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

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- (54) **HOLE SAW**
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2,473,077 A 6/1949 Starbuck, Jr.
 2,615,245 A 10/1952 Schaumleffel
 2,662,428 A 12/1953 Mueller
 2,779,361 A 3/1954 McKiff
 2,680,898 A 6/1954 Diosi, Sr.
 (Continued)

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(51) **LOC (13) Cl.** **15-09**

(52) **U.S. Cl.**
USPC **D15/139**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

118,806 A	9/1871	Lafferty et al.
308,842 A	12/1884	Hunt
1,123,730 A	1/1915	Greenfield
1,629,581 A	5/1927	Machlet
2,015,339 A	9/1935	Ellingham
2,062,257 A	11/1936	Douglas et al.
2,237,901 A	4/1941	Chun
2,319,528 A	5/1943	Barbour et al.
2,349,400 A	5/1944	Wendell
2,412,433 A	12/1946	Taylor
2,427,085 A	9/1947	Allison
2,444,099 A	6/1948	Hennessey, Jr.

FOREIGN PATENT DOCUMENTS

CN 2303698 1/1999
 CN 201799668 4/2011
 (Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 29/656,110, filed Jul. 10, 2018, Heath et al.
(Continued)

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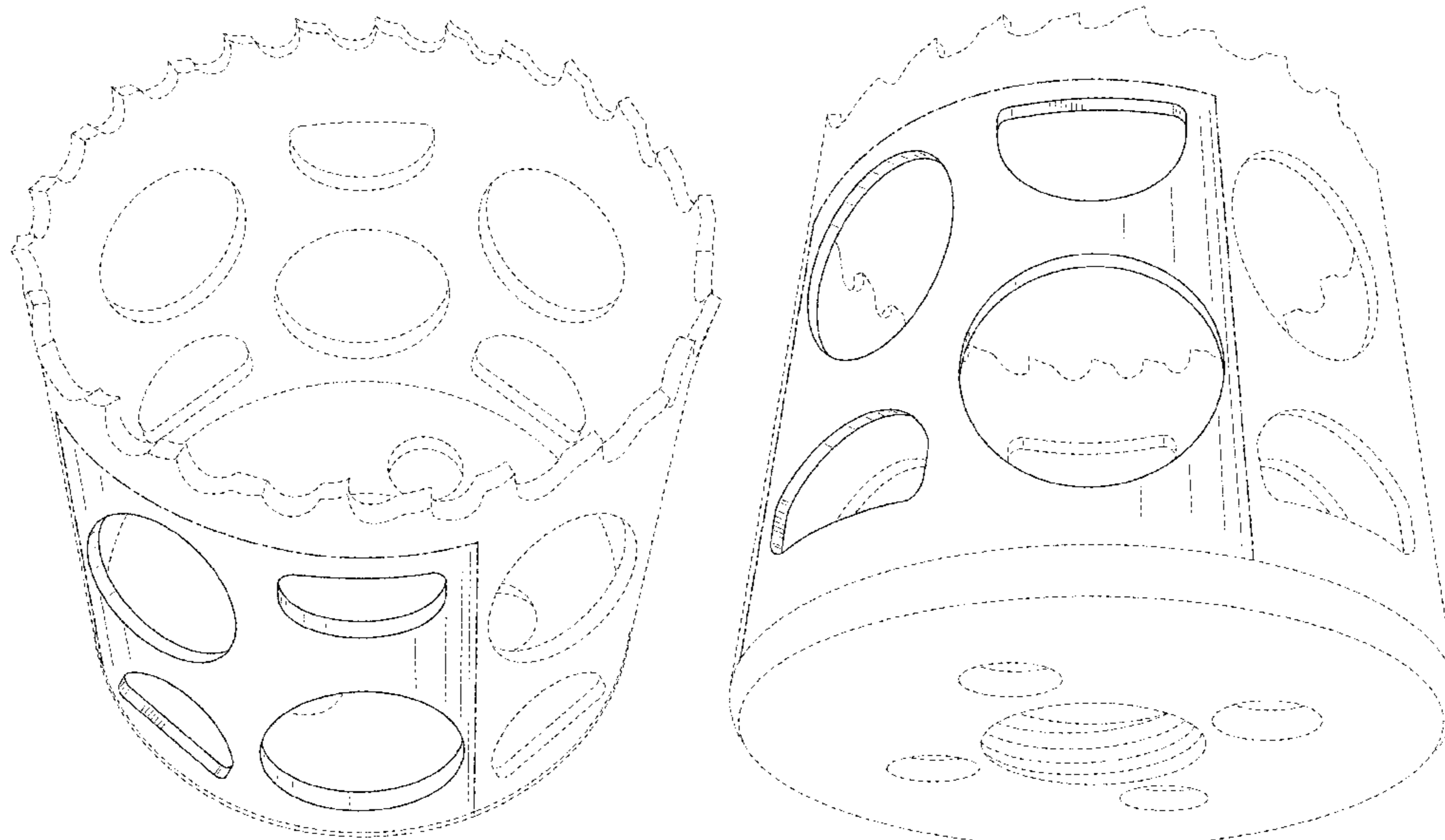
(57) **CLAIM**

We claim the ornamental design for a hole saw, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a hole saw, according to the new design;
FIG. 2 is another perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a left side view thereof;
FIG. 6 is a right side view thereof;
FIG. 7 is a top view thereof; and,
FIG. 8 is a bottom view thereof.
The broken lines show portions of a hole saw which form no part of the claimed design. The “dot-dash” broken lines define the bounds of the claimed design, and form no part thereof.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2,754,864 A	7/1956	Elsy	5,316,416 A	5/1994	Kim
2,800,812 A	7/1957	Mueller et al.	5,353,552 A	10/1994	Hemmings
2,923,180 A	2/1960	Dunn	5,392,759 A	2/1995	Kwang
2,951,683 A	9/1960	Tilden	5,415,504 A	5/1995	Wolf et al.
2,969,122 A	1/1961	Steffes	5,435,672 A	7/1995	Hall et al.
3,025,917 A	3/1962	Knoblauch	5,451,128 A	9/1995	Hattersley
3,074,392 A	1/1963	Fisher	D363,294 S	10/1995	Ellis
3,162,067 A	12/1964	Koons et al.	5,466,100 A	11/1995	Ahluwalia
3,265,104 A	8/1966	Gallo, Sr.	D372,485 S	8/1996	Stone et al.
3,331,455 A	7/1967	Anderson, Jr. et al.	5,556,399 A	9/1996	Huebner
3,374,696 A	3/1968	Trevathan	D376,809 S	12/1996	Stone et al.
3,382,743 A	5/1968	Trevathan	5,649,796 A	7/1997	Durney
3,494,348 A	2/1970	Lindblad	5,651,646 A	7/1997	Banke et al.
3,495,359 A	2/1970	Smith et al.	5,690,452 A	11/1997	Baublits
3,647,310 A	3/1972	Morse	5,700,113 A	12/1997	Stone et al.
3,778,179 A	12/1973	Rivas	D391,974 S *	3/1998	Brutscher D15/139
3,824,026 A	7/1974	Gaskins	D392,297 S *	3/1998	Brutscher D15/139
3,836,278 A	9/1974	McInnes	D394,663 S	5/1998	Stone et al.
3,870,431 A	3/1975	Luckenbi, II et al.	5,762,498 A	6/1998	Gonzalez
3,880,546 A	4/1975	Segal	5,803,677 A	9/1998	Brutscher et al.
3,920,350 A	11/1975	Southall	5,810,524 A	9/1998	Wirth, Jr. et al.
3,973,862 A	8/1976	Segal	5,816,754 A	10/1998	Shallenberger
3,976,387 A	8/1976	Segal	5,842,820 A	12/1998	Lee et al.
3,997,279 A	12/1976	Porter	5,888,036 A	3/1999	Arai et al.
4,072,441 A	2/1978	LaPointe	D408,424 S	4/1999	Schmotzer
4,077,737 A	3/1978	Morse	5,904,454 A	5/1999	Washer
4,078,458 A	3/1978	Berendzen	5,931,615 A	8/1999	Wiker
4,101,238 A	7/1978	Reibetanz et al.	5,934,845 A	8/1999	Frey
4,147,464 A	4/1979	Watson et al.	5,980,169 A	11/1999	Hinch
4,148,593 A	4/1979	Clark	6,007,279 A	12/1999	Malone, Jr.
4,189,015 A	2/1980	Acker et al.	D419,576 S	1/2000	Burcher et al.
4,201,502 A	5/1980	Skendrovic	6,036,410 A	3/2000	Shun'ko
4,203,692 A	5/1980	Jensen	6,050,754 A	4/2000	Thomas
4,225,275 A	9/1980	Elliott	6,113,321 A	9/2000	Mulroy et al.
4,303,357 A	12/1981	Makar	6,126,367 A	10/2000	Reed
4,330,229 A	5/1982	Croydon	6,152,815 A	11/2000	Meerdink et al.
4,422,811 A	12/1983	Ellison et al.	6,167,792 B1	1/2001	Korb et al.
D278,065 S	3/1985	Sydrowski et al.	D438,219 S *	2/2001	Brutscher D15/139
4,527,449 A	7/1985	Sydrowski et al.	6,190,097 B1	2/2001	Thomas
4,529,341 A	7/1985	Greene	6,206,616 B1	3/2001	Smith et al.
D282,369 S	1/1986	de Villiers	6,267,542 B1	7/2001	Salmon
4,565,471 A	1/1986	Negishi et al.	6,269,722 B1	8/2001	Hellbergh
4,568,227 A	2/1986	Hogg	6,273,652 B1	8/2001	Wirth, Jr. et al.
4,582,458 A	4/1986	Korb et al.	D447,495 S	9/2001	Strobel et al.
4,595,321 A	6/1986	Van Dalen	6,341,925 B1	1/2002	Despres
4,605,347 A	8/1986	Jodock et al.	D455,446 S	4/2002	Collins
4,741,651 A	5/1988	Despres	6,409,436 B1	6/2002	Despres
4,755,087 A	7/1988	Parent	6,419,428 B2	7/2002	Ajimi et al.
4,759,667 A	7/1988	Brown	6,428,250 B2	8/2002	Giebmanns
4,760,643 A	8/1988	Juma	6,431,289 B1	8/2002	Potter et al.
D303,118 S	8/1989	Cox	6,443,674 B1	9/2002	Jaconi
4,906,146 A	5/1990	Bowling	6,564,887 B2	5/2003	Hong
4,961,674 A	10/1990	Wang et al.	6,588,310 B2	7/2003	Lee et al.
4,968,189 A	11/1990	Pidgeon	6,588,992 B2	7/2003	Rudolph
4,968,193 A	11/1990	Chaconas et al.	6,599,063 B1	7/2003	Capstran
5,007,777 A	4/1991	Itokazu	D478,105 S	8/2003	Morton et al.
D317,455 S	6/1991	Martin	D478,106 S	8/2003	Morton et al.
5,025,871 A	6/1991	Stewart et al.	D478,339 S	8/2003	Morton et al.
5,049,010 A	9/1991	Oakes	D478,919 S	8/2003	Morton et al.
5,061,126 A	10/1991	Cain et al.	6,619,413 B2	9/2003	Hamilton et al.
D321,894 S	11/1991	Harris	6,641,338 B2	11/2003	Despres
5,069,584 A	12/1991	Obermeier et al.	6,641,395 B2	11/2003	Kumar et al.
5,076,741 A	12/1991	Litlehorn	6,652,203 B1	11/2003	Risen, Jr.
5,096,341 A	3/1992	Despres	6,676,342 B2	1/2004	Mast et al.
5,098,234 A	3/1992	Judkins et al.	6,676,711 B2	1/2004	Omi
5,115,796 A	5/1992	Schweickhardt	6,698,981 B1	3/2004	Beno et al.
5,145,018 A	9/1992	Schimke et al.	6,705,807 B1	3/2004	Rudolph et al.
5,171,111 A	12/1992	Kishimoto	6,746,187 B2	6/2004	Alm
D332,492 S	1/1993	Rosenberg et al.	6,786,684 B1	9/2004	Ecker
D334,016 S	3/1993	Jonsson	D497,547 S	10/2004	Kumakura et al.
5,205,685 A	4/1993	Herbert	6,817,428 B1	11/2004	Miyanaga
D342,270 S	12/1993	Kwang	6,817,936 B1	11/2004	Skeem et al.
5,273,380 A	12/1993	Musacchia	6,820,519 B2	11/2004	Lefebvre
5,288,183 A	2/1994	Chaconas et al.	6,857,831 B2	2/2005	Davis
5,291,806 A	3/1994	Bothum	6,857,832 B2	2/2005	Nygard
			6,863,529 B2	3/2005	Strong et al.
			D504,446 S	4/2005	Kobayashi
			6,884,245 B2	4/2005	Spranza
			6,890,132 B1	5/2005	Baron et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

6,890,133 B2 5/2005 Singh et al.
 6,893,194 B2 5/2005 Jones et al.
 D507,585 S 7/2005 Held
 6,939,092 B2 9/2005 Korb et al.
 6,945,414 B1 9/2005 Stevens et al.
 6,945,850 B2 9/2005 Perrey
 6,948,574 B2 9/2005 Cramer et al.
 6,988,859 B2 1/2006 Borschert et al.
 7,001,116 B2 2/2006 Kozak
 D516,594 S 3/2006 Morton
 7,017,465 B2 3/2006 Dion et al.
 7,018,143 B2 3/2006 Moore
 D519,531 S 4/2006 Kobashi
 D523,398 S 6/2006 Ellis
 D526,670 S 8/2006 Ibey
 7,112,016 B2 9/2006 Nordlin
 D529,525 S 10/2006 Waldron et al.
 7,127,923 B2 10/2006 Biederman et al.
 7,140,451 B2 11/2006 Yoshimizu et al.
 7,160,064 B2 1/2007 Jasso
 7,175,372 B2 2/2007 Davis
 7,201,543 B2 4/2007 Muhlfriedel et al.
 D544,892 S 6/2007 Watson et al.
 7,237,291 B2 7/2007 Redford
 7,237,984 B1 7/2007 Guzda et al.
 7,237,986 B2 7/2007 Anjanappa et al.
 7,246,975 B2 7/2007 Corso et al.
 D551,269 S * 9/2007 Burke, III D15/139
 7,264,428 B2 9/2007 Cossette
 7,267,514 B2 9/2007 Wetzl et al.
 7,275,898 B2 10/2007 Malagnino et al.
 7,306,411 B2 12/2007 Mabuchi et al.
 D559,874 S 1/2008 Kobayashi
 D560,699 S 1/2008 Omi
 D571,835 S 6/2008 Concari et al.
 D573,165 S 7/2008 Grundvig
 D575,808 S 8/2008 Zeiler et al.
 7,438,509 B1 10/2008 Wong et al.
 D580,462 S 11/2008 Liao et al.
 7,476,067 B2 1/2009 Borschert et al.
 D585,919 S 2/2009 Cantlon
 D585,920 S 2/2009 Liao et al.
 7,488,146 B2 2/2009 Brunson
 D588,175 S * 3/2009 Morton D15/139
 D588,884 S 3/2009 Burke, III
 7,513,718 B1 4/2009 Arnold
 7,520,703 B2 4/2009 Rempel
 7,556,459 B2 7/2009 Rempel
 7,637,703 B2 12/2009 Khangar et al.
 D608,801 S 1/2010 Evatt et al.
 D608,802 S 1/2010 Ibarra et al.
 7,658,136 B2 2/2010 Rempel et al.
 7,658,576 B1 2/2010 Buzdum et al.
 7,661,913 B2 2/2010 Nordlin
 7,665,935 B1 2/2010 Garrick et al.
 7,674,078 B1 3/2010 Buzdum et al.
 D615,839 S 5/2010 Richter et al.
 7,766,583 B2 8/2010 Kozak
 7,824,137 B2 11/2010 Vasudeva et al.
 7,850,405 B2 12/2010 Keightley
 D630,656 S 1/2011 Lambert et al.
 7,871,224 B2 1/2011 Dost et al.
 7,892,235 B2 2/2011 Ellis
 D634,343 S * 3/2011 Burke, III D15/139
 7,913,601 B2 3/2011 Petts et al.
 7,934,893 B2 5/2011 Gillissen
 7,938,600 B1 5/2011 Griep et al.
 7,959,371 B2 6/2011 Keightley
 7,967,535 B2 6/2011 Eiserer et al.
 7,988,389 B2 8/2011 Miebach
 8,042,613 B2 10/2011 Hallundbaek et al.
 8,052,356 B2 11/2011 Singh
 D659,176 S 5/2012 Novak et al.
 D664,574 S * 7/2012 Burke, III D15/139
 8,328,474 B2 12/2012 Pangerc et al.

8,328,476 B2 12/2012 O'Keefe et al.
 D683,772 S * 6/2013 Wang D15/139
 D687,472 S 8/2013 Novak et al.
 D690,334 S 9/2013 Zielonka et al.
 D692,470 S * 10/2013 Novak D15/139
 8,573,907 B2 11/2013 Kalomeris et al.
 8,579,554 B2 11/2013 Novak et al.
 8,579,555 B2 11/2013 Novak et al.
 8,646,601 B2 2/2014 Green et al.
 D701,544 S * 3/2014 Novak D15/139
 D706,845 S * 6/2014 Richter D15/139
 D708,650 S * 7/2014 Richter D15/139
 8,790,052 B2 7/2014 Baratta
 D711,441 S 8/2014 Novak et al.
 8,840,344 B2 9/2014 Stenman
 D765,159 S * 8/2016 Novak D15/139
 2002/0037201 A1 3/2002 Despres
 2003/0103822 A1 6/2003 Wirth et al.
 2003/0133765 A1 7/2003 Capriotti
 2003/0146024 A1 8/2003 Cramer et al.
 2003/0177645 A1 9/2003 Flury et al.
 2004/0179911 A1 9/2004 Keightlev
 2005/0031422 A1 2/2005 Tseng
 2005/0105981 A1 5/2005 Byrley et al.
 2007/0020056 A1 1/2007 Burdick
 2007/0059113 A1 3/2007 Capstran
 2007/0160435 A1 7/2007 Chao
 2008/0166195 A1 7/2008 Gentry et al.
 2008/0181738 A1 7/2008 Capriotti et al.
 2008/0187405 A1 8/2008 Nordlin
 2009/0035082 A1 2/2009 Singh
 2009/0044674 A1 2/2009 Neitzell
 2009/0216235 A1 8/2009 Ellis
 2009/0222009 A1 9/2009 Ellis
 2009/0279972 A1 11/2009 Novak et al.
 2009/0326539 A1 12/2009 Neumeyer et al.
 2010/0028098 A1 2/2010 Shaffer
 2010/0034608 A1 2/2010 Nordlin et al.
 2010/0080665 A1 4/2010 Keightley
 2010/0086372 A1 4/2010 Werner
 2010/0092256 A1 4/2010 Khangar et al.
 2010/0145341 A1 6/2010 Ranck et al.
 2010/0278601 A1 11/2010 Beynon
 2010/0310332 A1 12/2010 Serba
 2011/0038679 A1 2/2011 Kozak
 2011/0052340 A1 3/2011 Kozak
 2011/0073337 A1 3/2011 Milbourne et al.
 2011/0170965 A1 7/2011 Novak et al.
 2011/0170966 A1 7/2011 Novak et al.
 2011/0170967 A1 7/2011 Novak et al.
 2011/0170969 A1 7/2011 Novak et al.
 2011/0170970 A1 7/2011 Kalomeris et al.
 2011/0170971 A1 7/2011 Novak et al.
 2011/0170972 A1 7/2011 Zielonka et al.
 2012/0155979 A1 6/2012 Khangar et al.
 2012/0247834 A1 10/2012 Buxbaum et al.
 2014/0023446 A1 1/2014 Piller et al.
 2014/0112728 A1 4/2014 Baratta
 2014/0158569 A1 6/2014 Green et al.
 2014/0271007 A1 9/2014 Richter
 2015/0239051 A1 8/2015 Novak et al.
 2017/0066064 A1 3/2017 Novak et al.
 2017/0232530 A1 8/2017 Novak et al.
 2018/0272441 A1 9/2018 Novak et al.
 2020/0016667 A1 * 1/2020 Heath B23B 51/0453
 2021/0086272 A1 * 3/2021 Heath B23B 51/0406

FOREIGN PATENT DOCUMENTS

DE 2845123 4/1980
 DE 3214209 10/1983
 DE 9204681 8/1992
 DE 29907717 8/1999
 DE 20201300 7/2003
 DE 20318529 4/2005
 DE 102005012026 9/2006
 EP 0612575 8/1994
 EP 0792705 9/1997
 EP 0965407 12/1999

(56)

References Cited

FOREIGN PATENT DOCUMENTS

EP	2070618	6/2009
GB	911093	11/1962
GB	1476437	6/1977
GB	2040741	9/1980
GB	1589293	5/1981
GB	2338438	12/1999
GB	2451947	2/2009
JP	S5689414 A	7/1981
JP	S5987338 A	5/1984
JP	S59131806	9/1984
JP	H04171108	6/1992
JP	H0525013	4/1993
JP	H07124809 A	5/1995
JP	3019727	1/1996
JP	H09192912	7/1997
JP	2003200415	7/2003
JP	2005-144568	6/2005
JP	2008018490	1/2008
KR	2012039417	4/2012
NL	9400753	12/1995

WO	WO9015683	12/1990
WO	WO9731743 A1	9/1997
WO	WO0009284	2/2000
WO	WO2008064409	6/2008
WO	WO 2011/088268	7/2011
WO	WO2011088269	7/2011

OTHER PUBLICATIONS

International Search Report and Written Opinion for International Application No. PCT/US2019/041175, dated Oct. 24, 2019, 13 pages.

Inter Partes Review No. 2015-01461, "Petition for Inter Partes Review of U.S. Pat. No. 8,579,554", dated Jun. 22, 2015 (56 pages).

Inter Partes Review No. 2015-01461, "Petitioner Exhibit 1002 Declaration of James Pangerc", dated Jun. 22, 2015 (11 pages).

Makita Industrial Power Tools, 1998-1999 General Catalog (1998) ISO9002, p. 96.

Makita Industrial Power Tools, 2003-2004 General Catalog (2003) 2 pages.

* cited by examiner

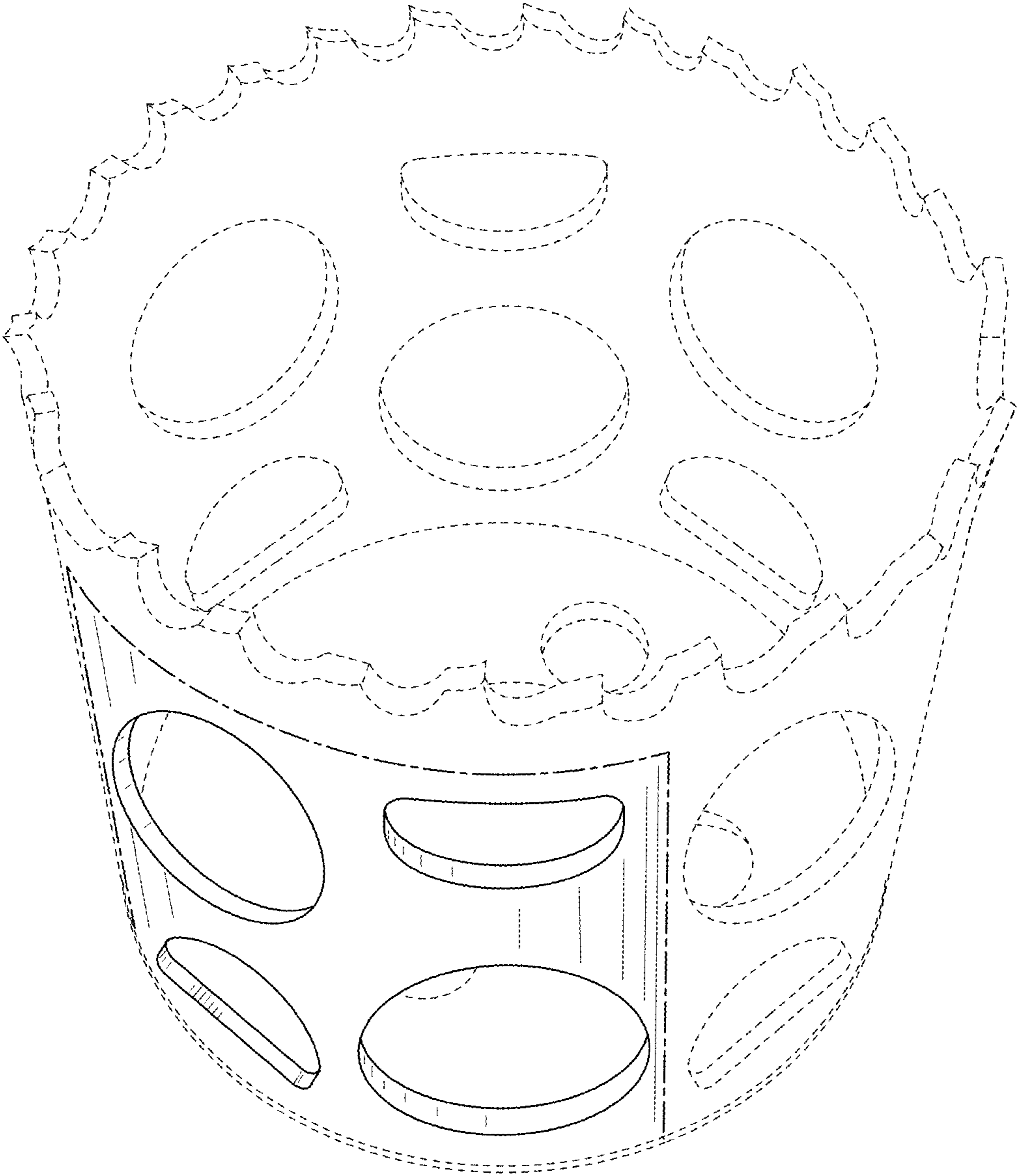


FIG. 1

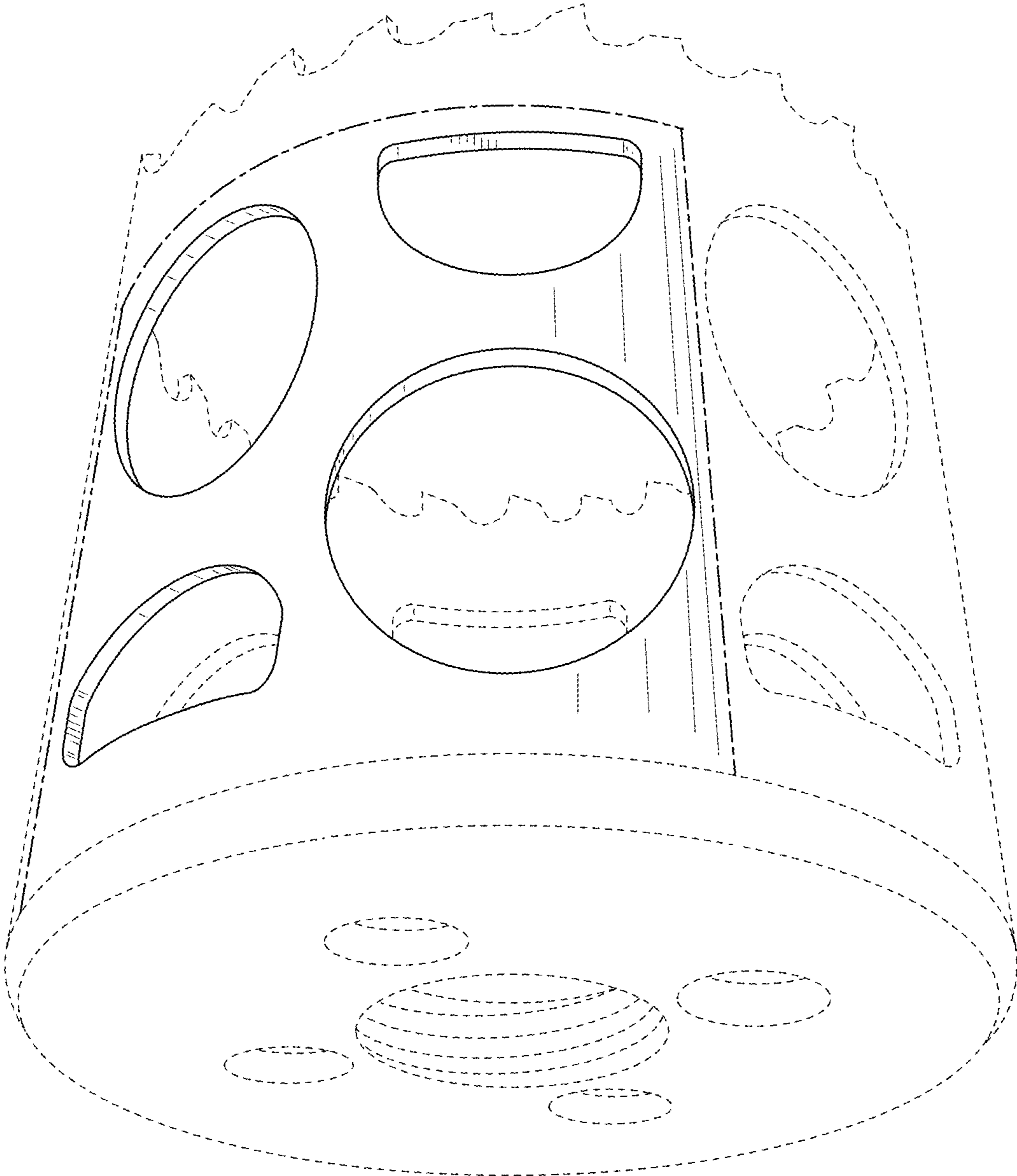


FIG. 2

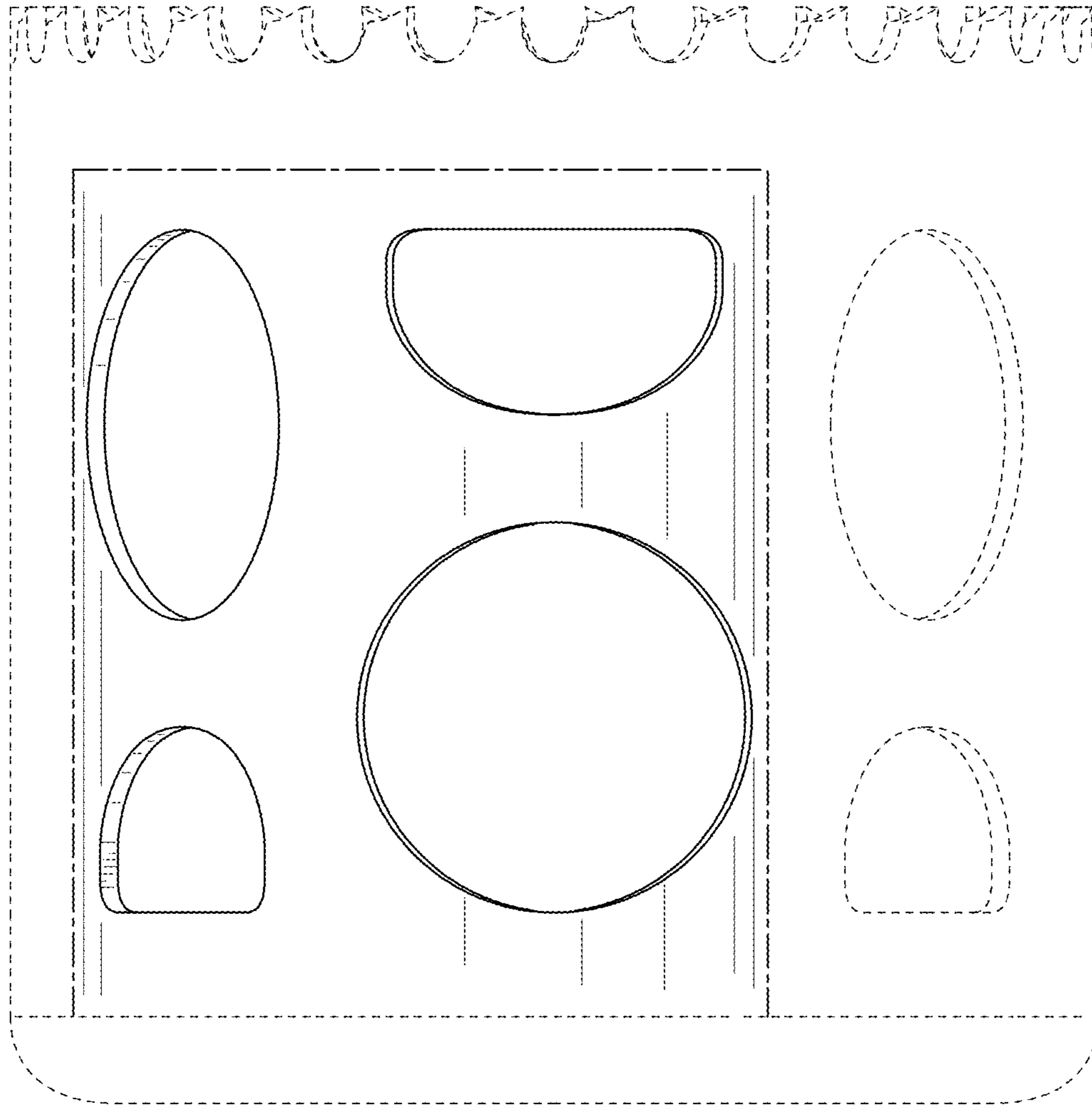


FIG. 3

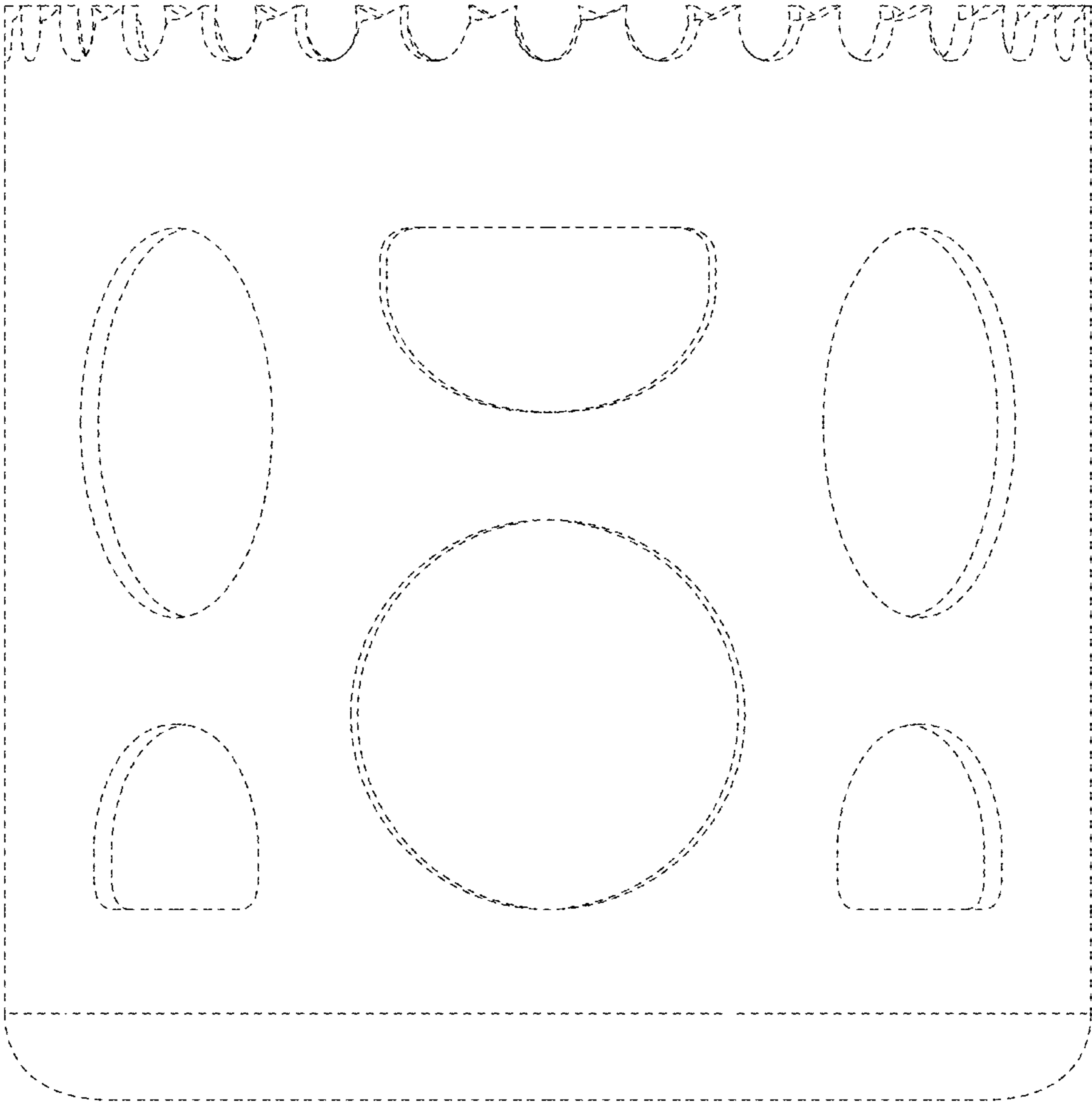


FIG. 4

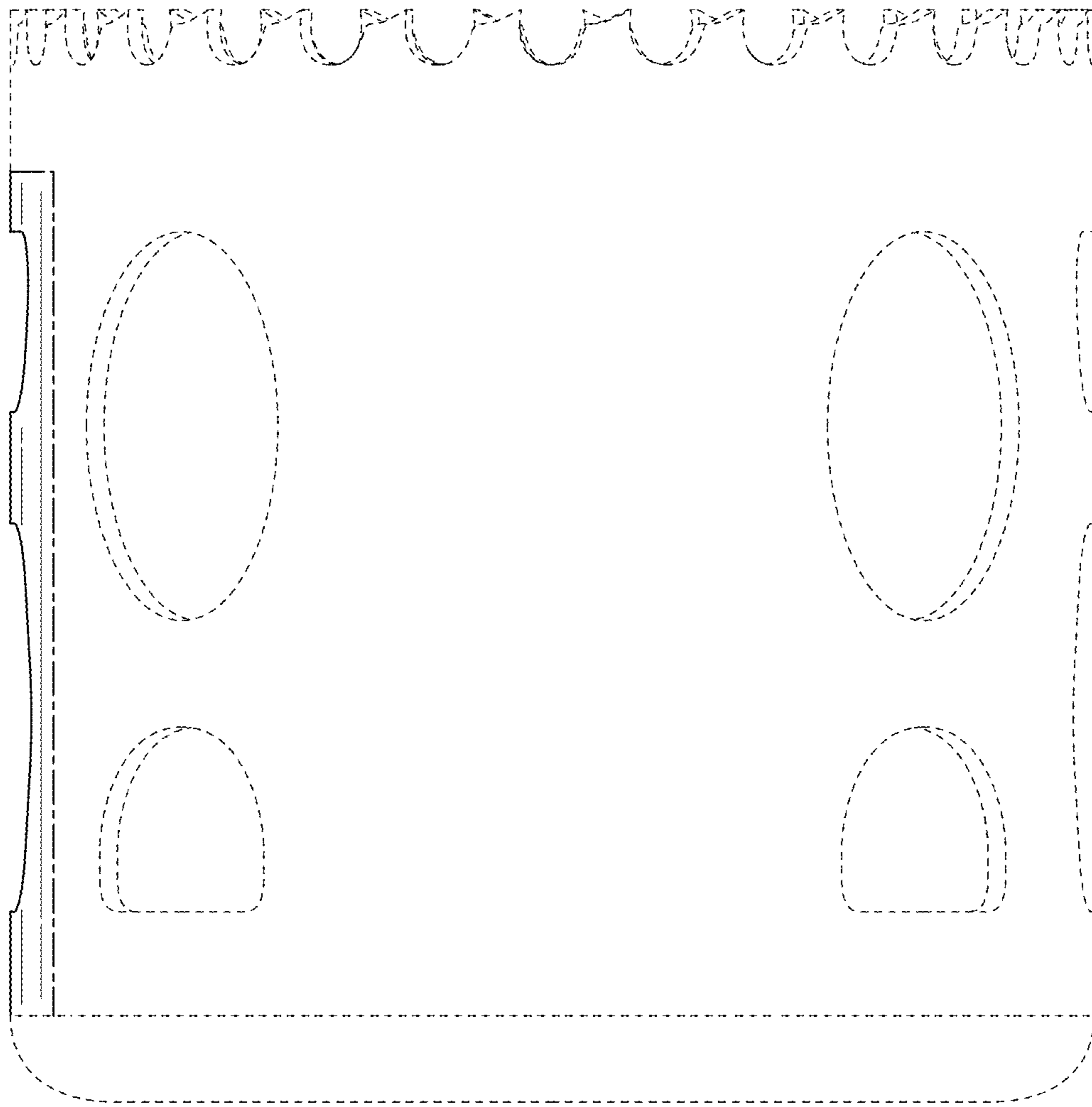


FIG. 5

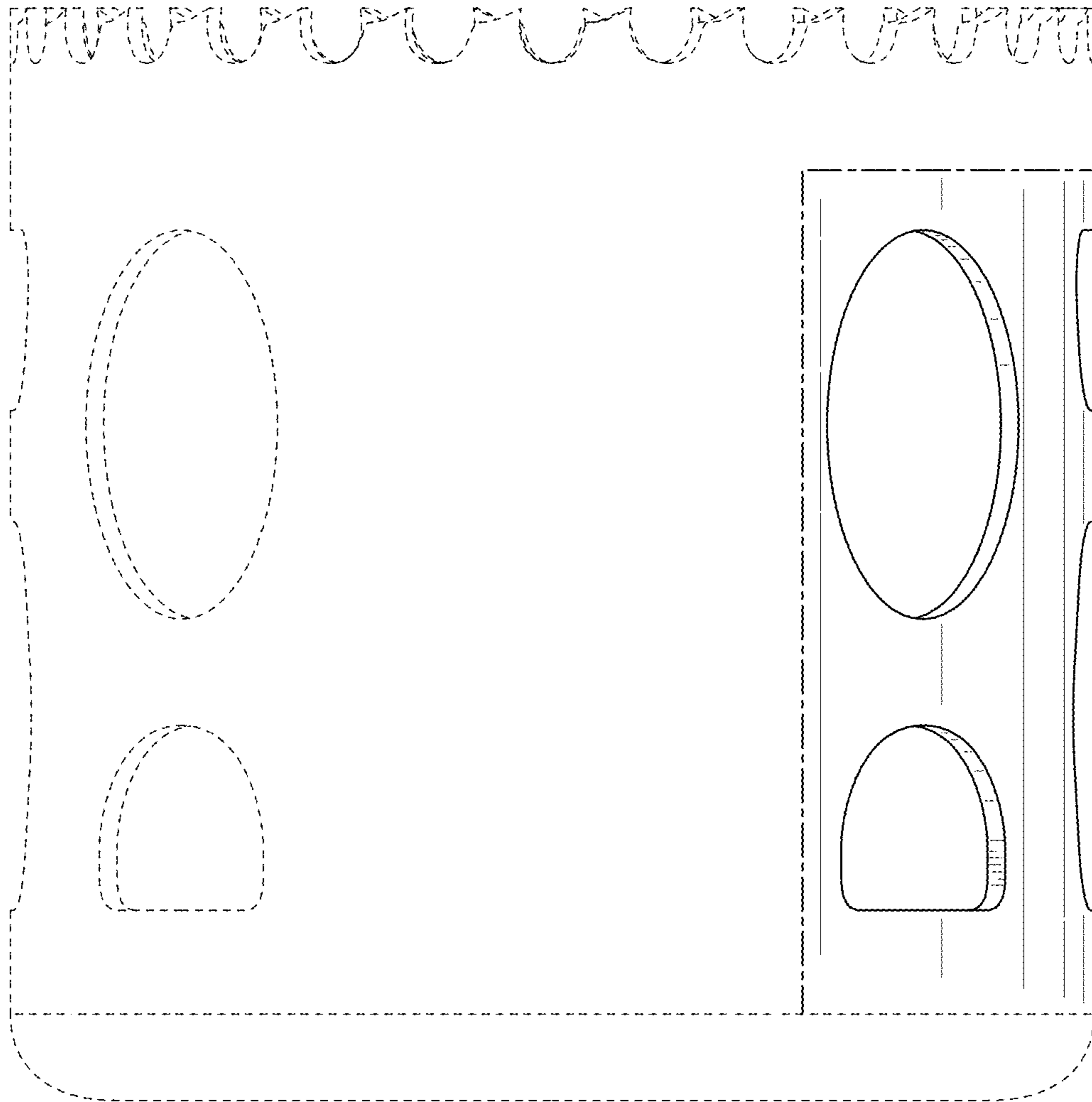


FIG. 6

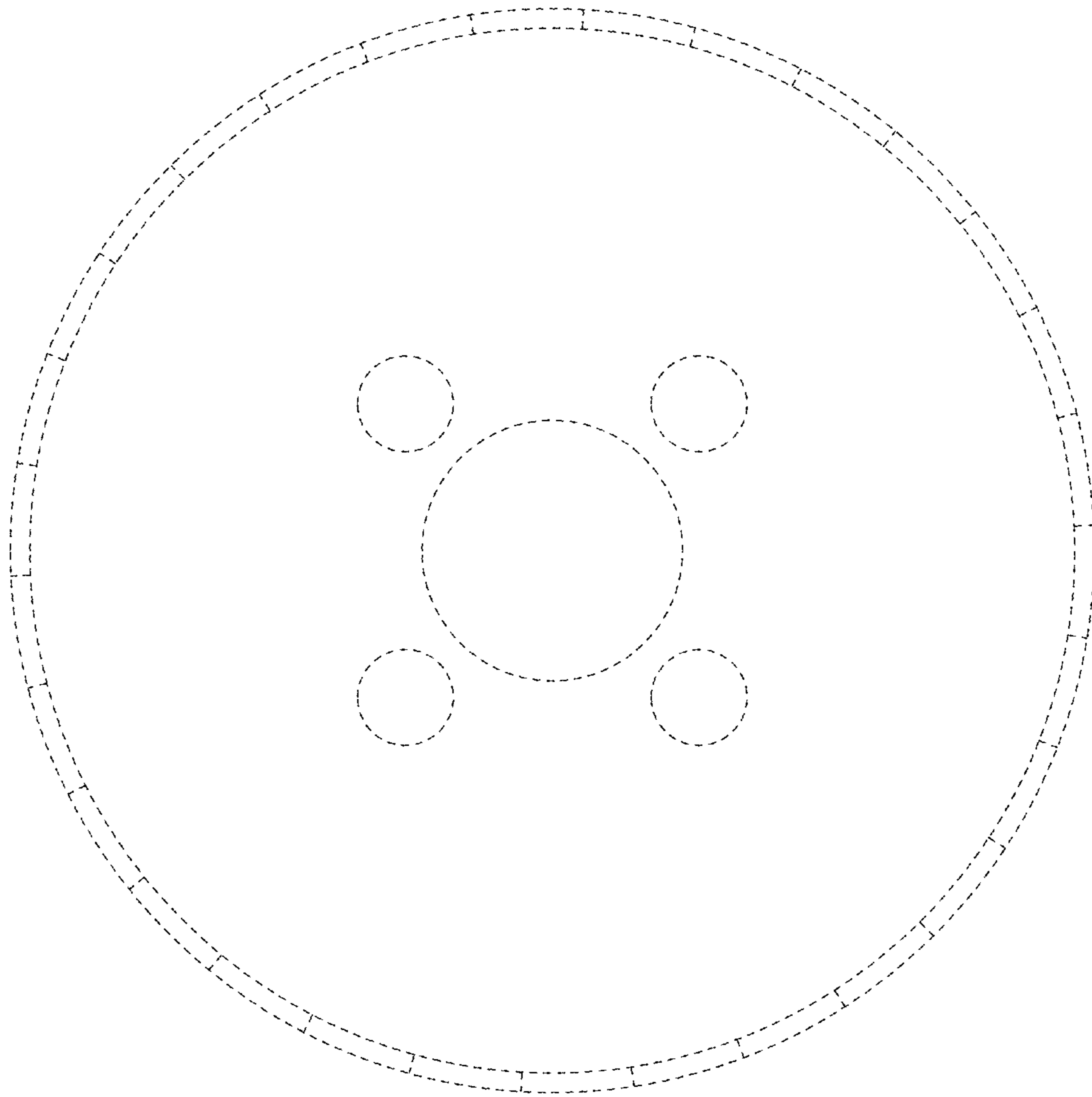


FIG. 7

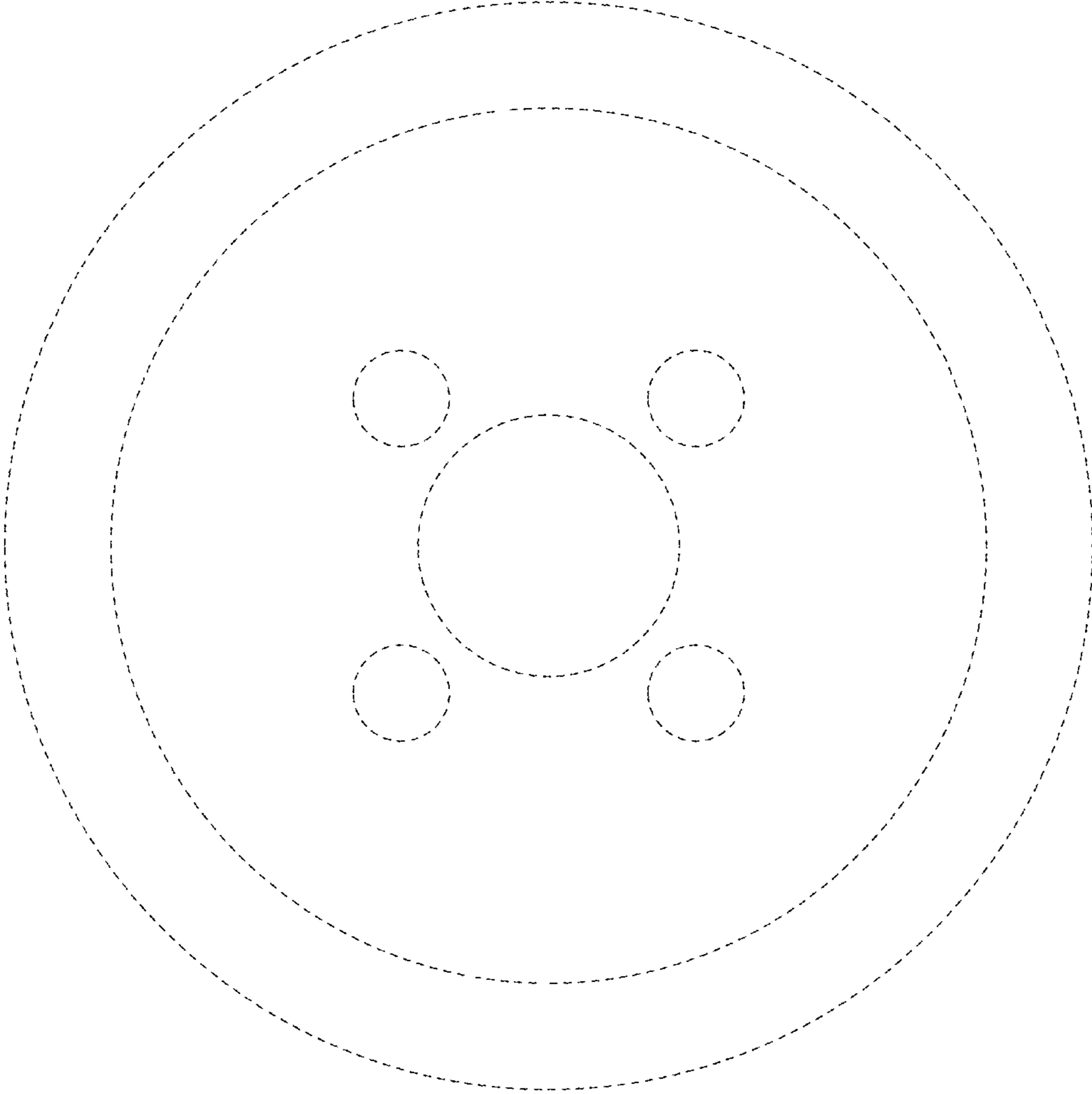


FIG. 8