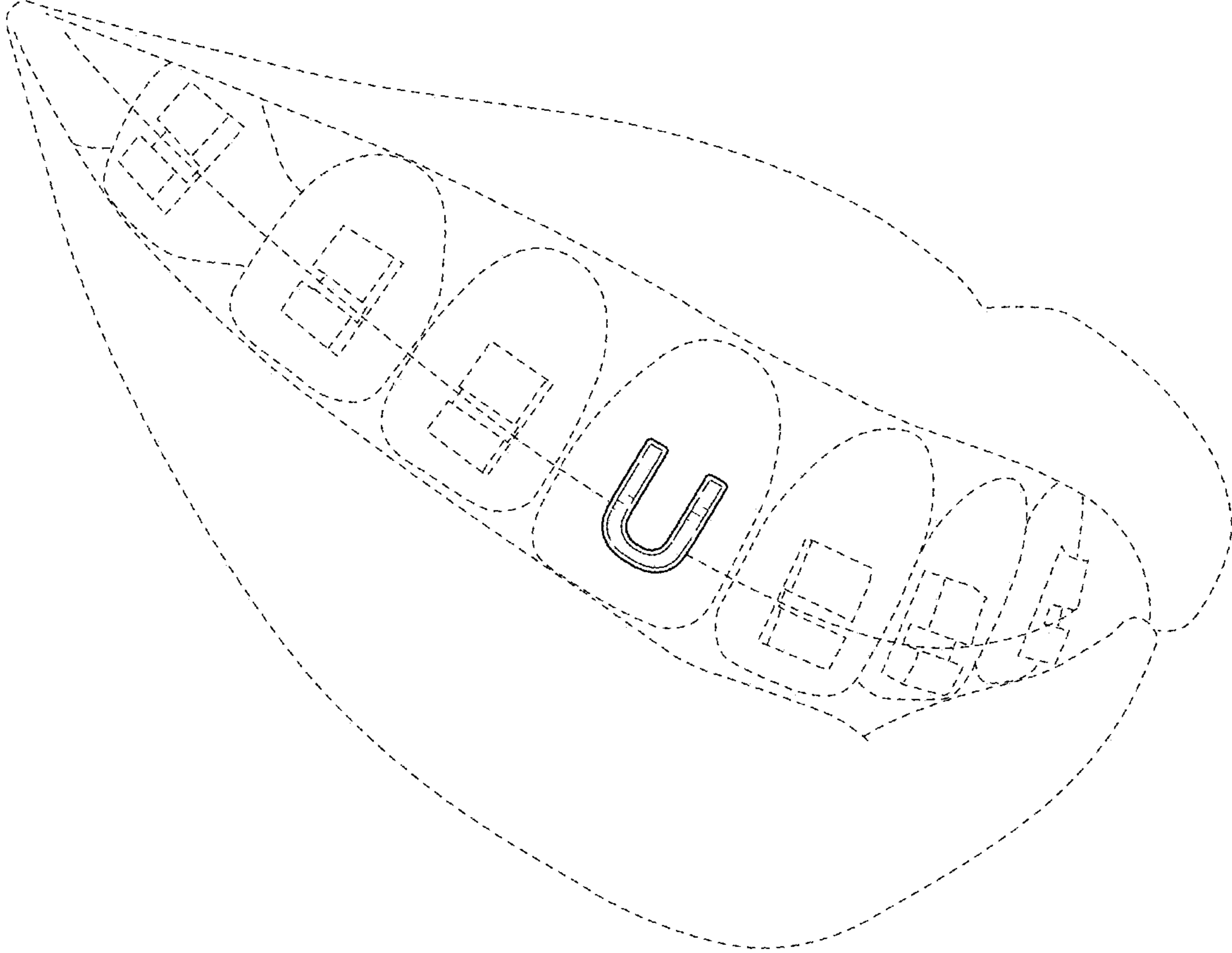


FIG. 168

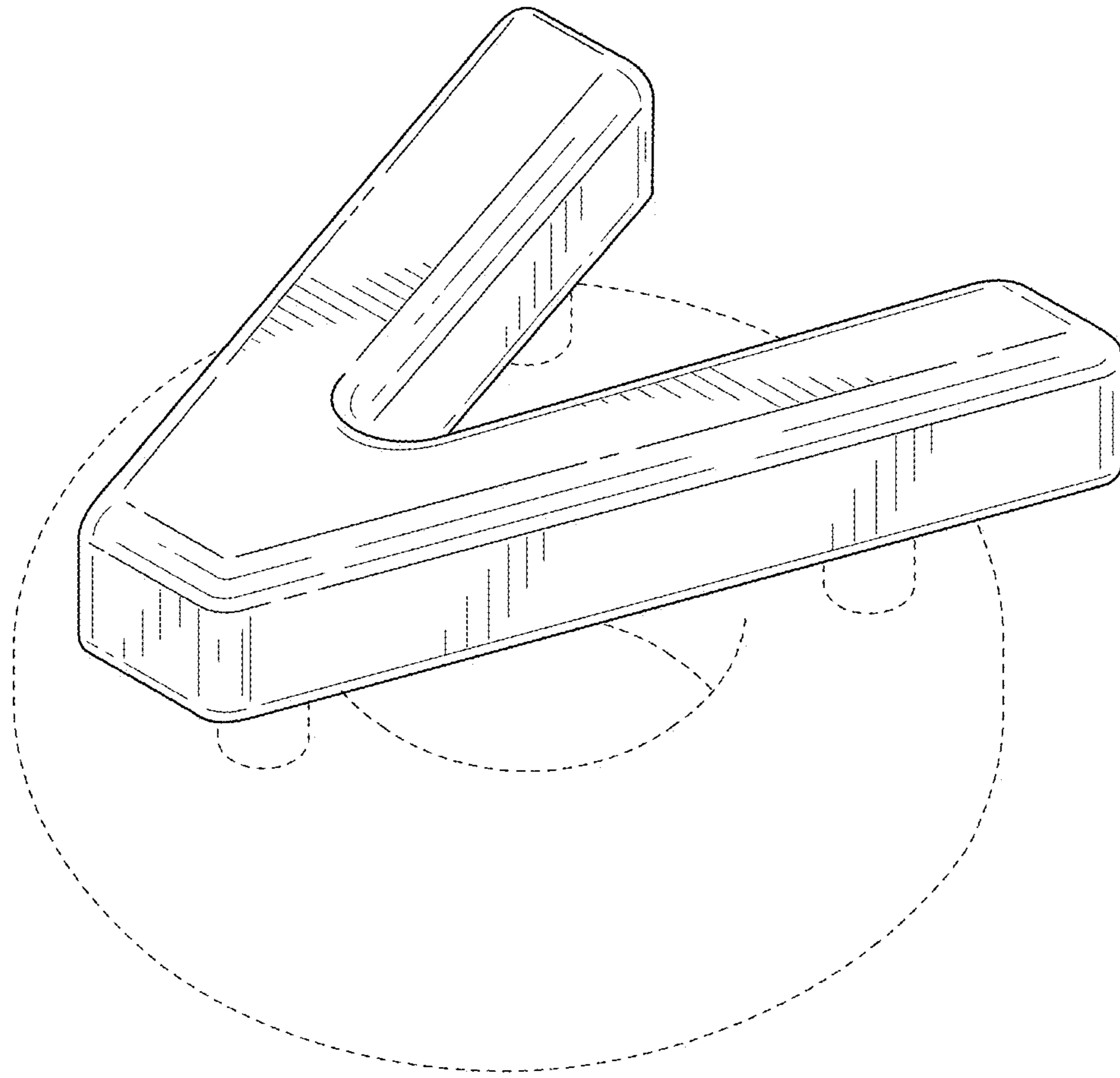


FIG. 169



FIG. 170

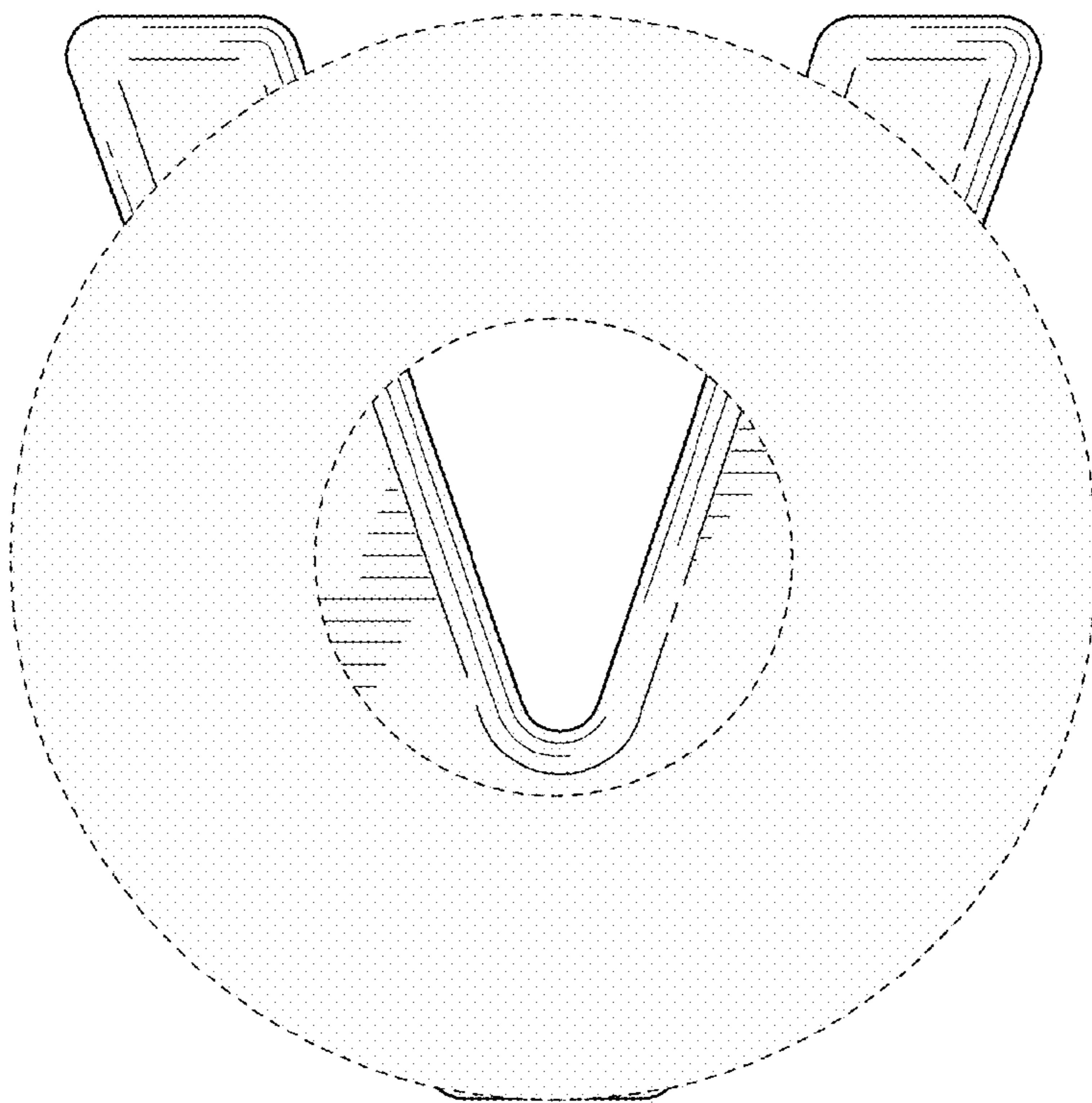


FIG. 171

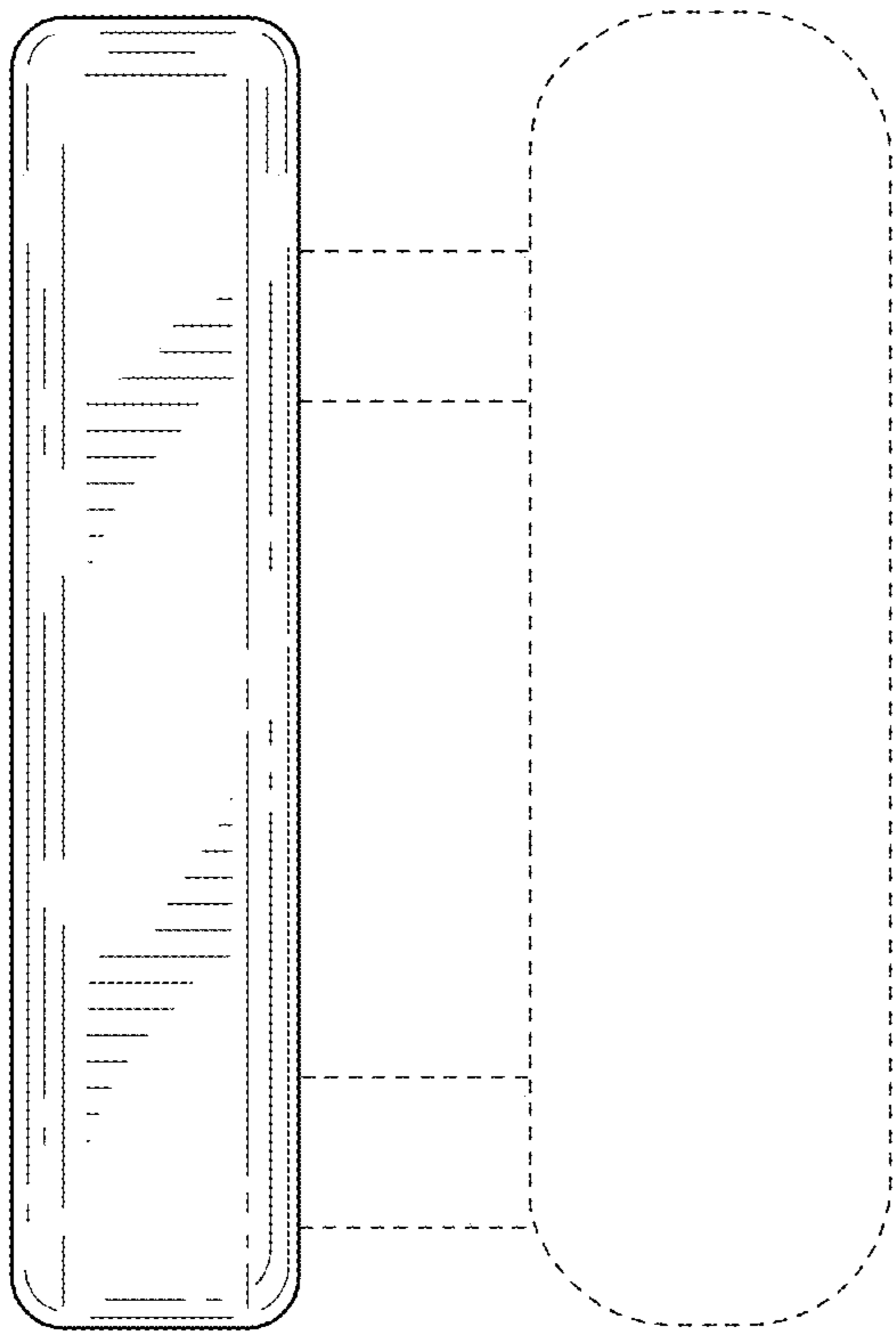


FIG. 172

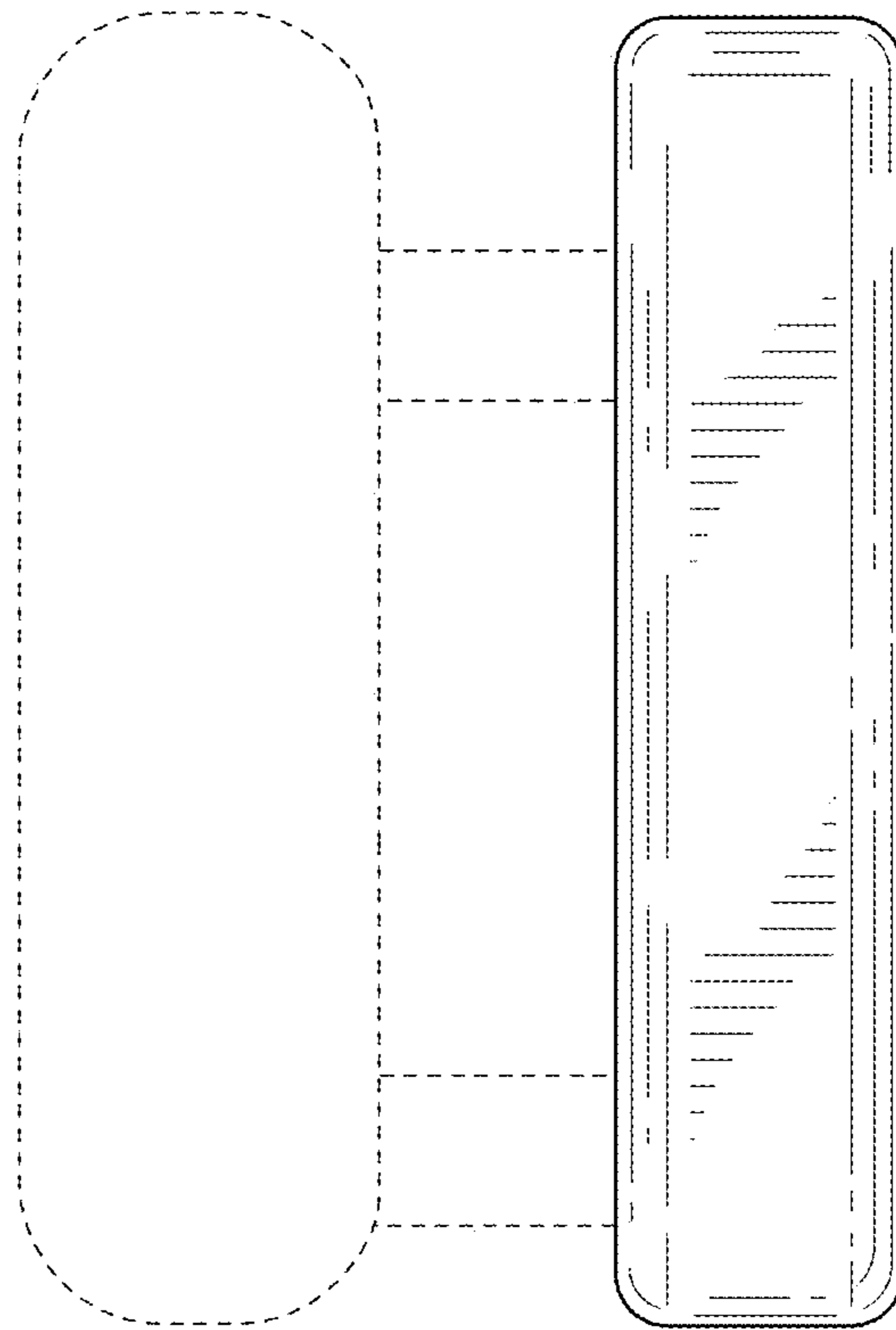


FIG. 173

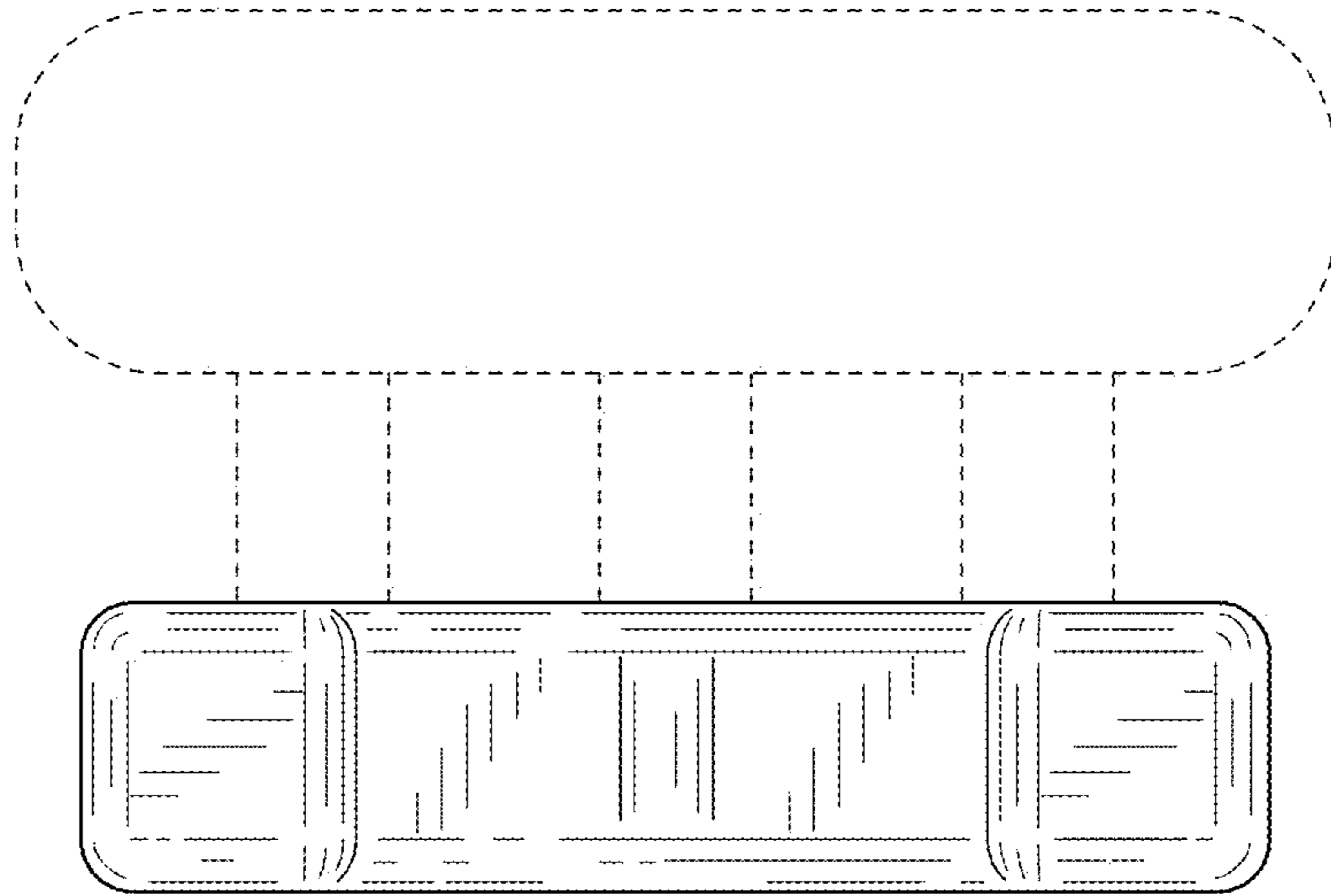


FIG. 174

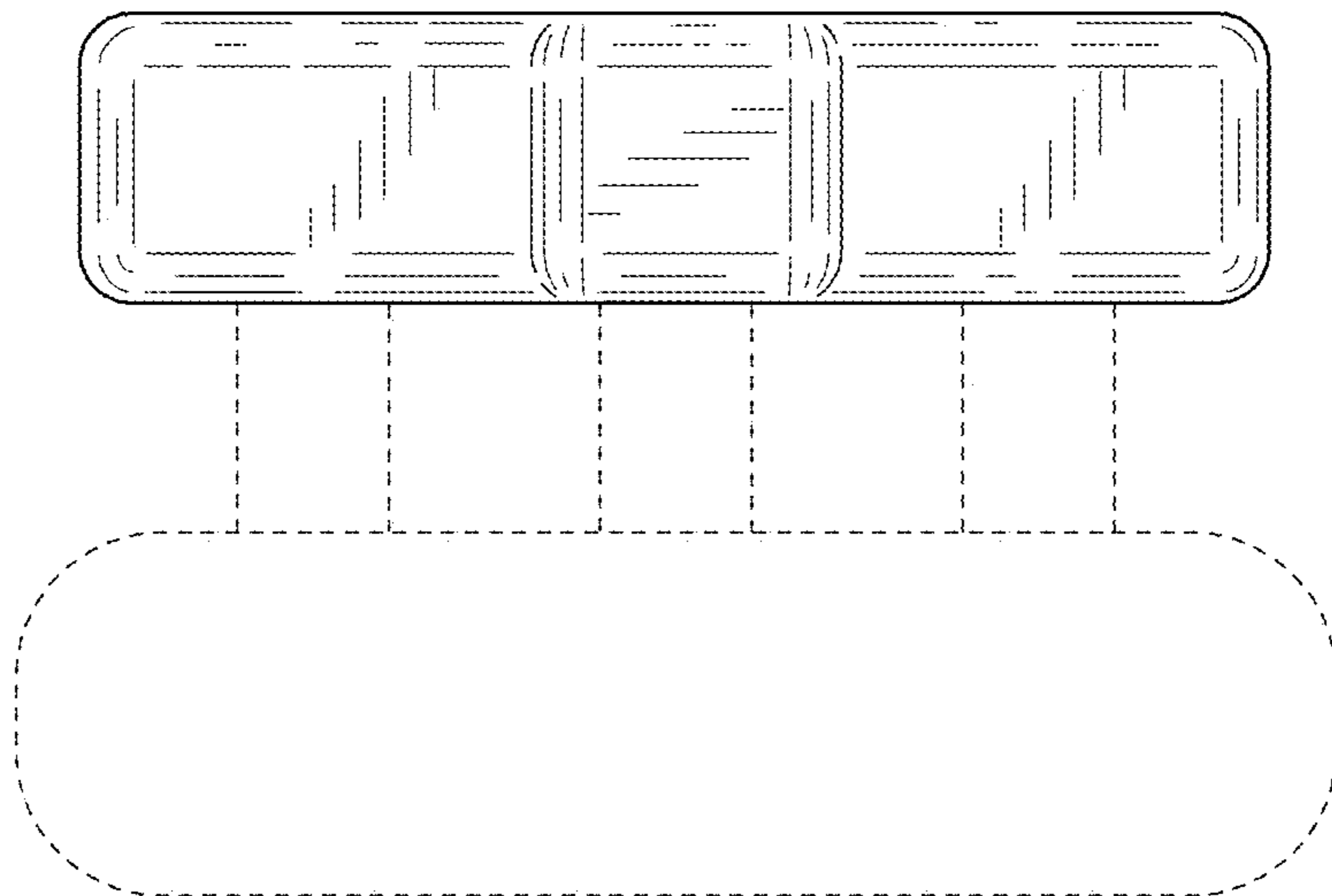


FIG. 175

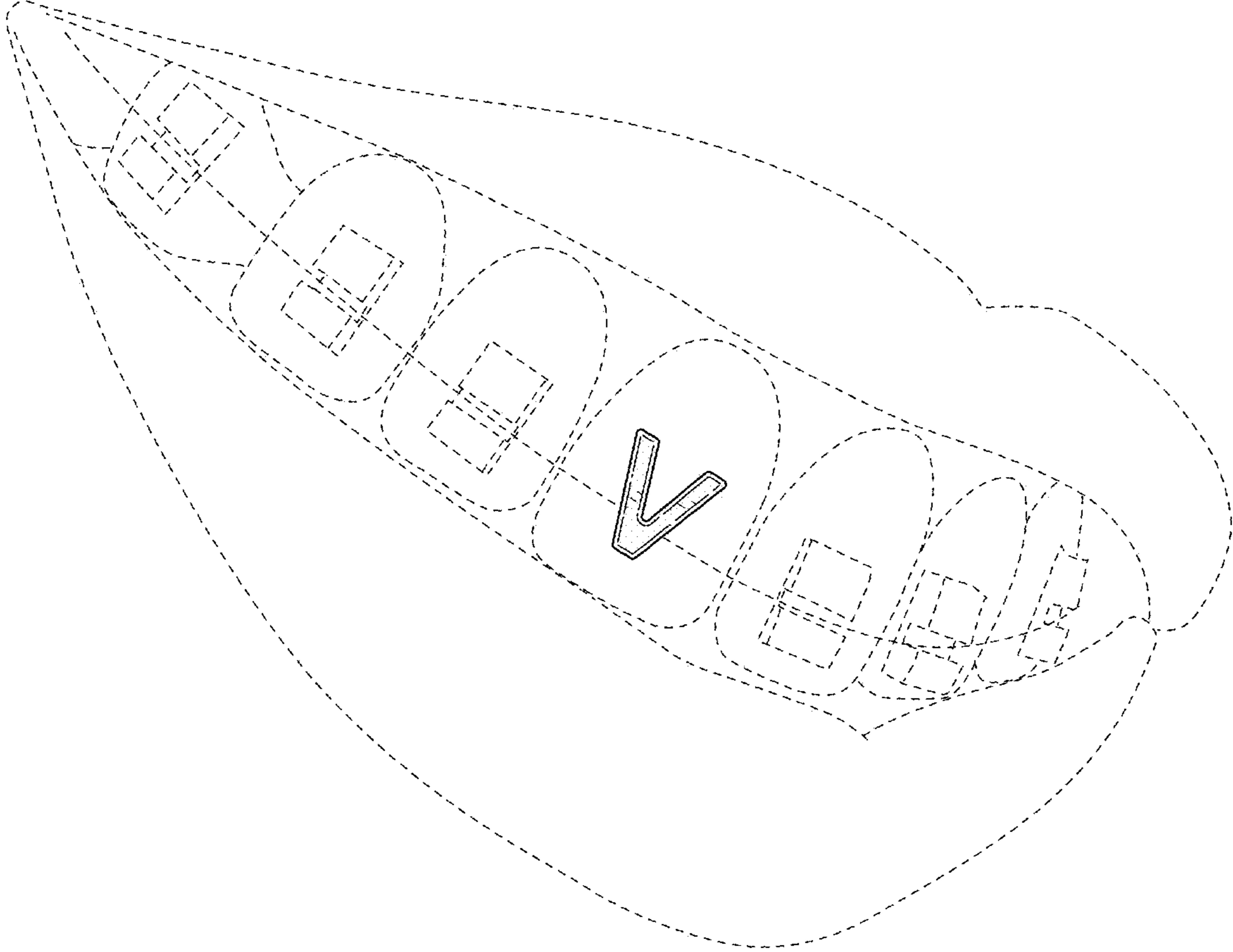


FIG. 176

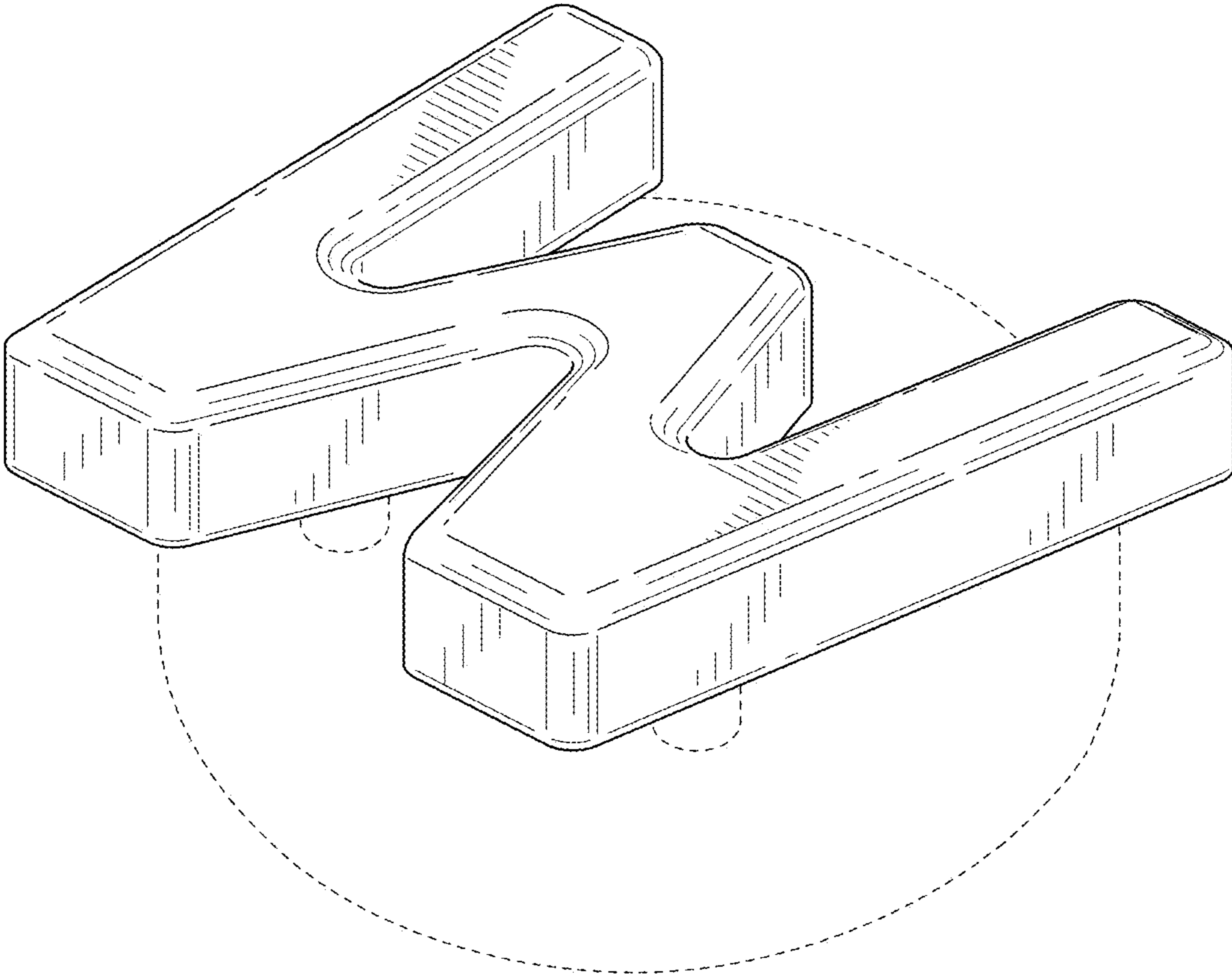


FIG. 177

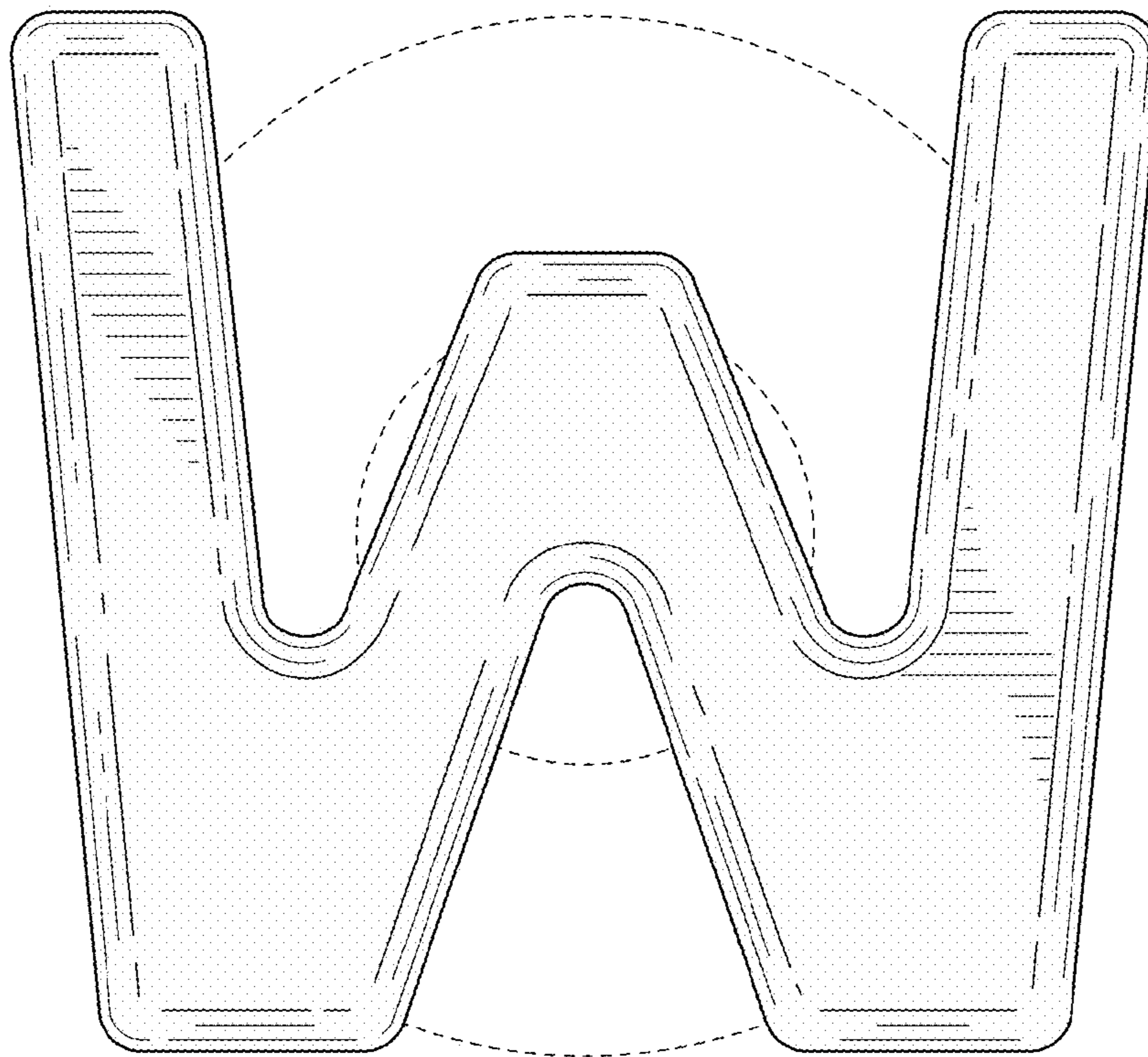


FIG. 178

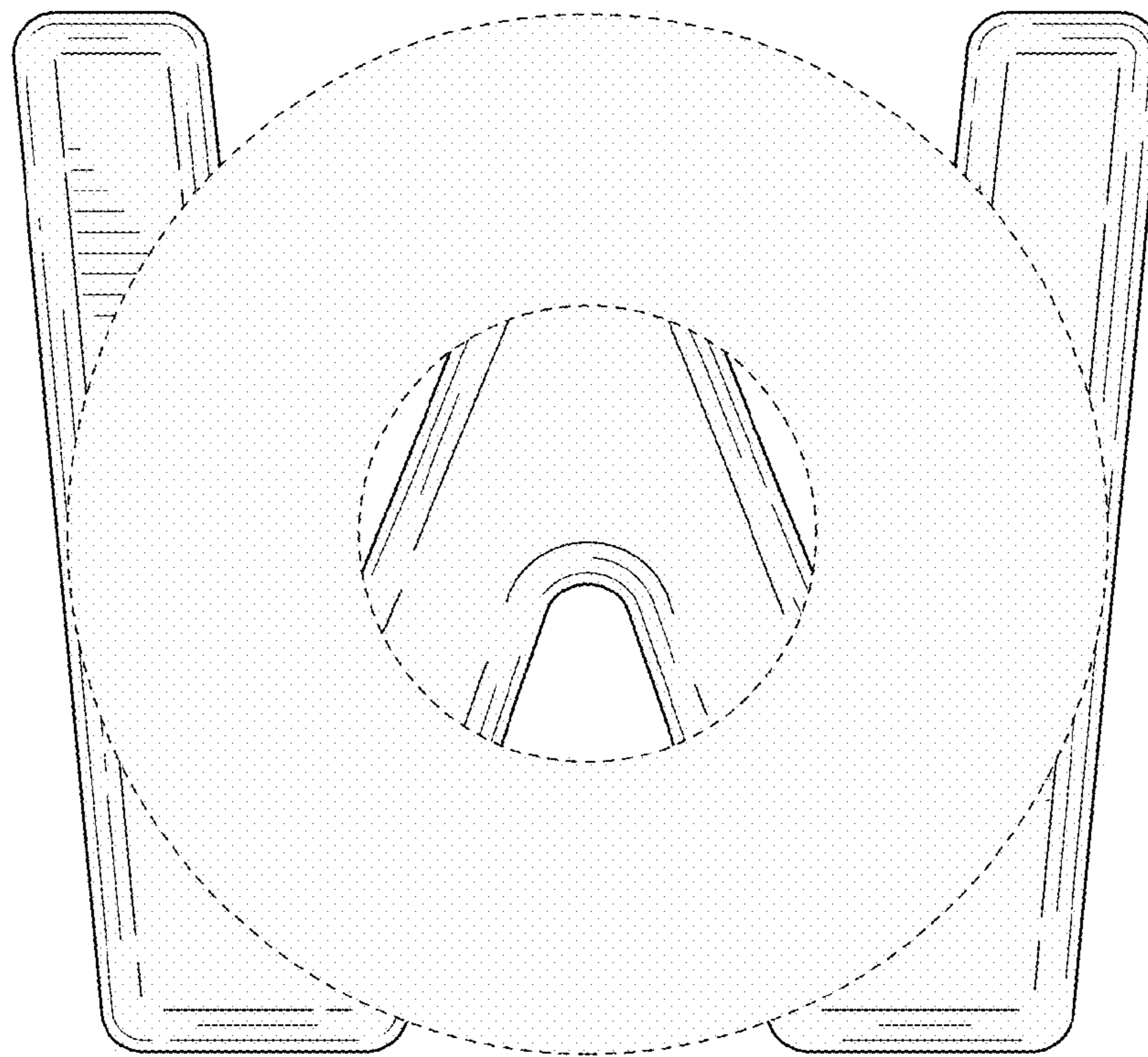


FIG. 179

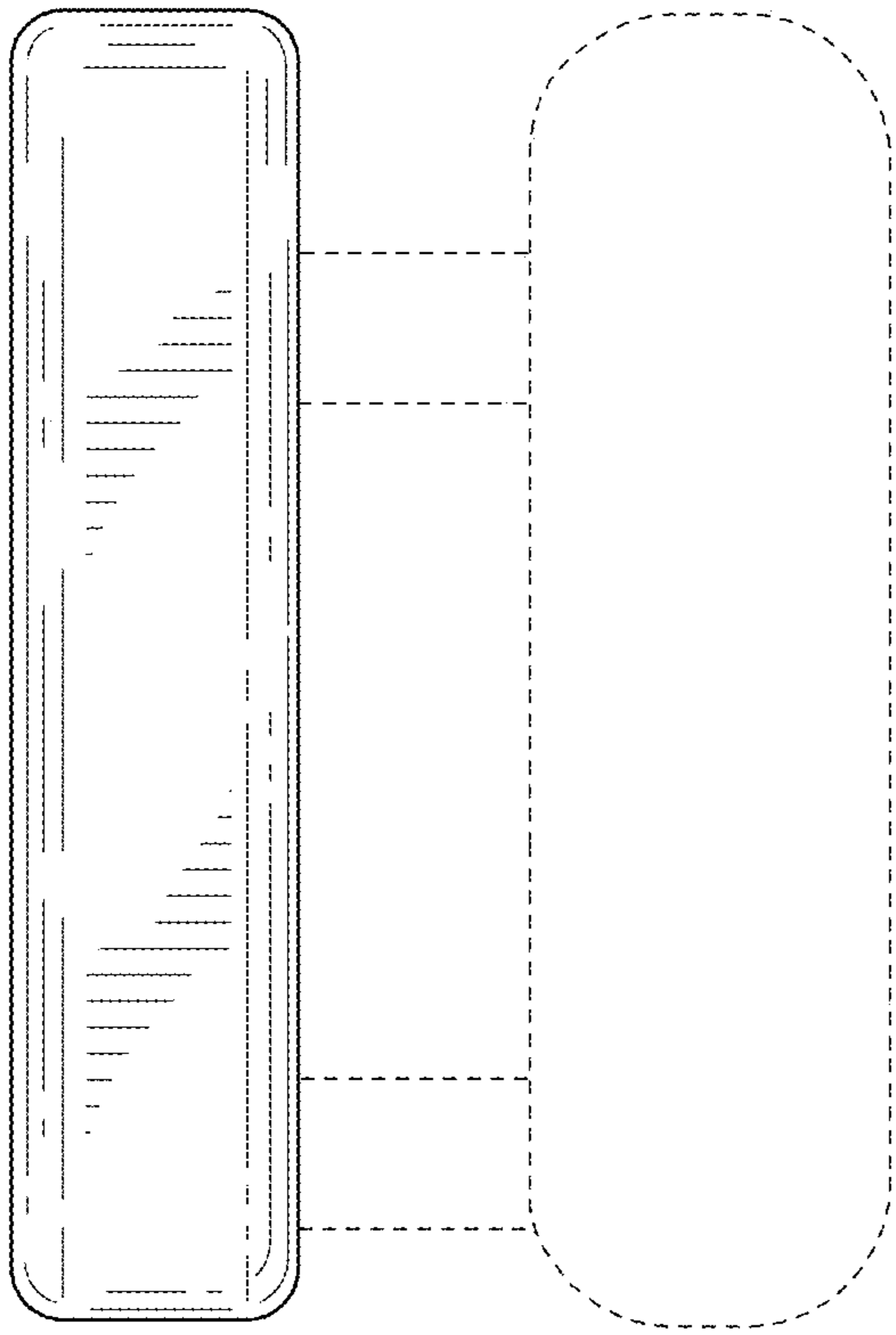


FIG. 180

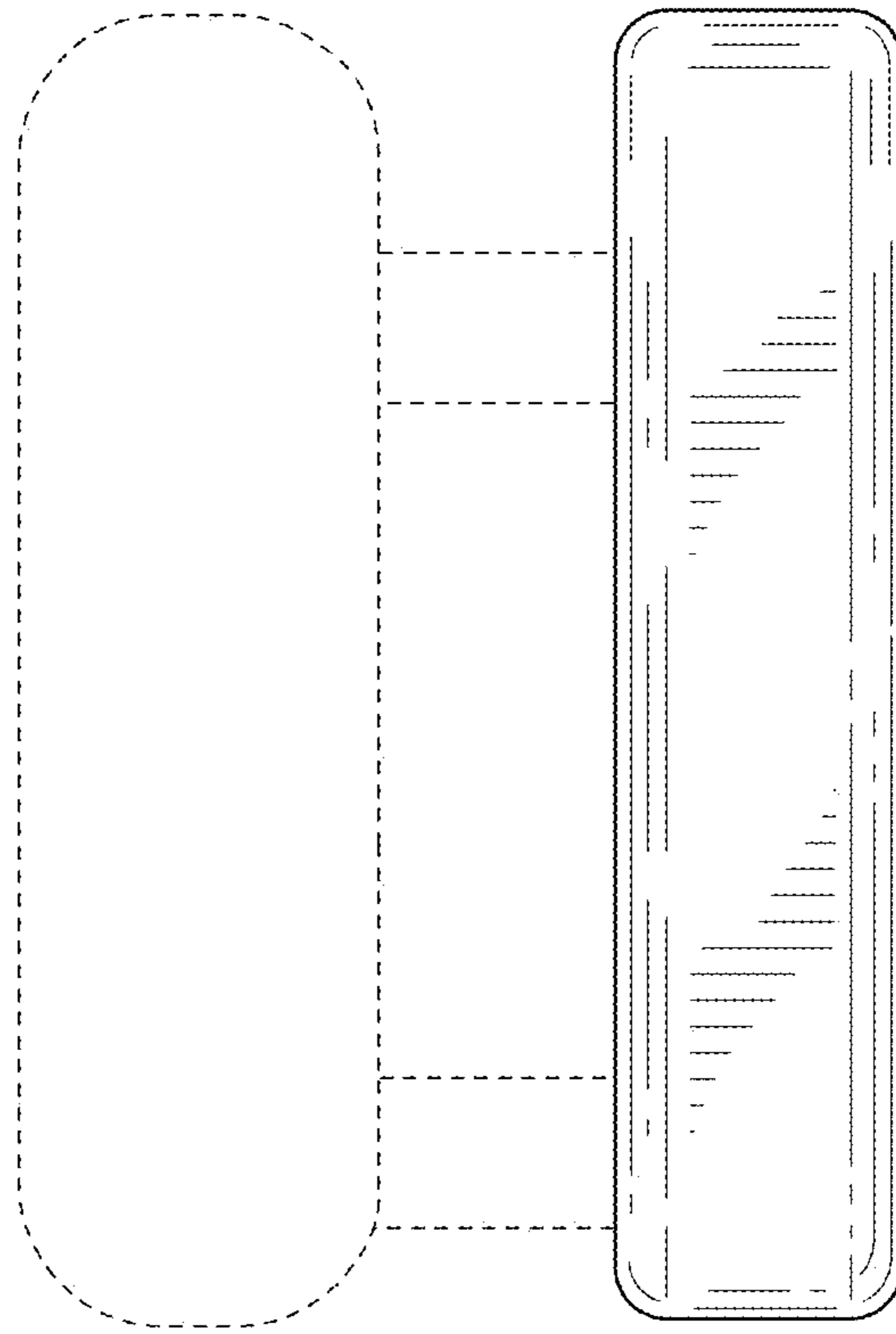


FIG. 181

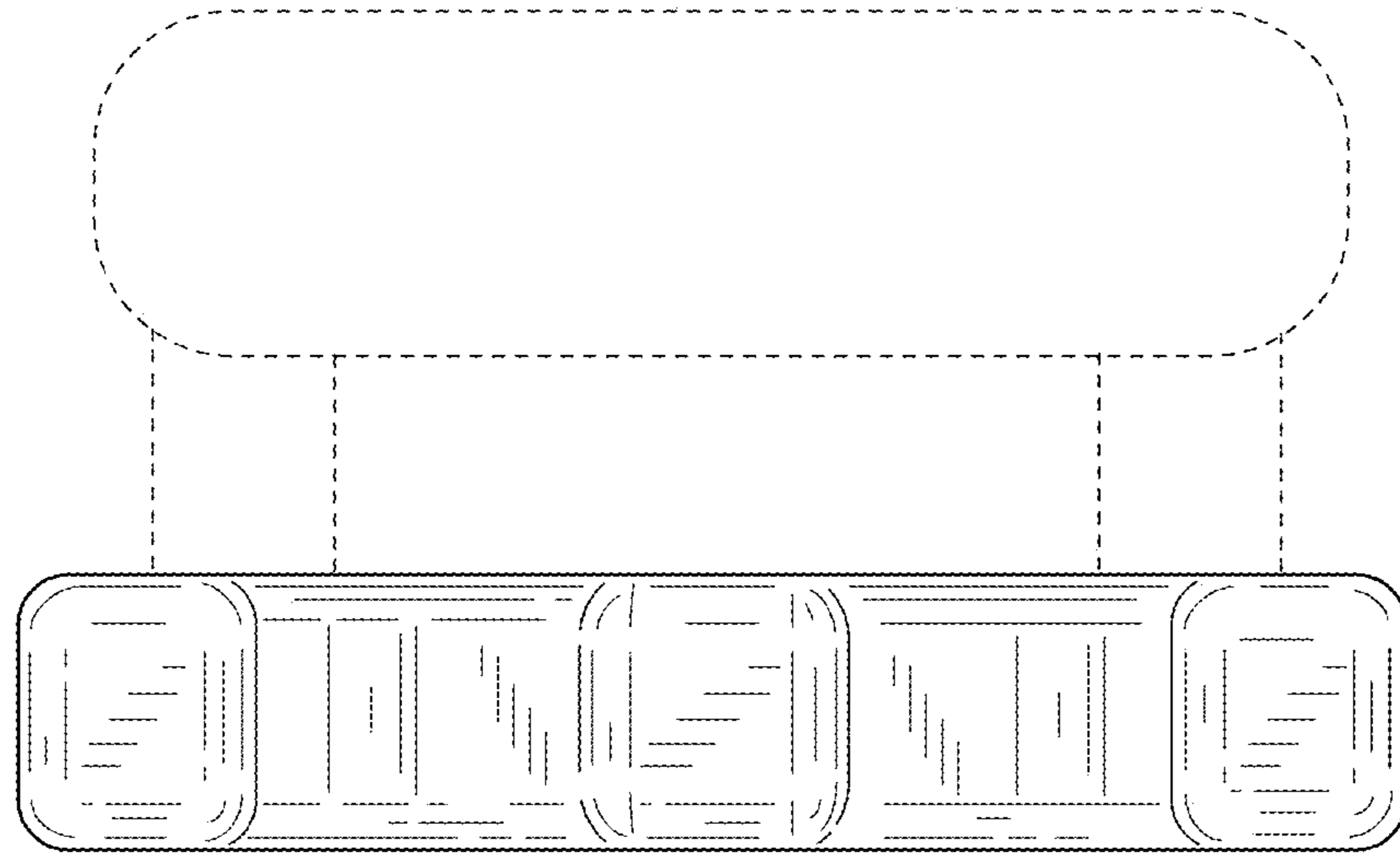


FIG. 182

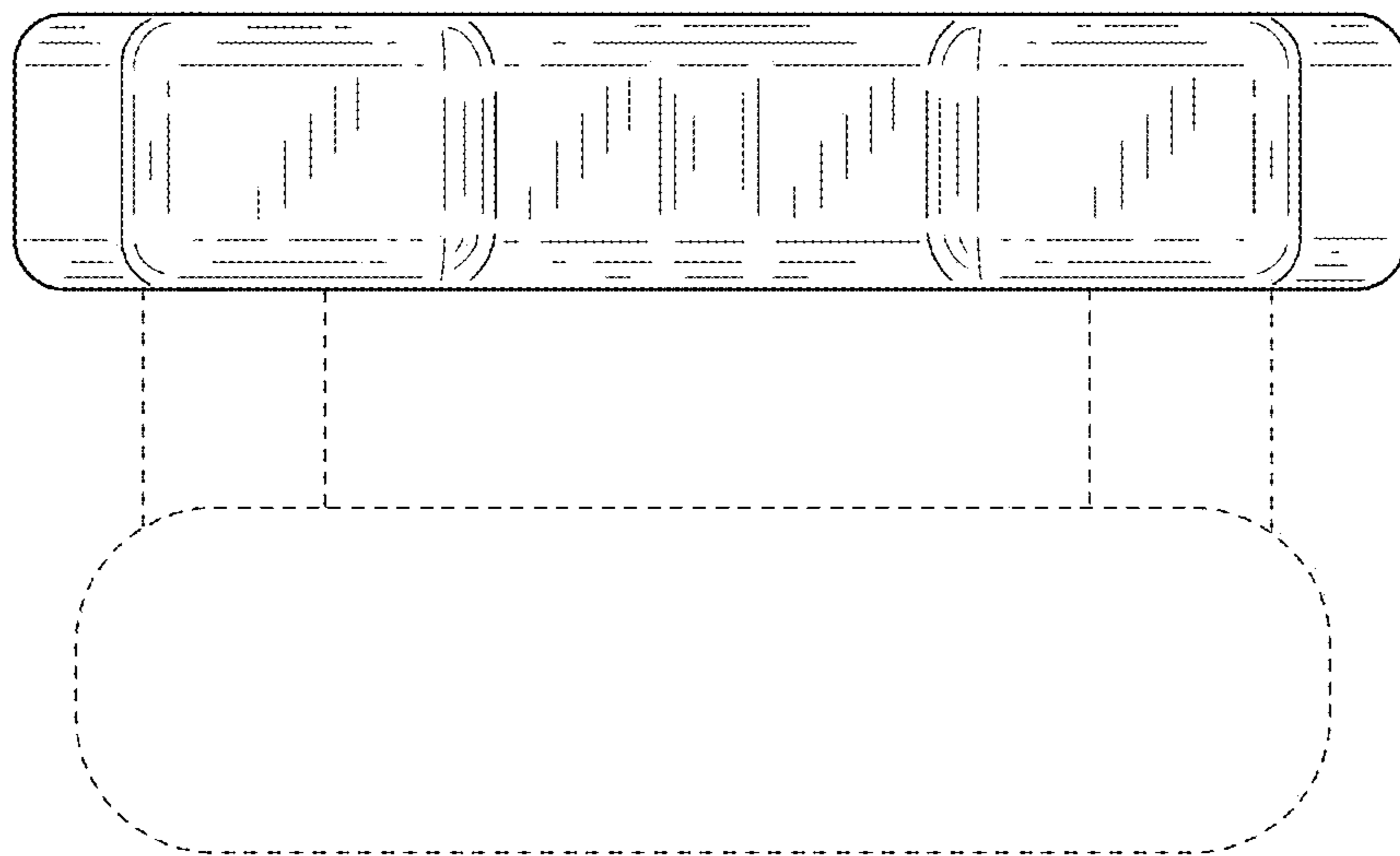


FIG. 183

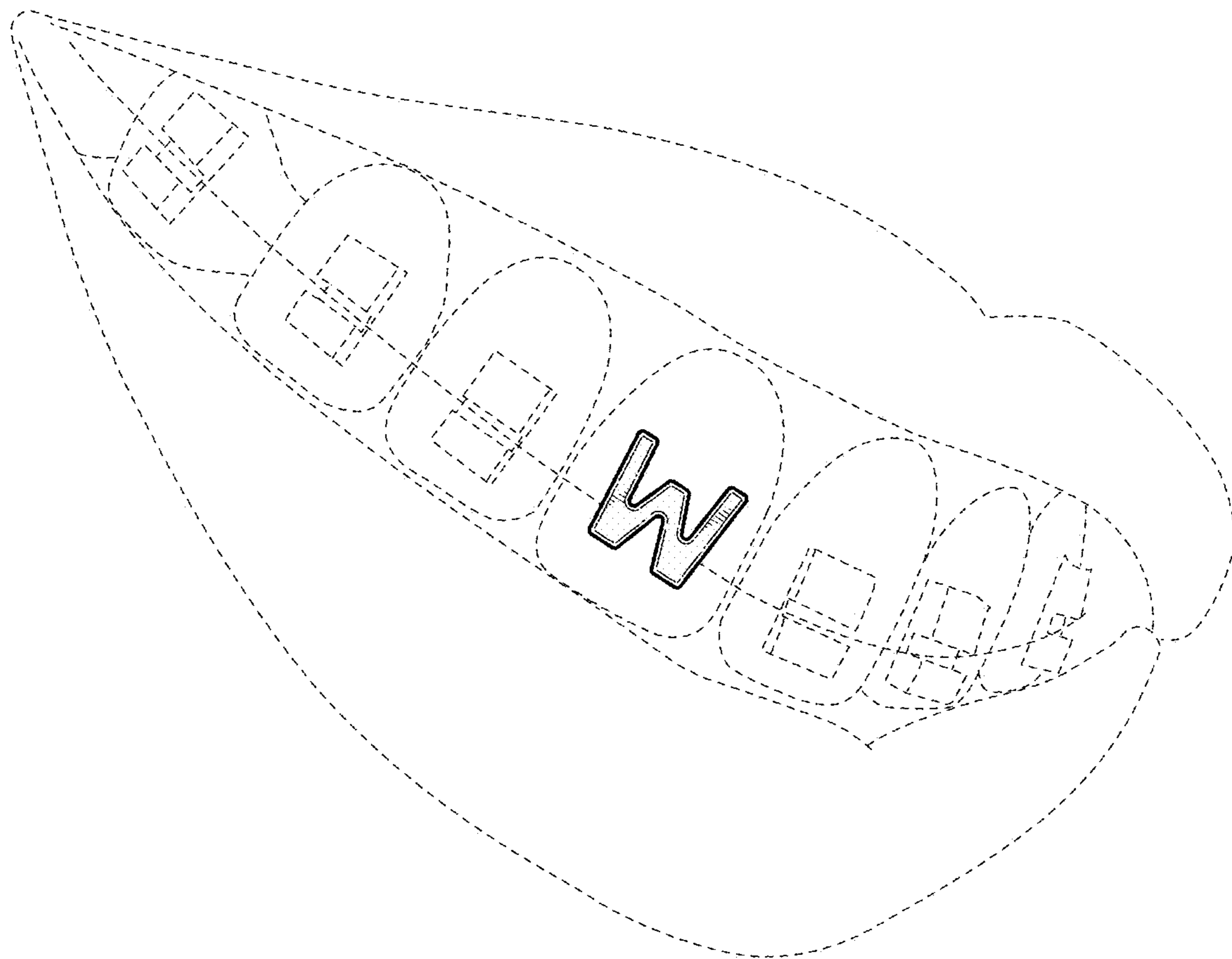


FIG. 184

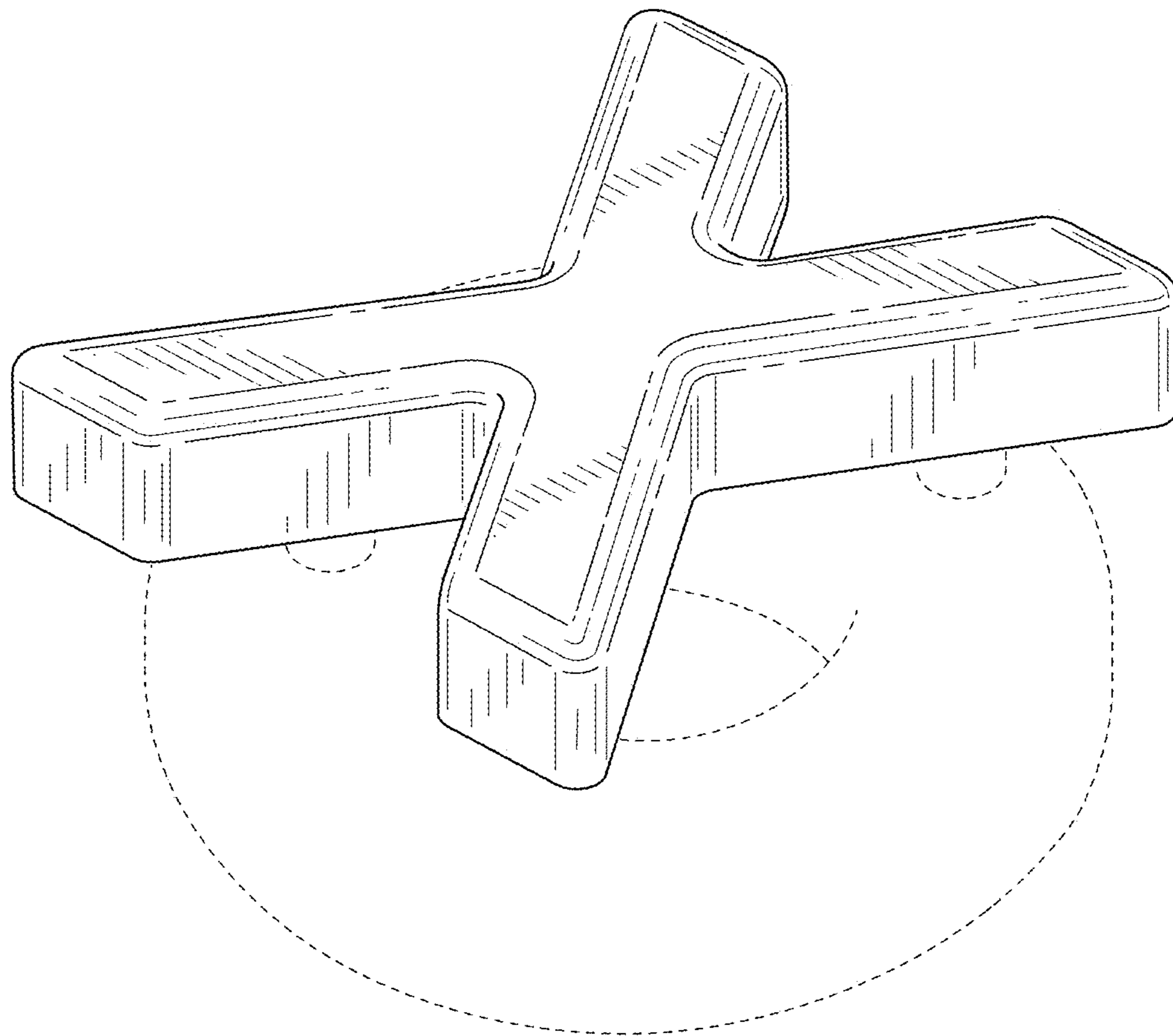


FIG. 185

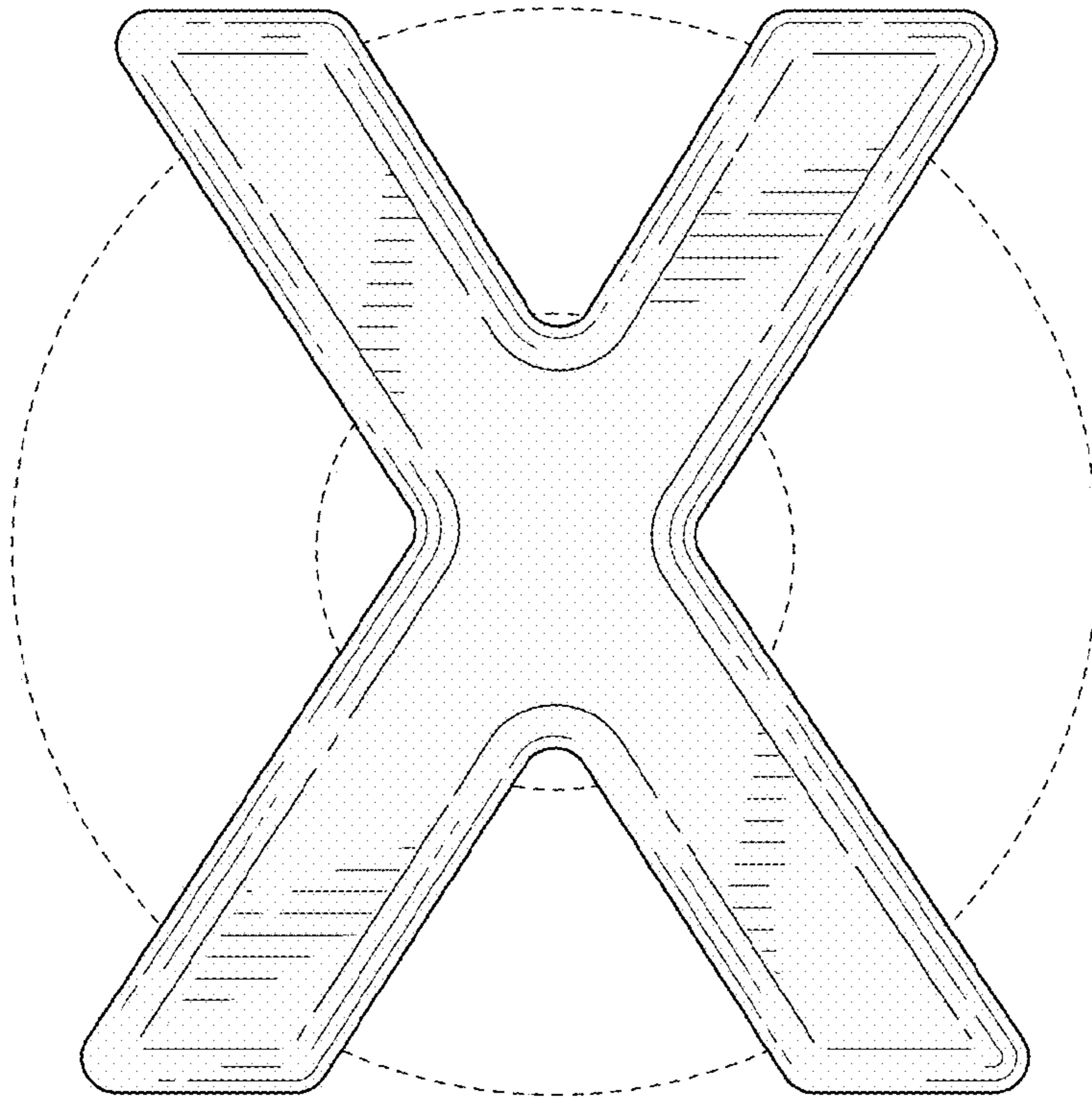


FIG. 186

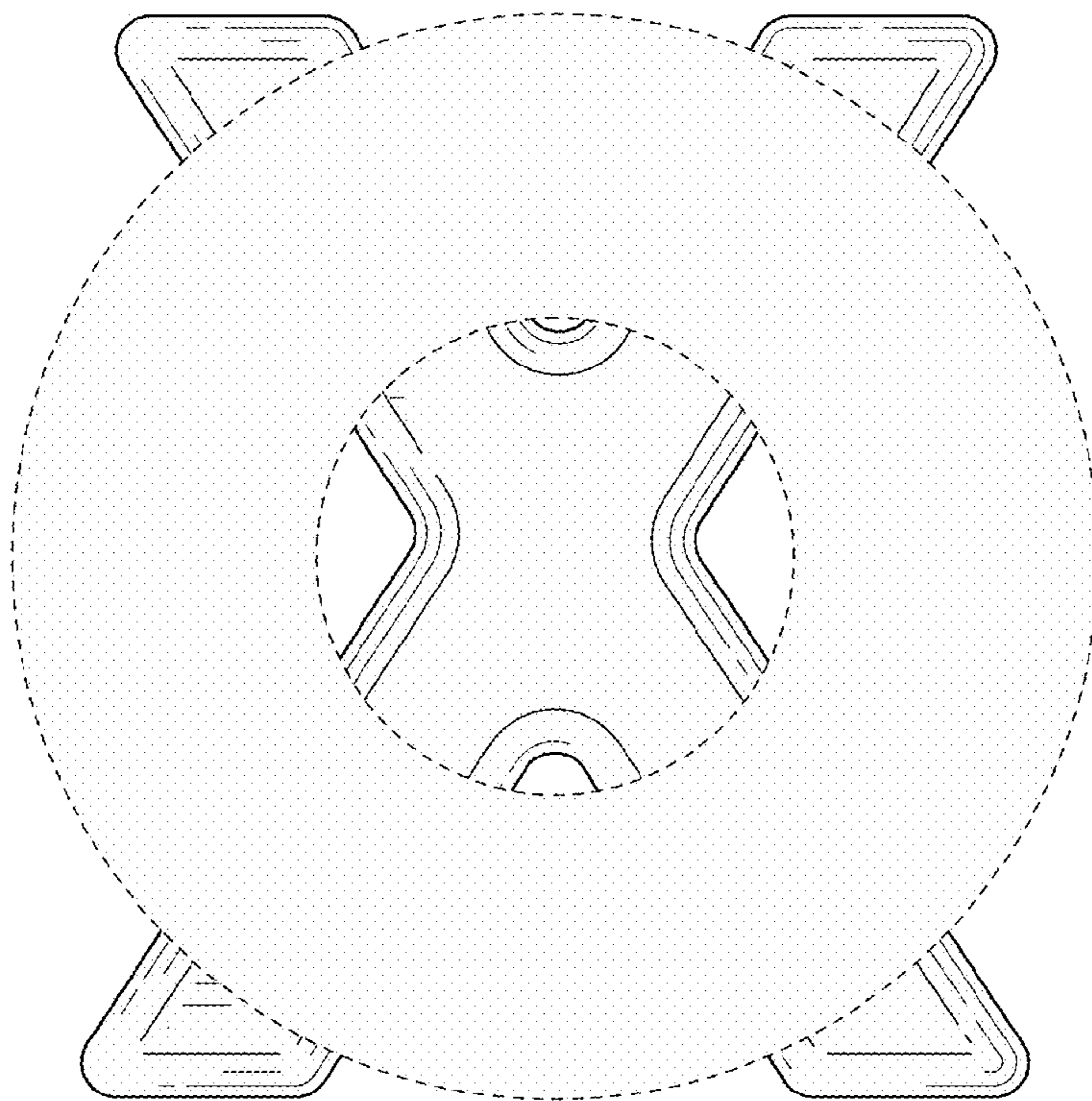


FIG. 187

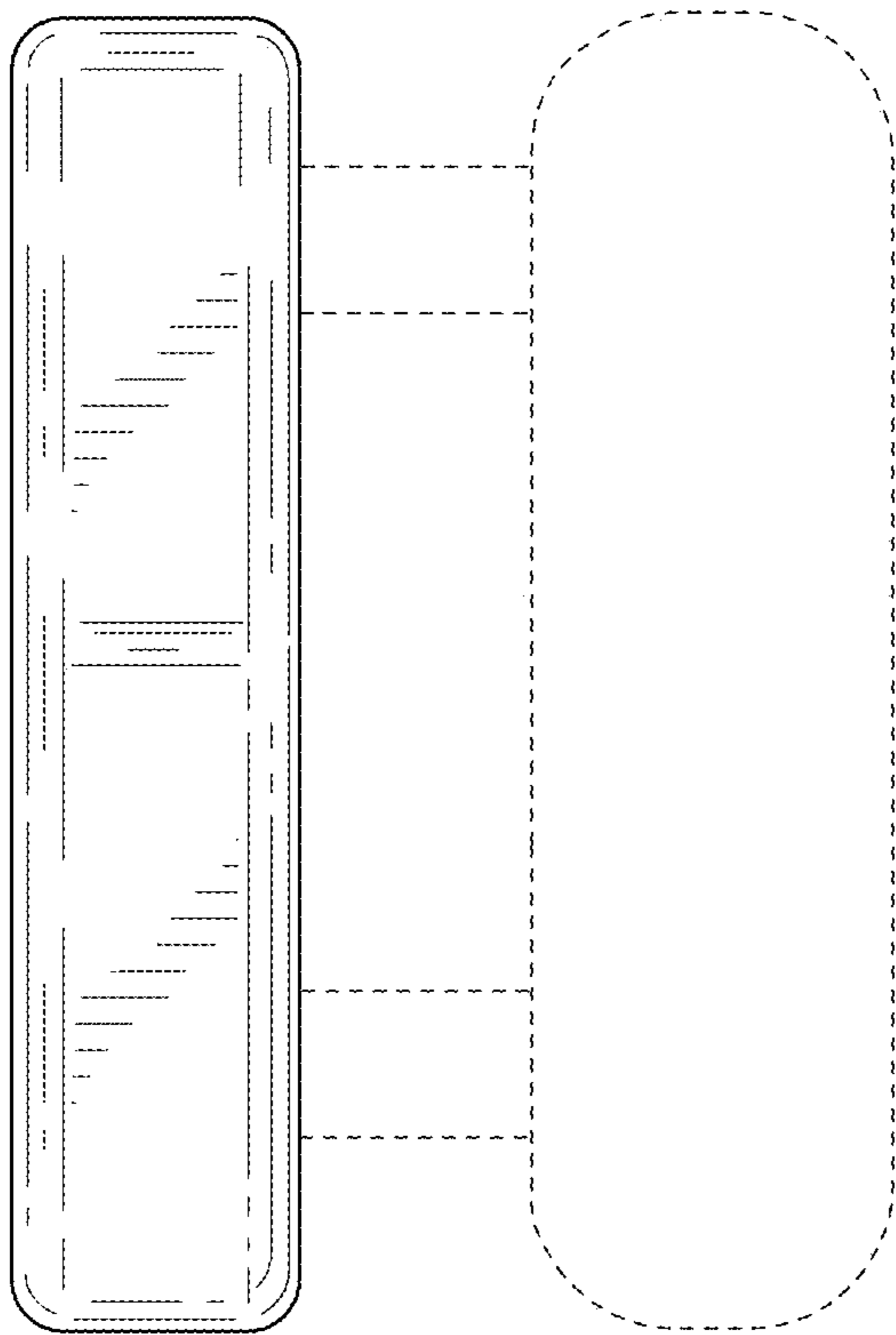


FIG. 188

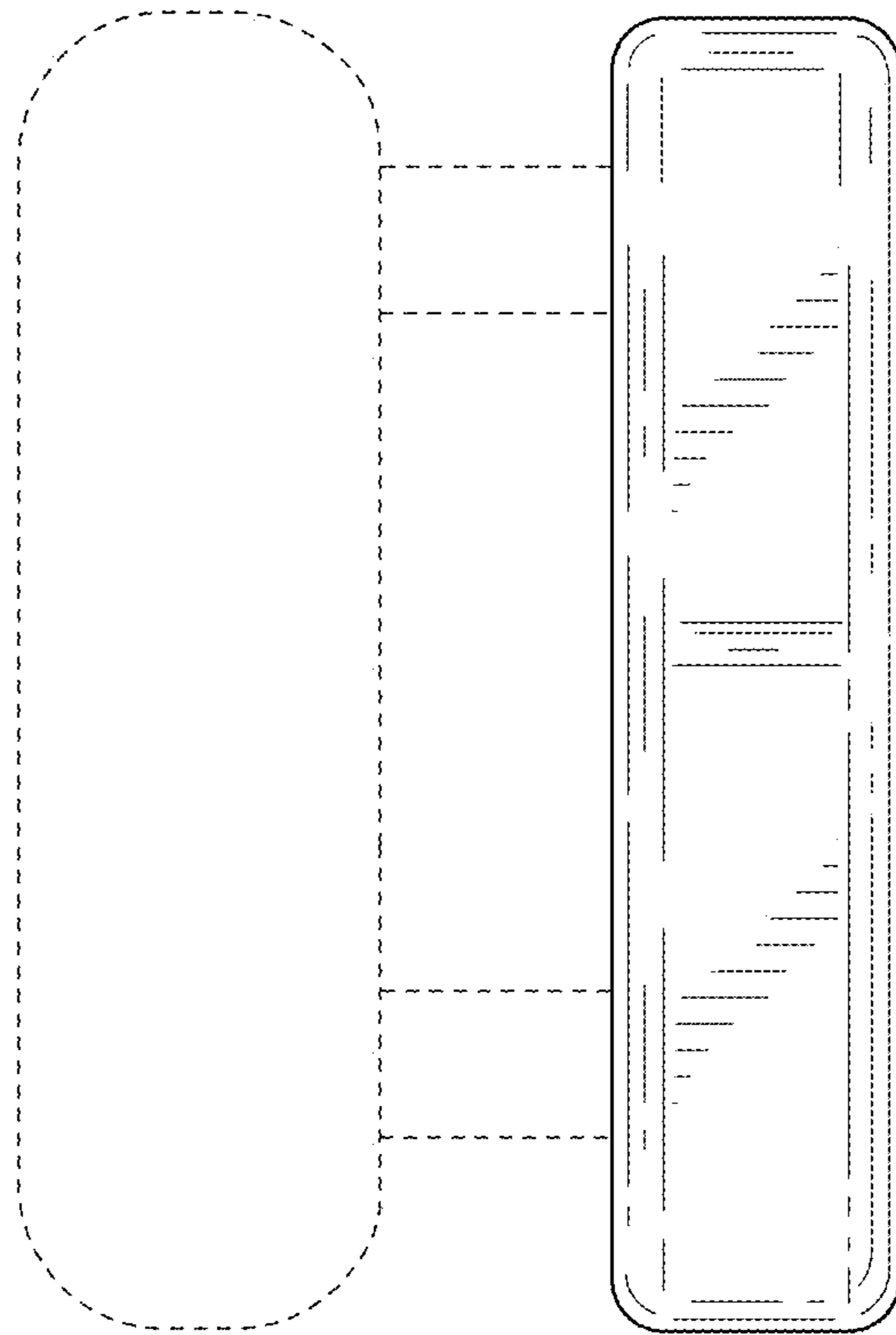


FIG. 189

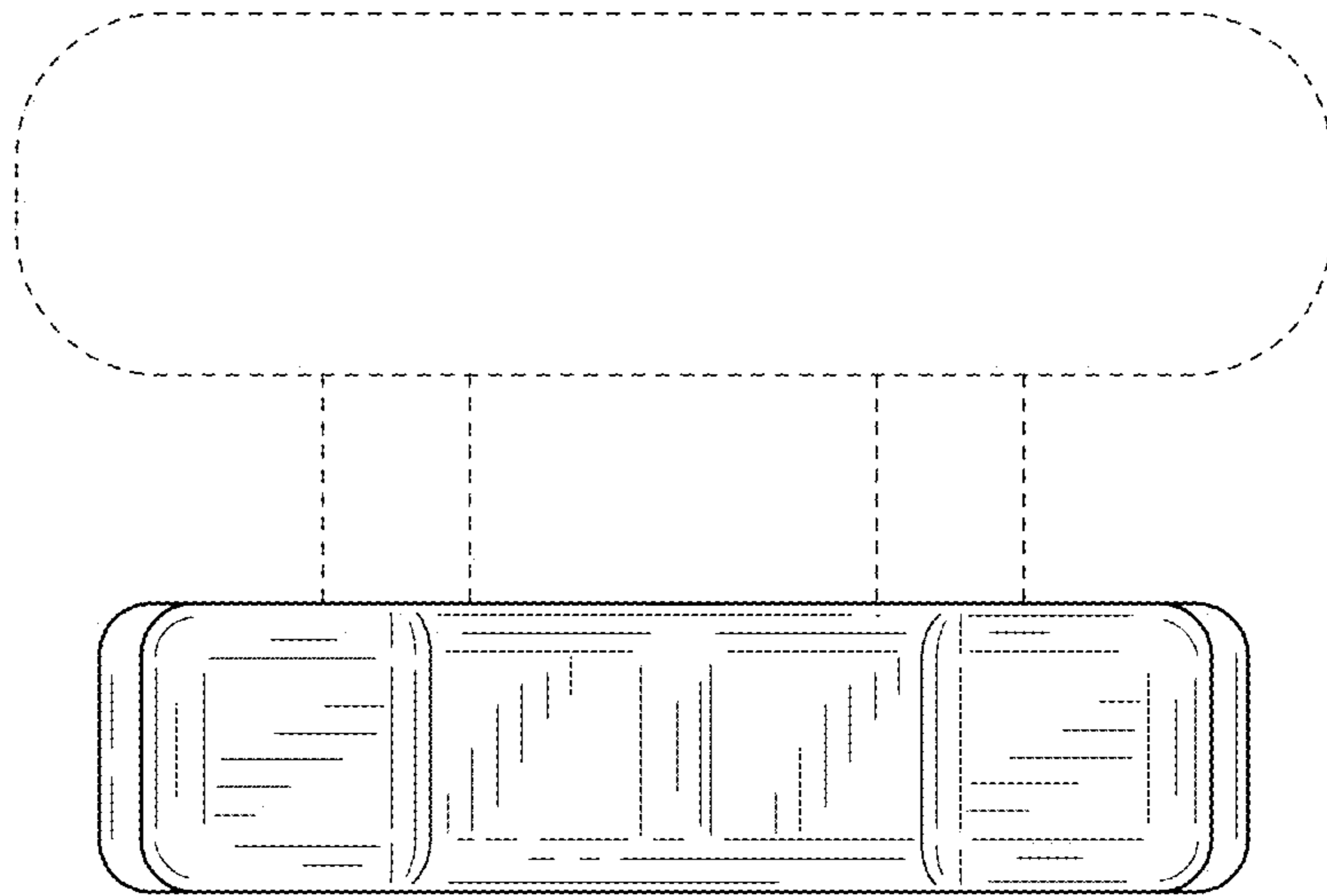


FIG. 190

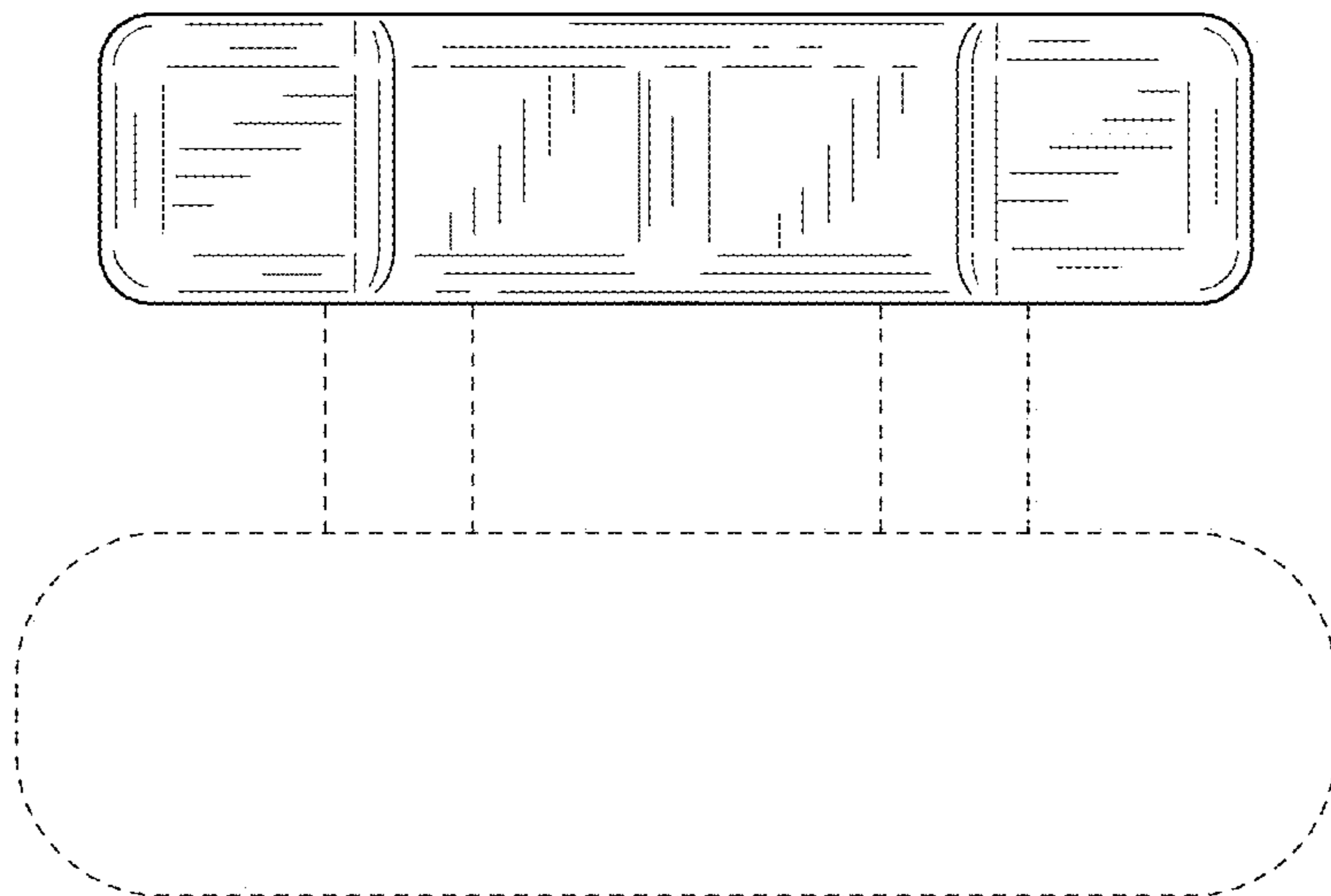


FIG. 191

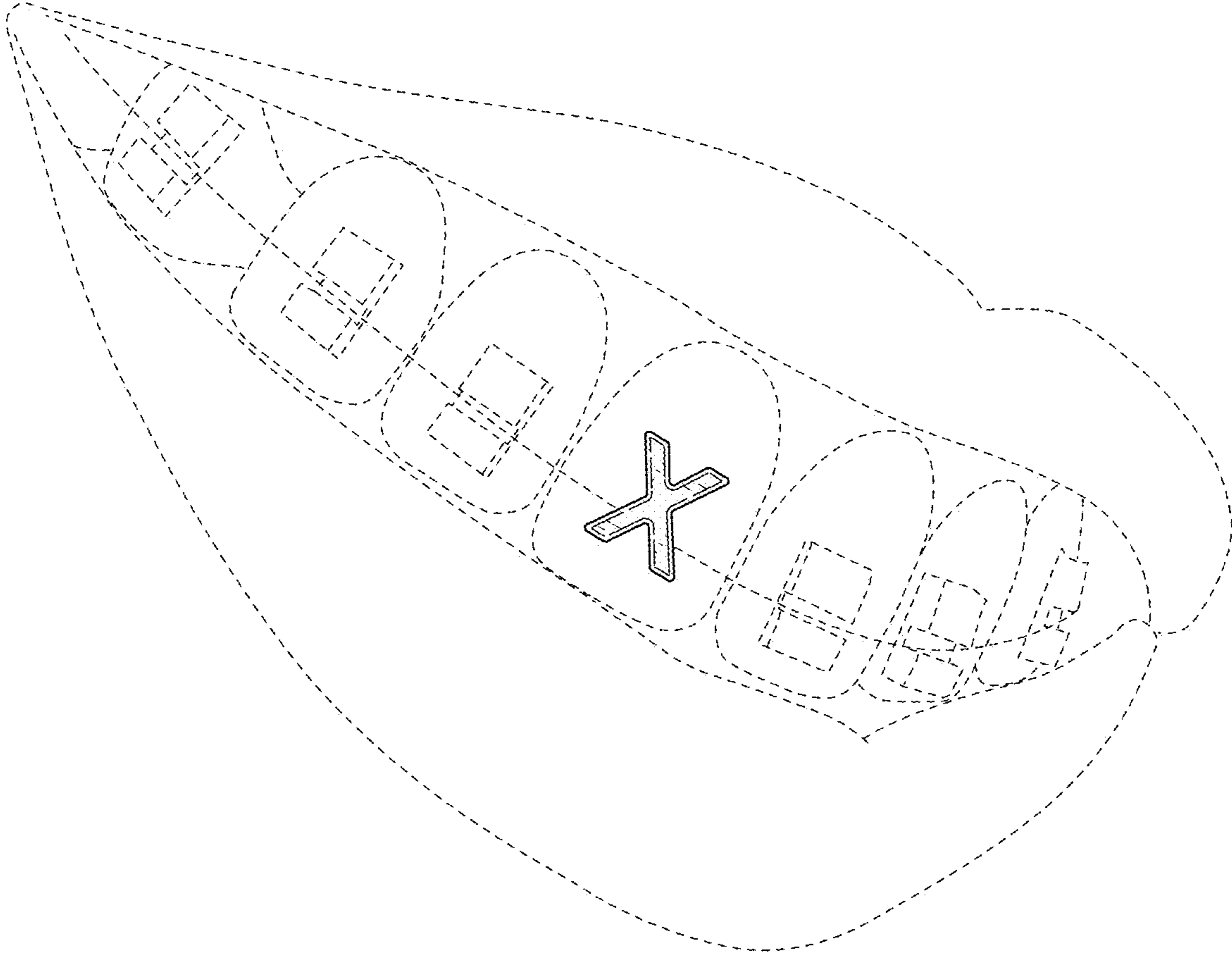


FIG. 192

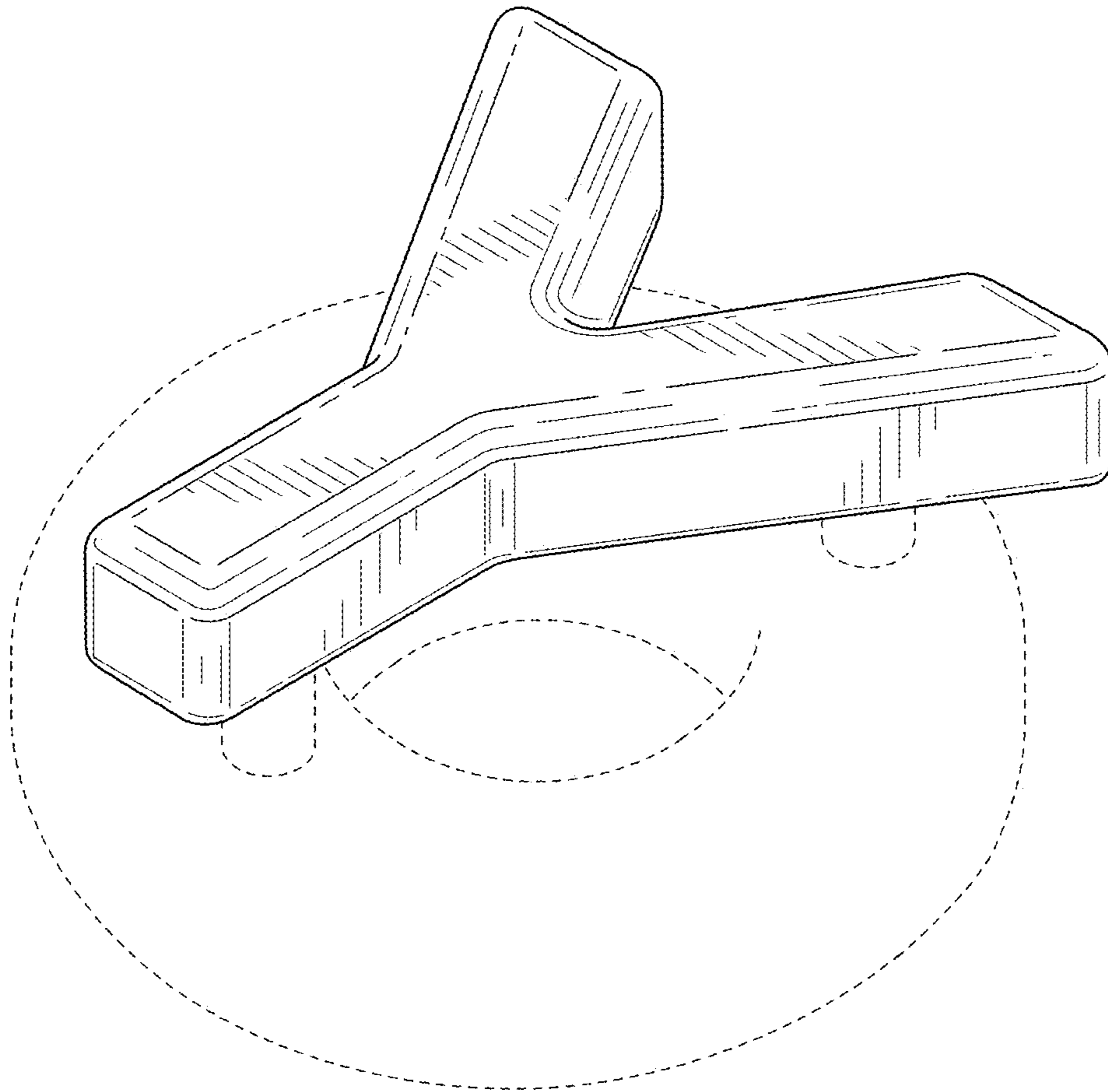


FIG. 193

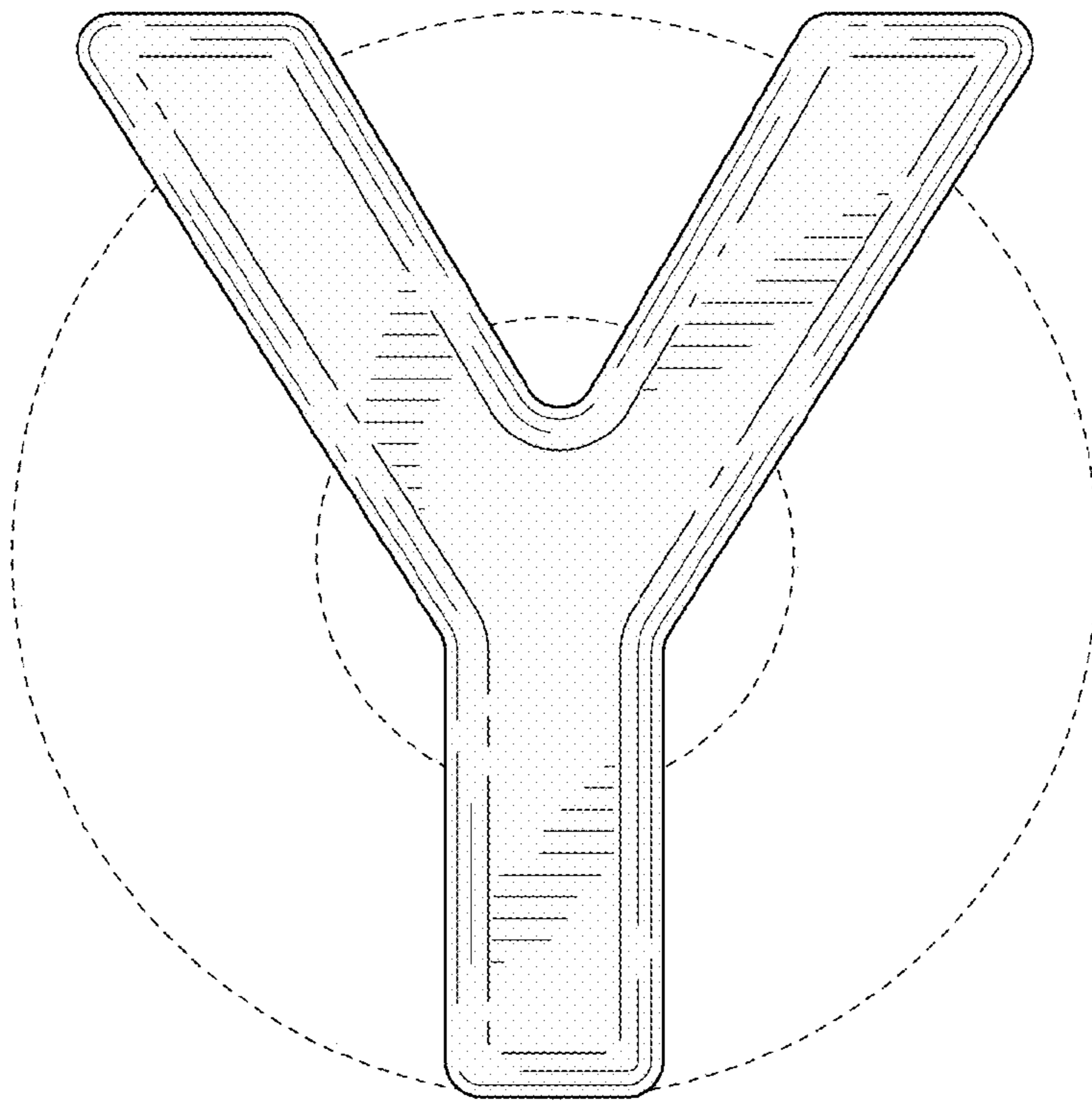


FIG. 194

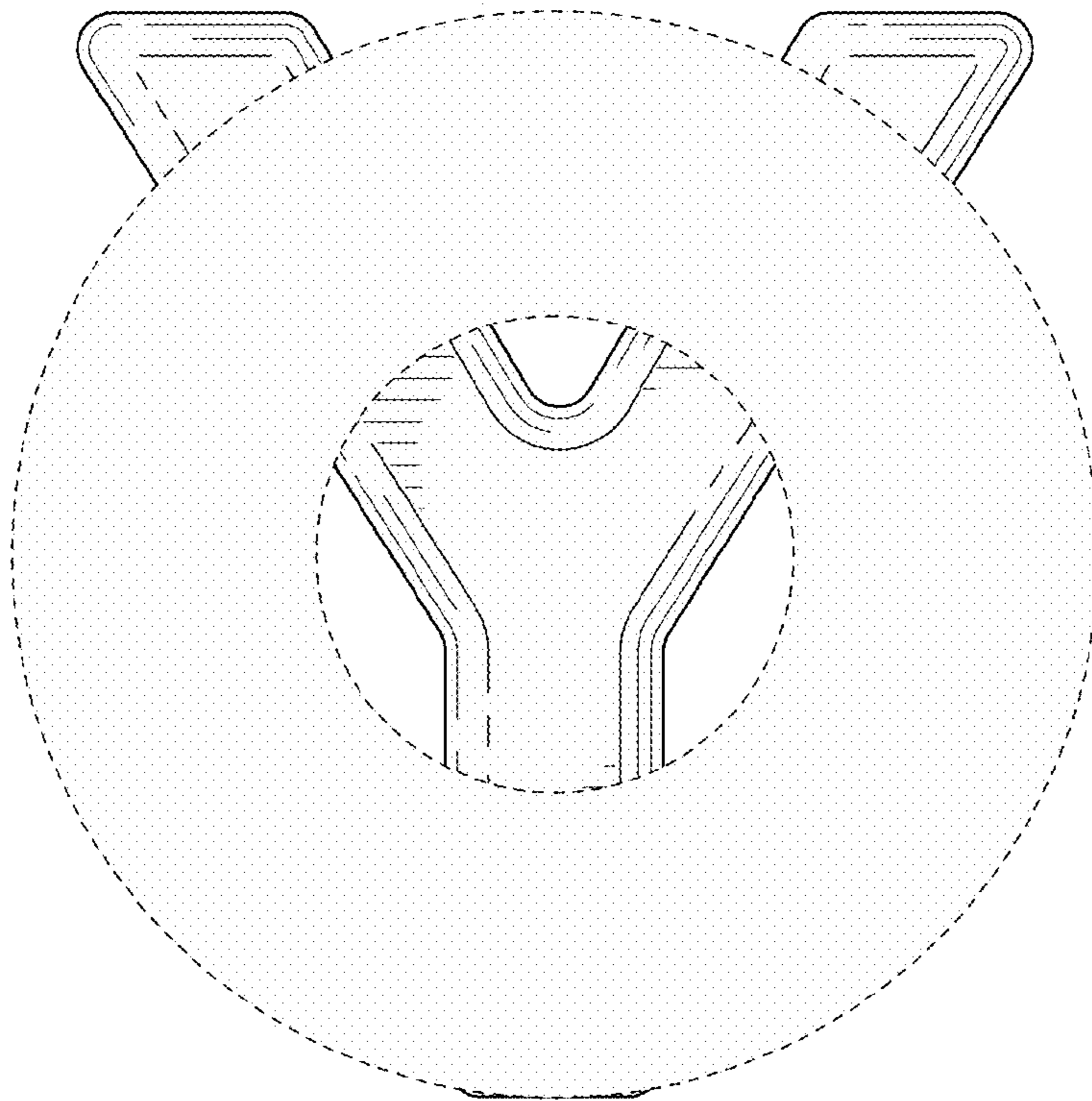


FIG. 195

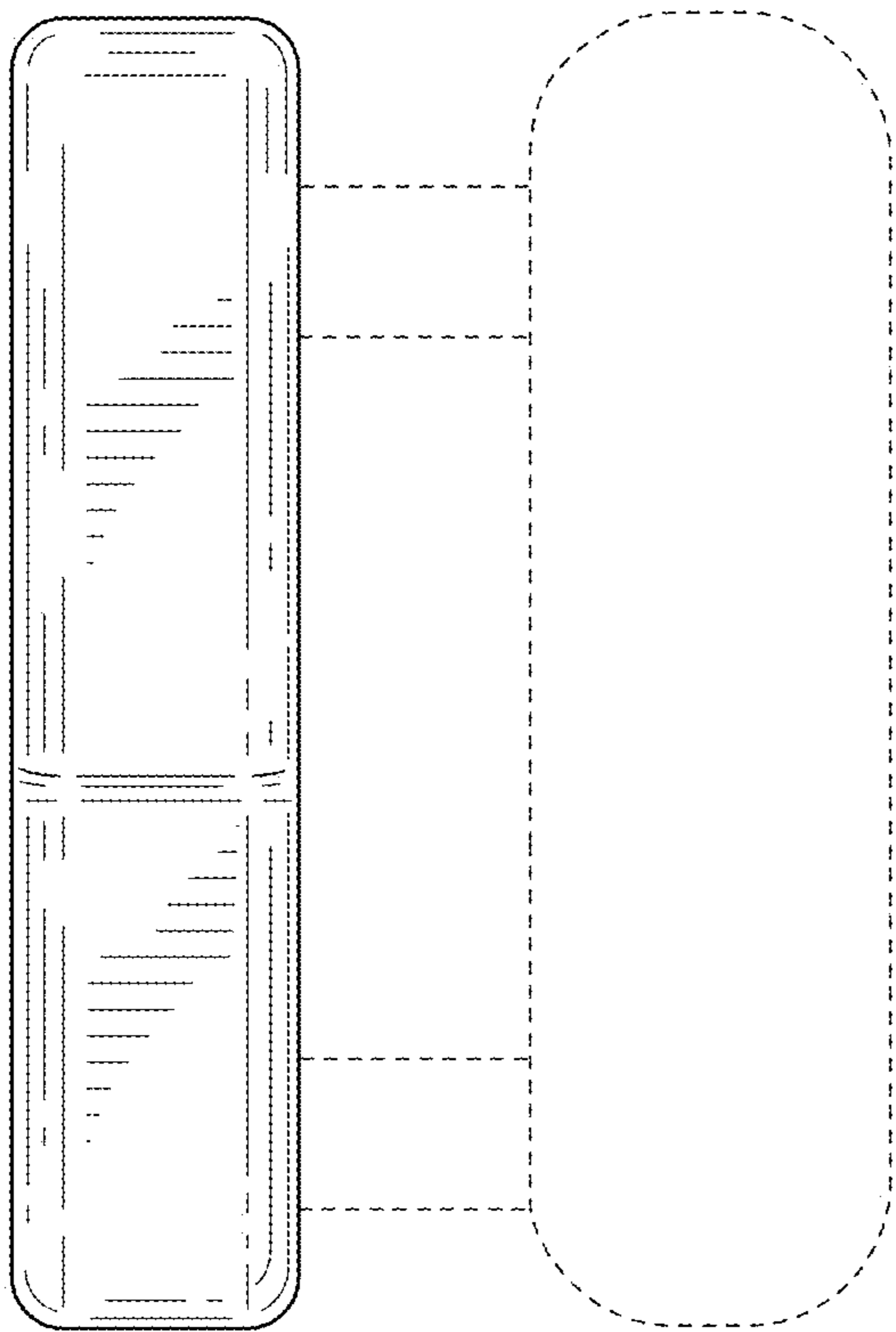


FIG. 196

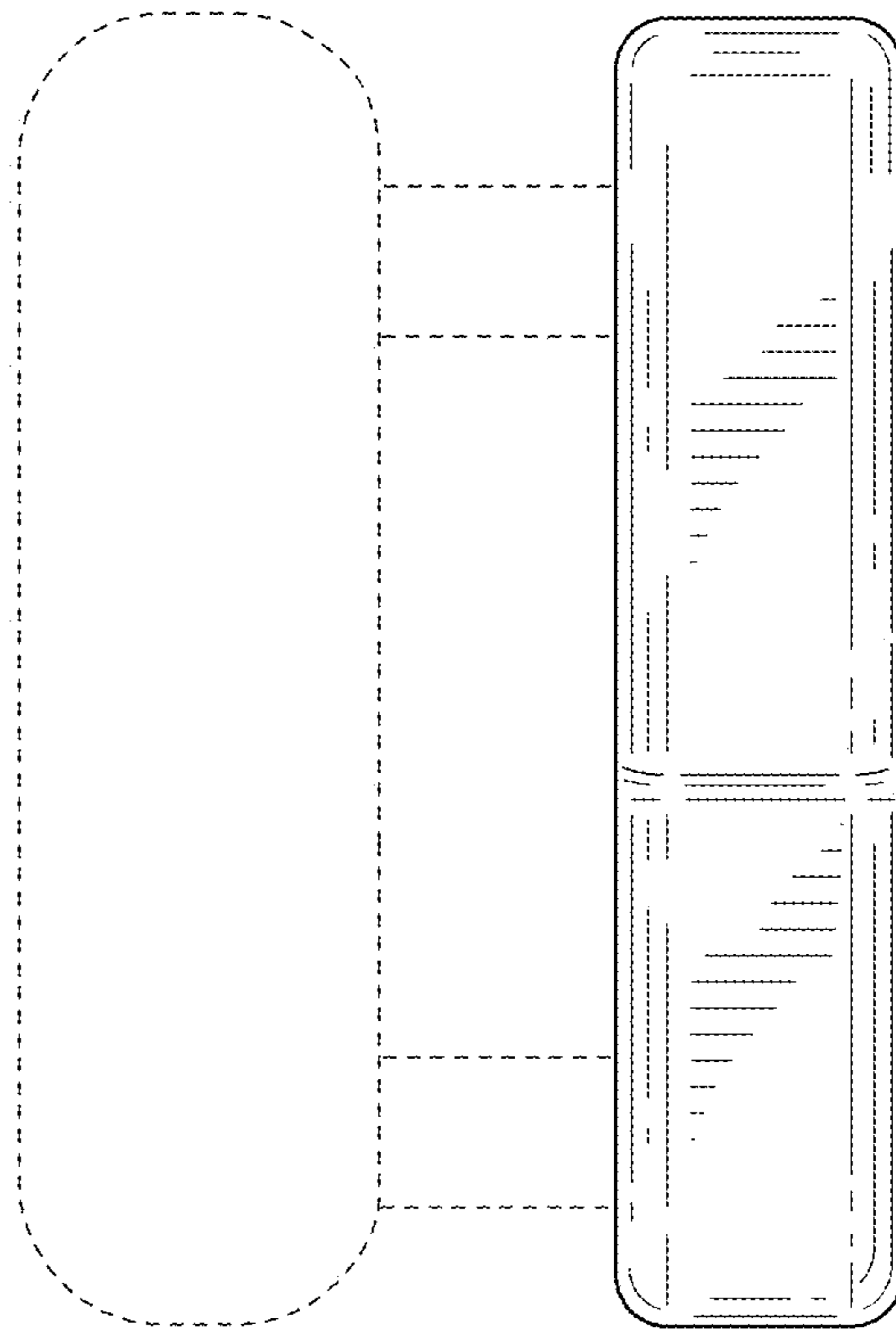


FIG. 197

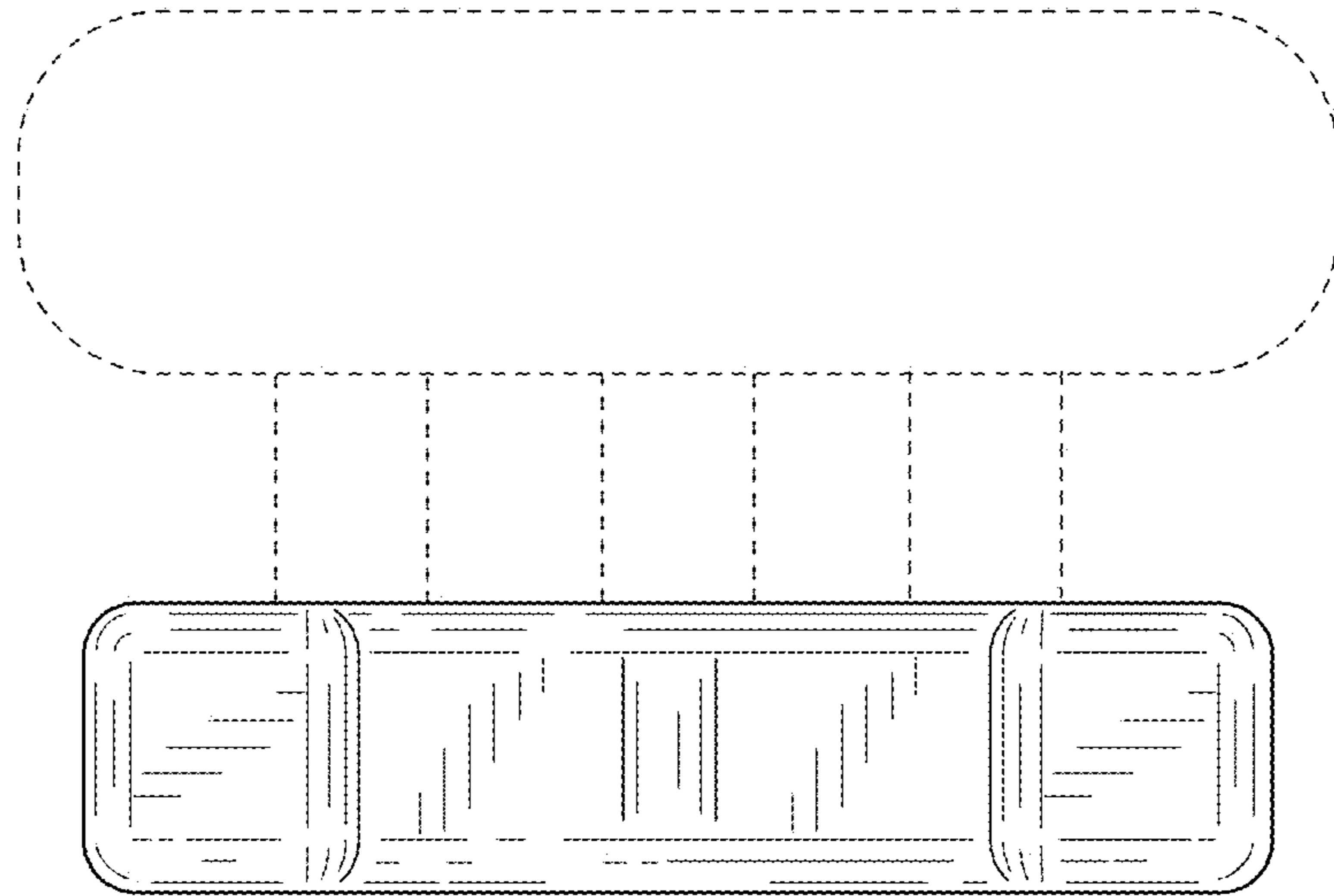


FIG. 198

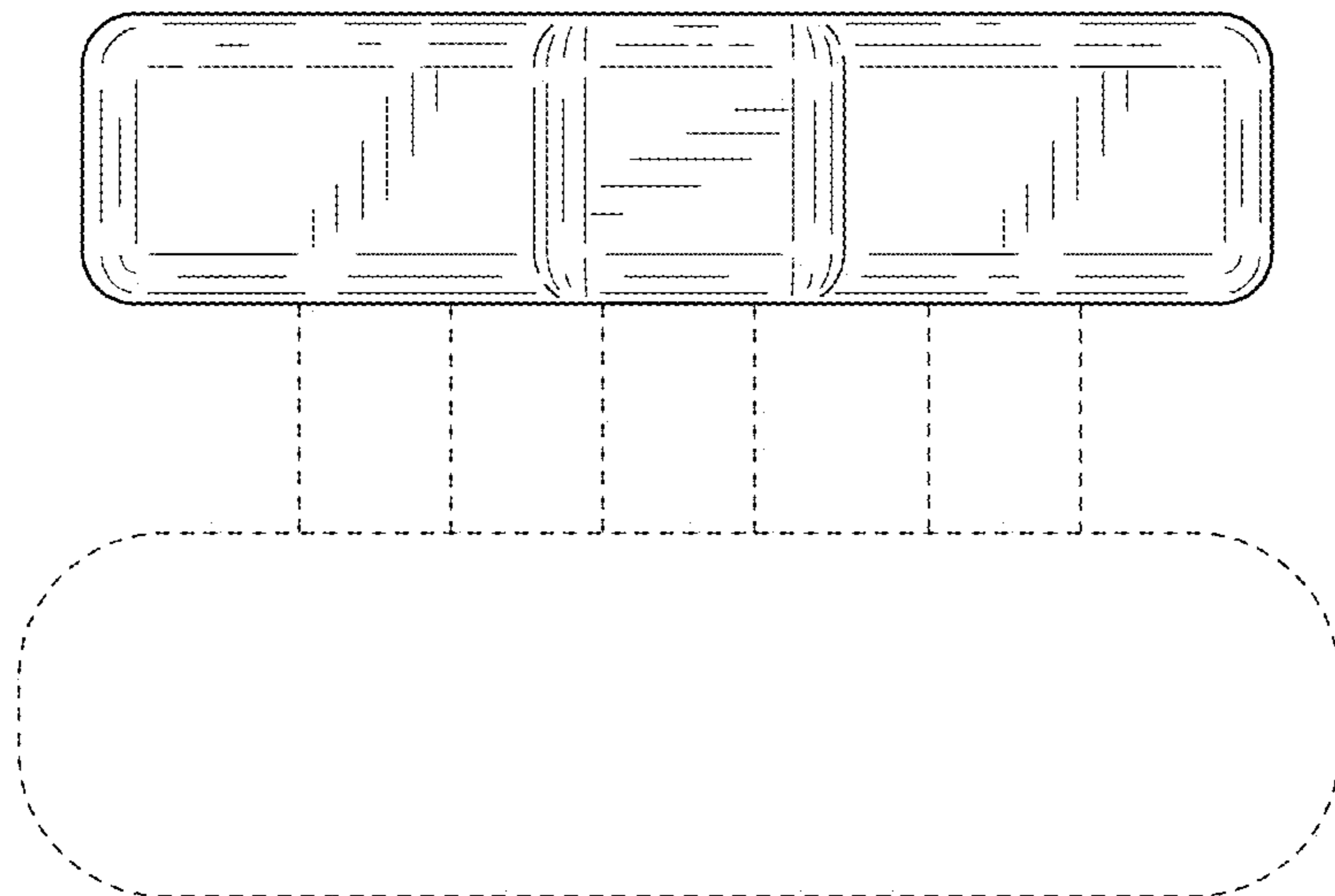


FIG. 199

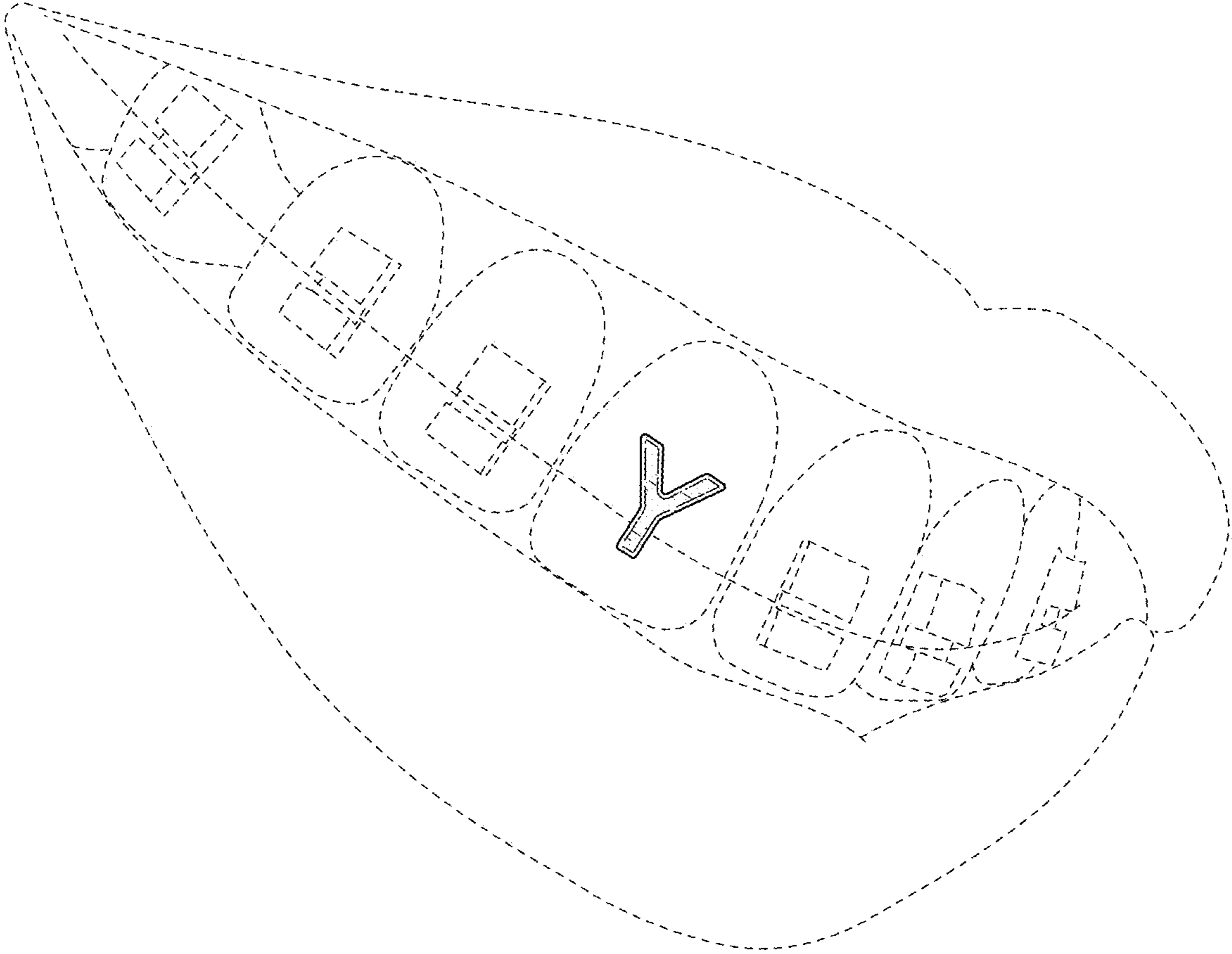


FIG. 200

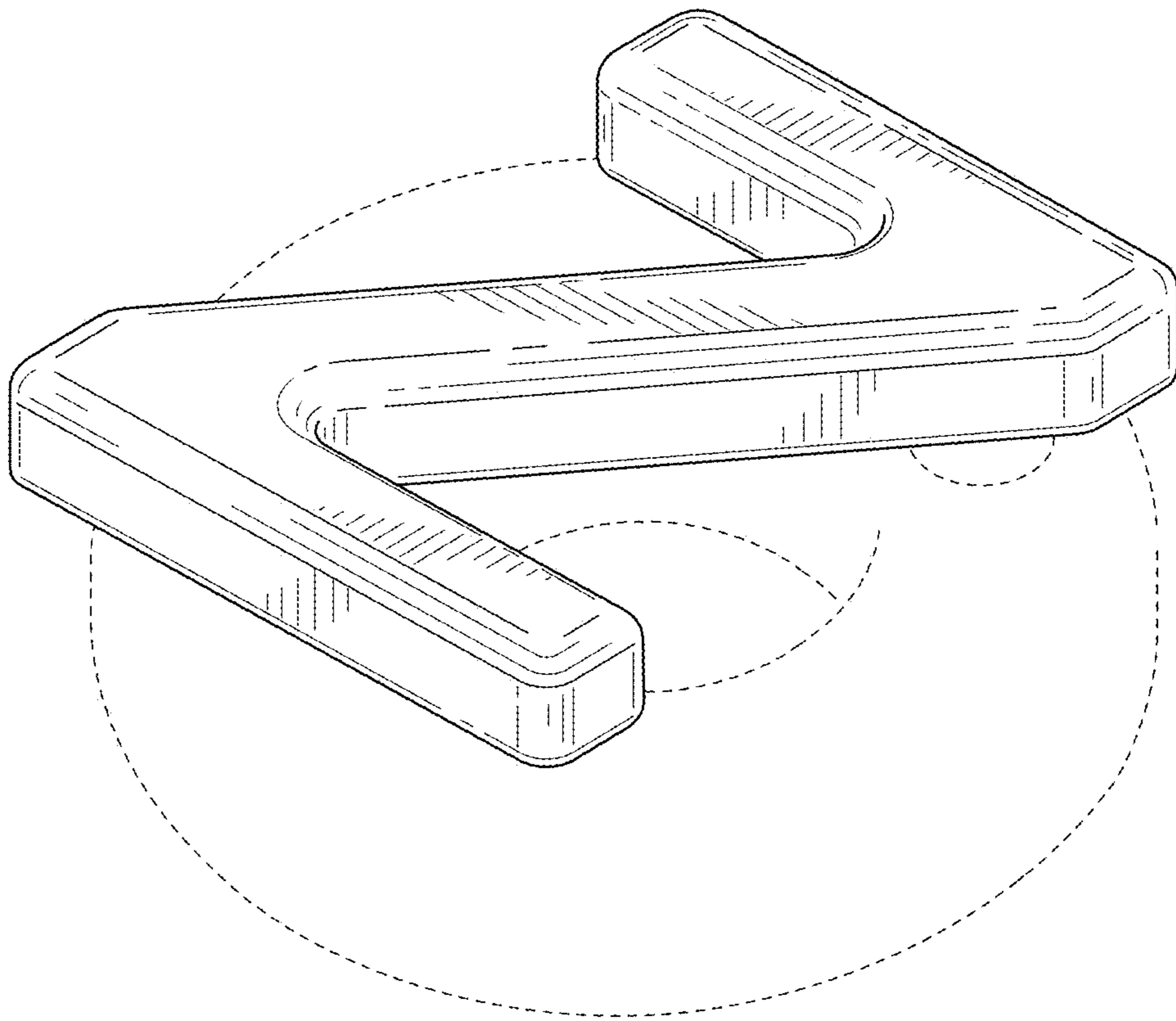


FIG. 201

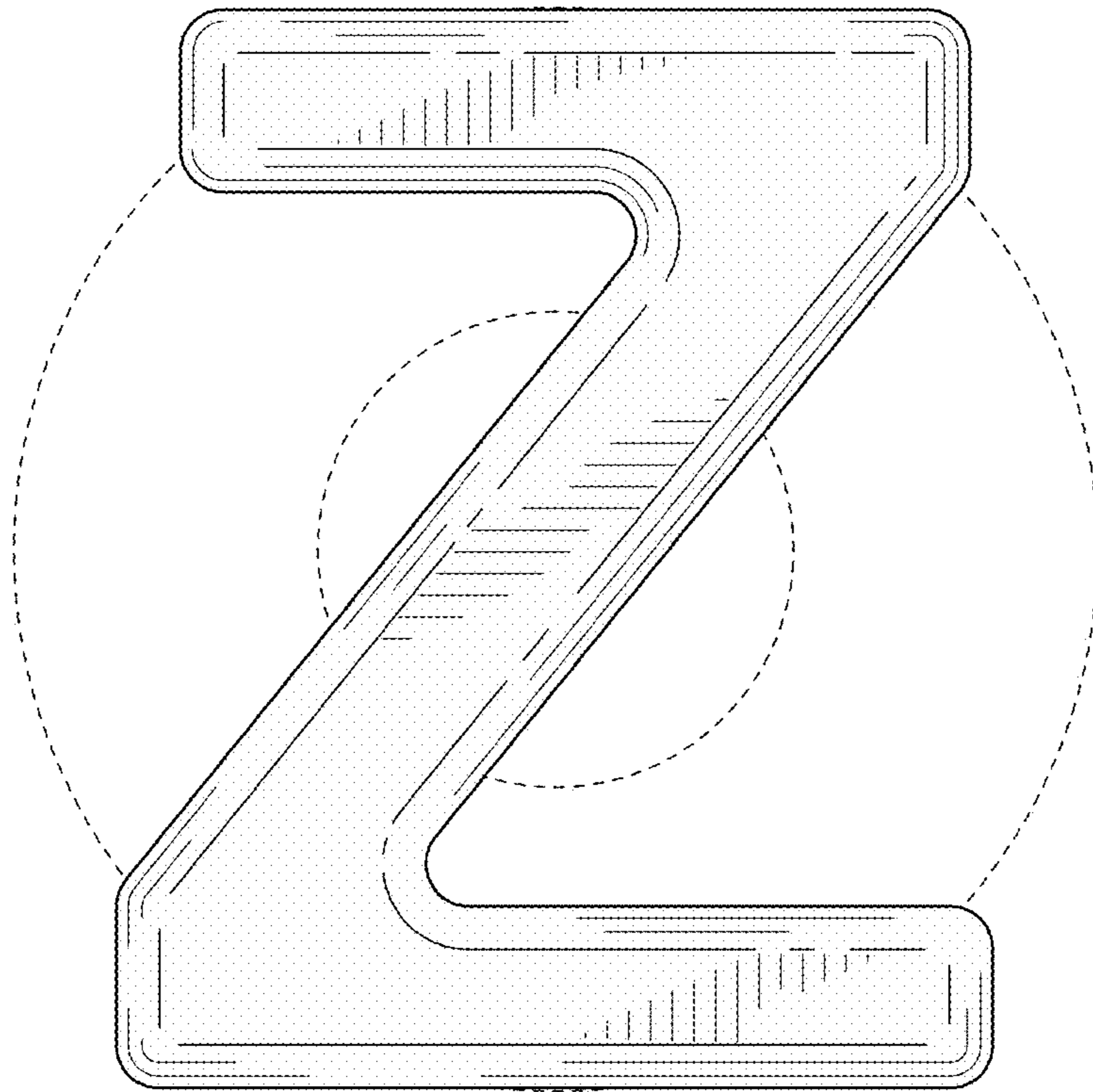


FIG. 202

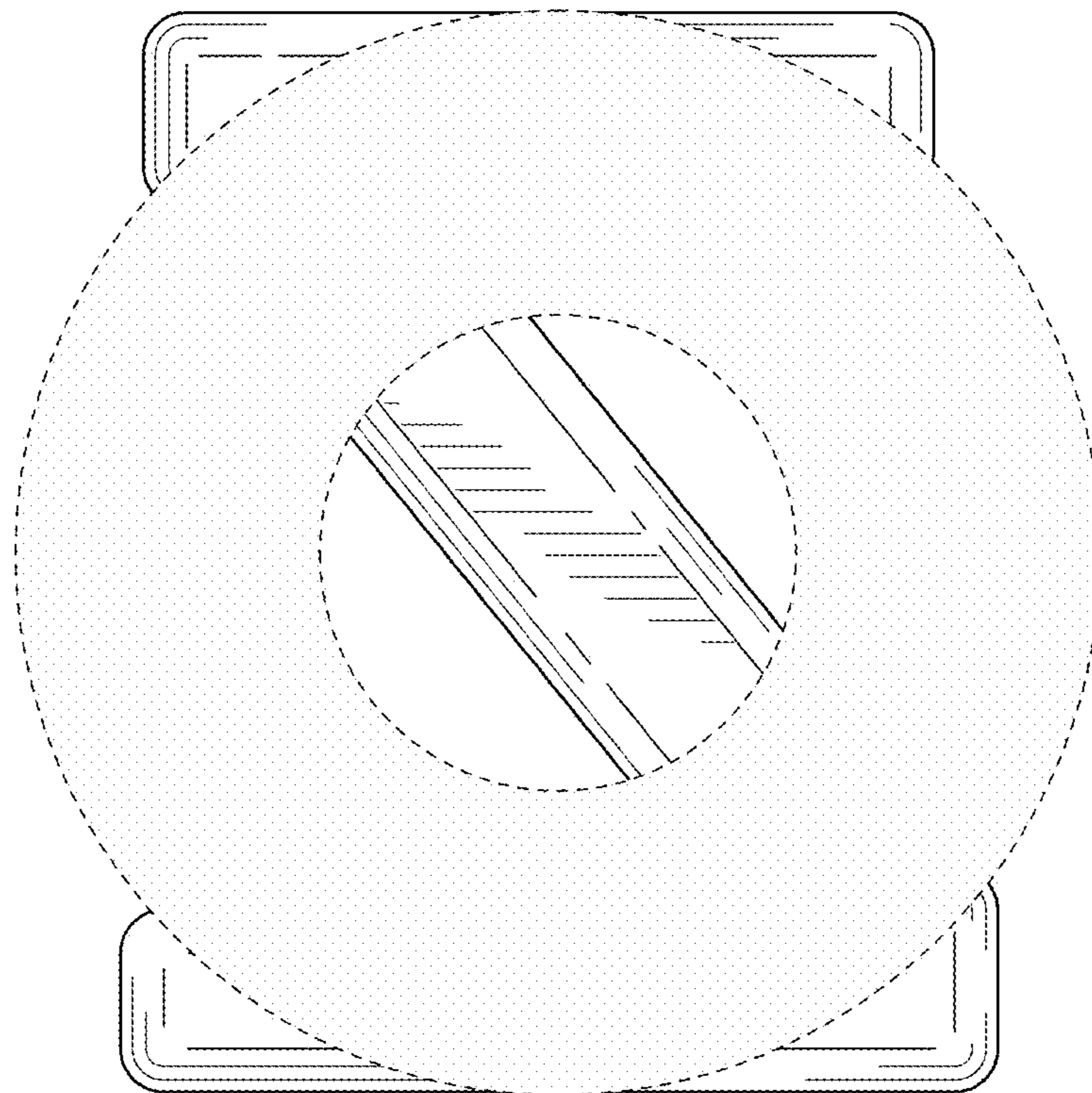


FIG. 203

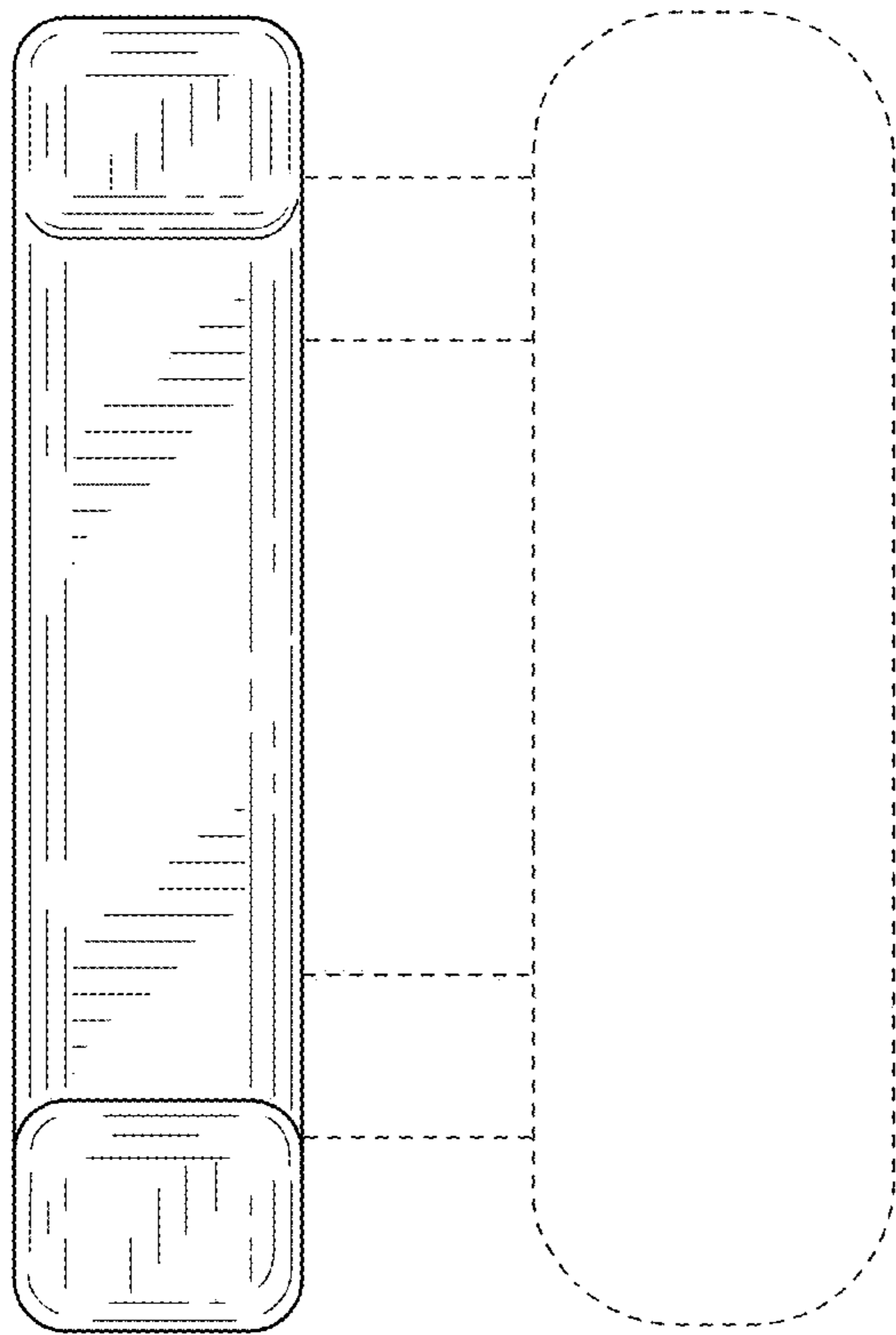


FIG. 204

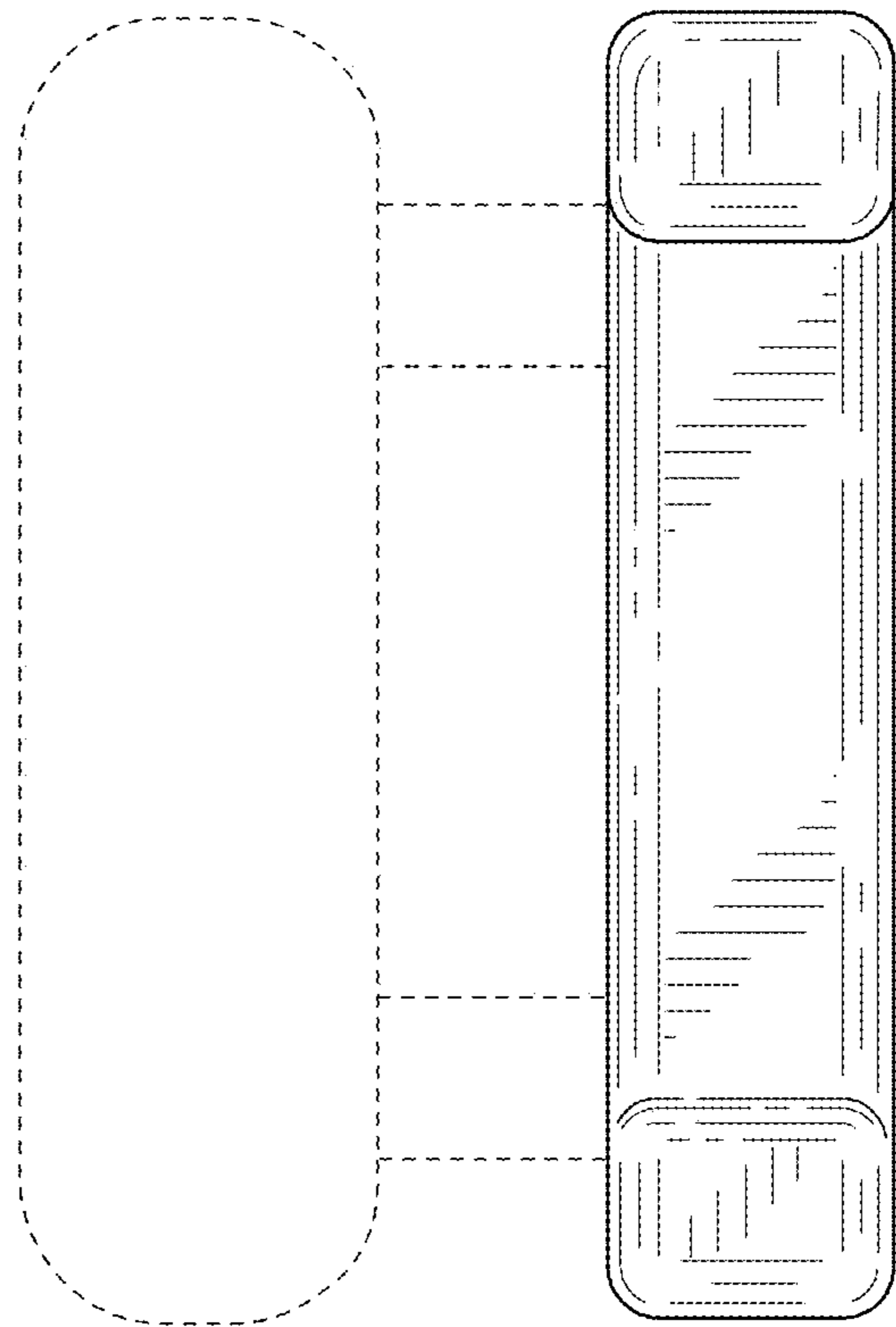


FIG. 205

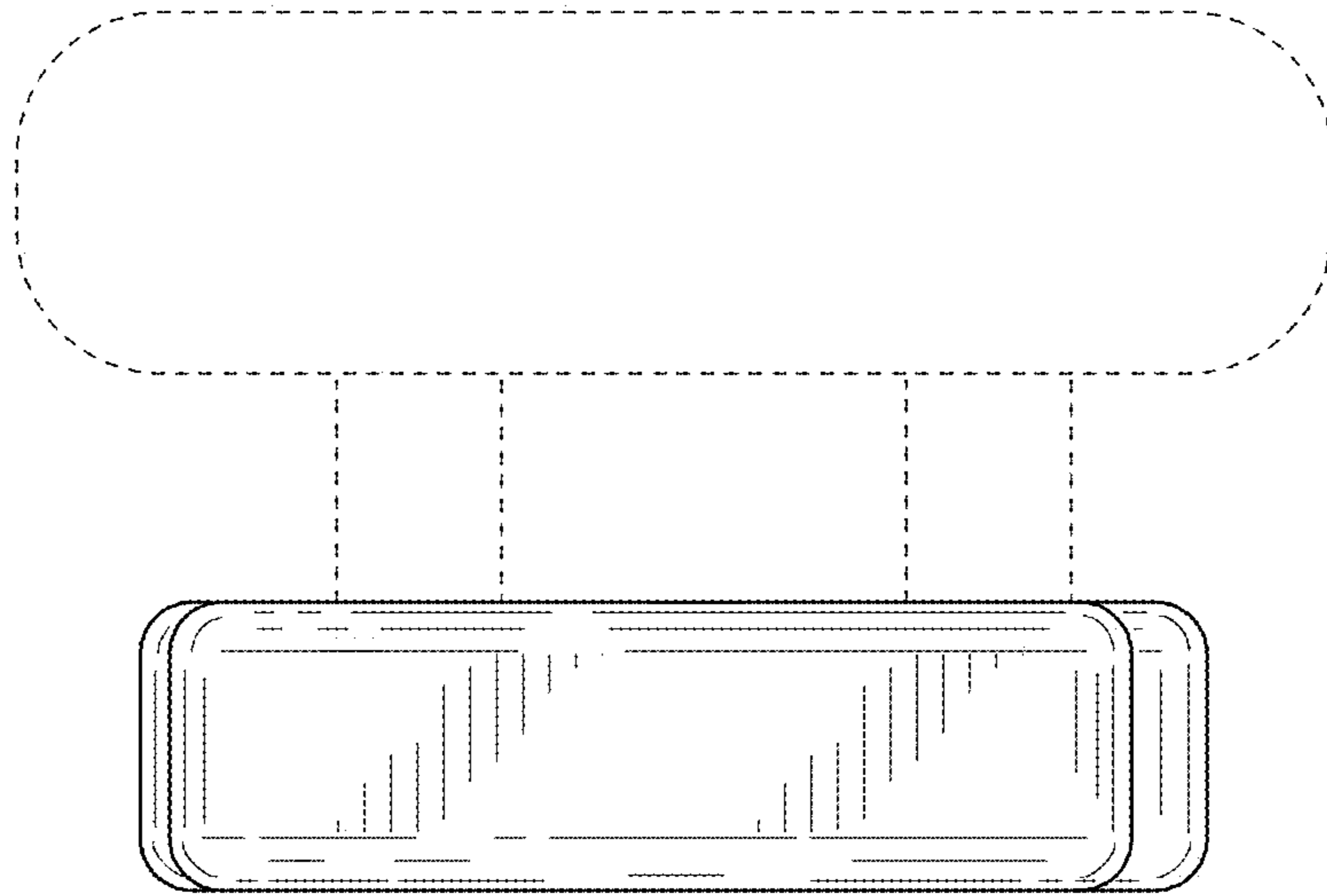


FIG. 206

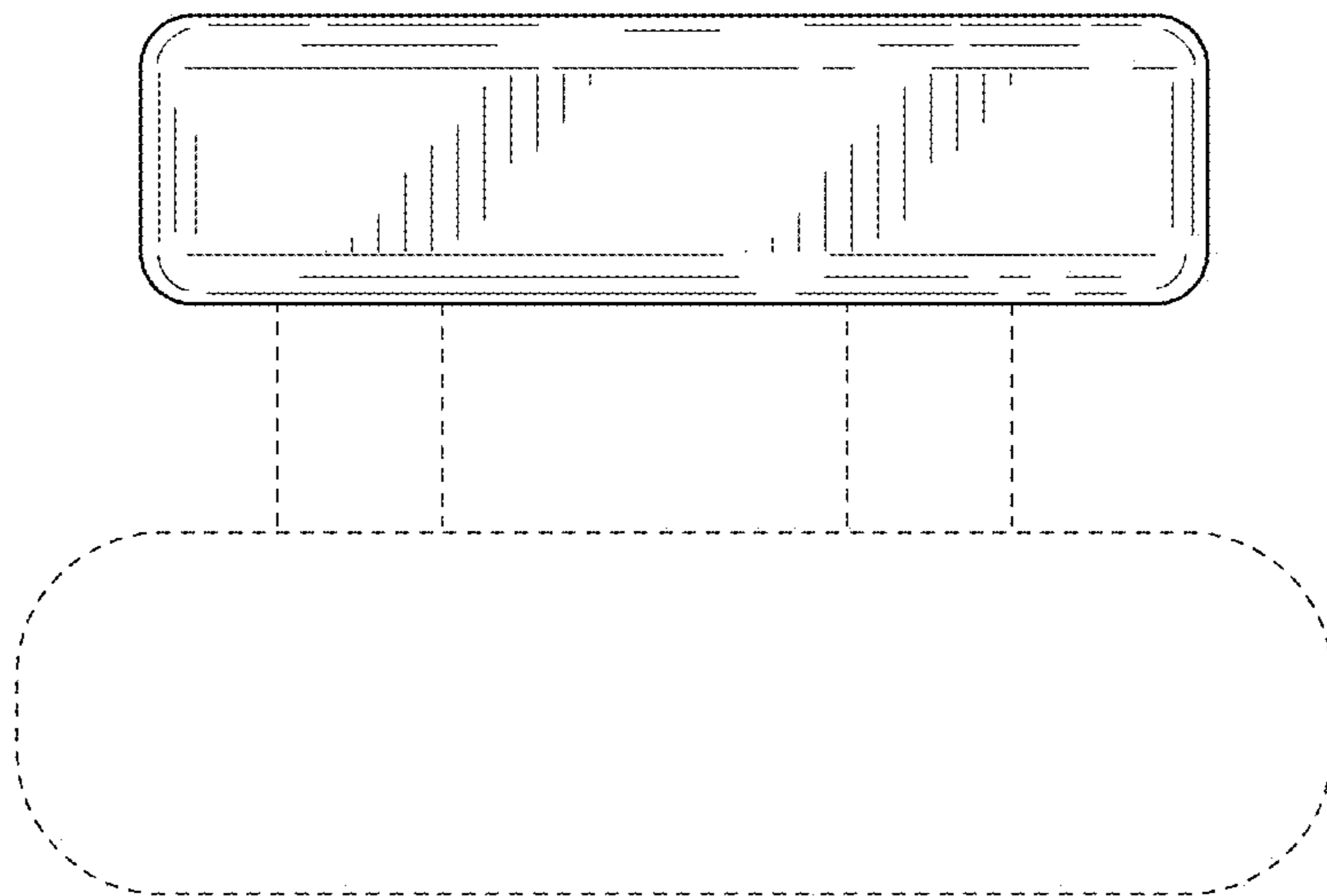


FIG. 207

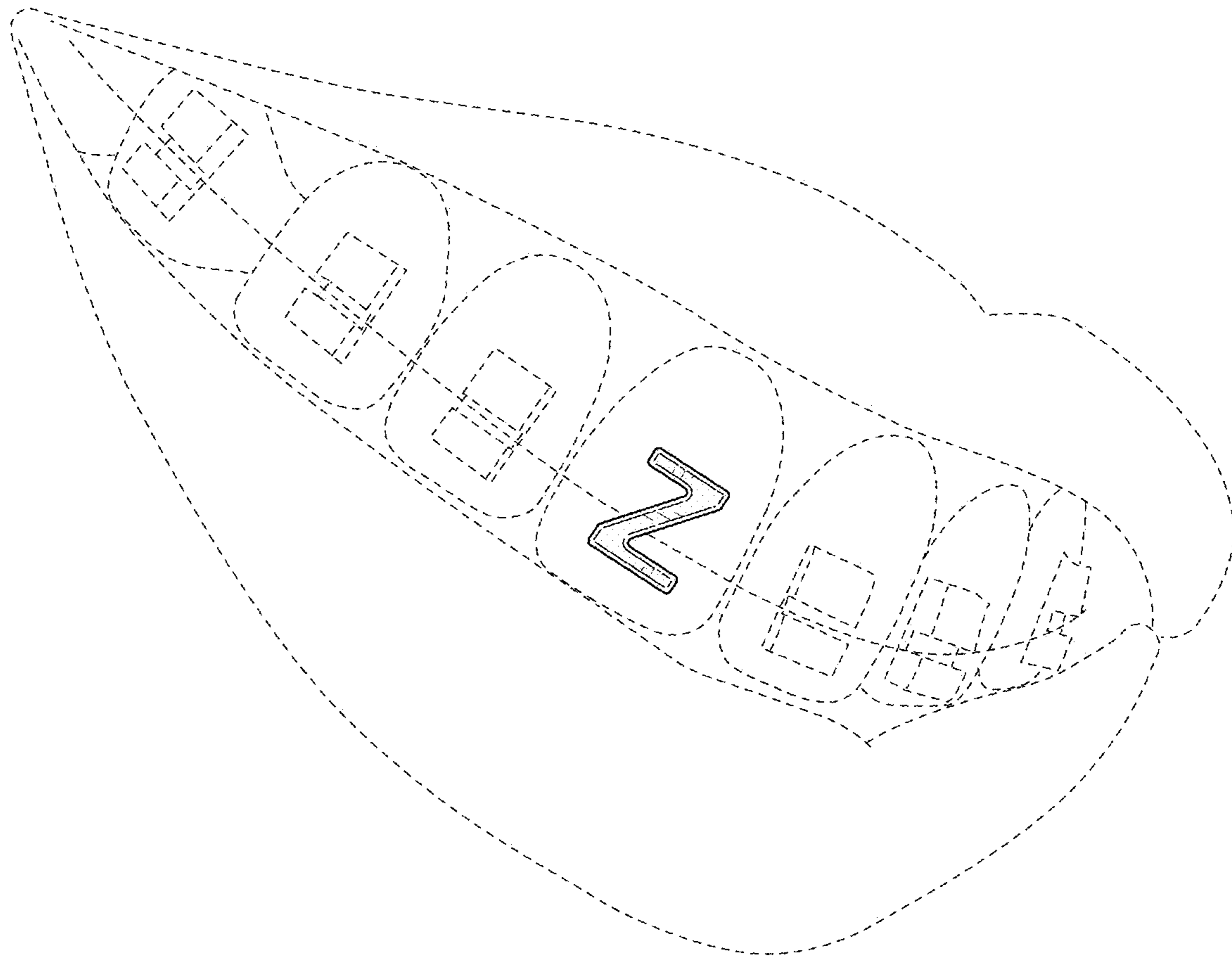


FIG. 208