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(12) **United States Design Patent** (10) **Patent No.:** **US D789,428 S**
Novak et al. (45) **Date of Patent:** **** Jun. 13, 2017**

(54) **HOLE SAW**

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(51) **LOC (10) Cl.** **15-09**

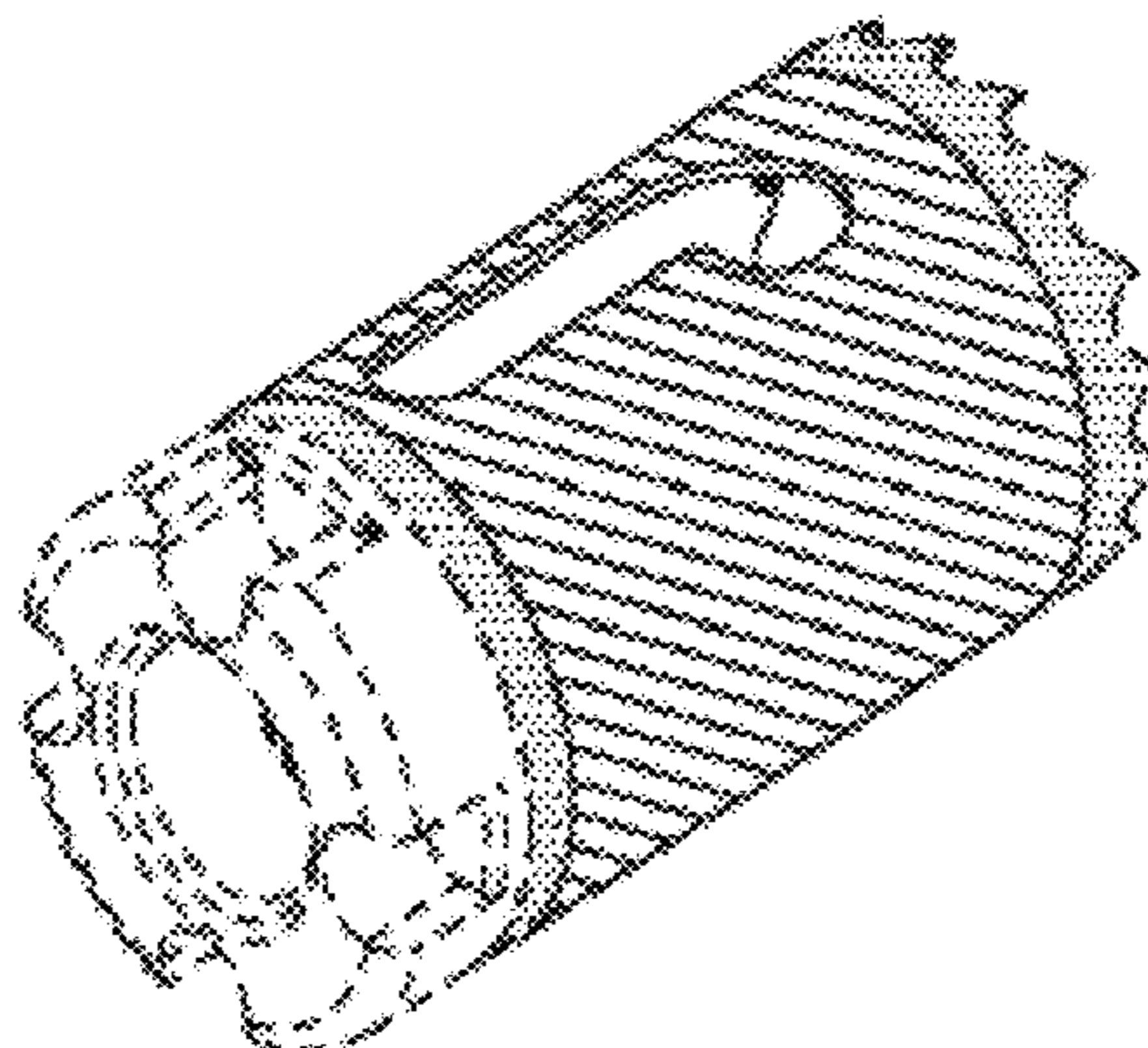
(52) **U.S. Cl.**
USPC **D15/139**

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408/200-225, 1 R
CPC B23B 51/0473; Y10T 408/885; Y10T
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D44,561 S	8/1913	Gouck
1,150,279 A	8/1915	Little
1,194,503 A	8/1916	Jawoisch
1,234,468 A	7/1917	Hamilton
1,494,897 A	5/1924	Freye
1,564,105 A	12/1925	Ouellet
1,713,972 A	5/1929	Lufkin
2,179,029 A	11/1939	Barnes
2,312,176 A	2/1943	Kotowski
2,319,528 A	5/1943	Barbour et al.
D139,299 S	10/1944	Walters
2,427,085 A	9/1947	Allison
2,473,077 A	6/1949	Starbuck, Jr.
2,482,439 A	9/1949	Smith
D160,574 S	10/1950	Carlson
2,633,040 A	3/1953	Schlage
2,779,361 A	1/1957	McKiff
2,794,469 A	6/1957	Shortell
2,817,899 A	12/1957	Wheeler
2,852,967 A	9/1958	Mueller et al.
2,947,206 A	8/1960	Flanagan
3,220,449 A	11/1965	Franklin
3,221,709 A	12/1965	Montemayer
D204,877 S	5/1966	West
3,387,637 A	6/1968	Ferguson et al.
3,593,419 A	7/1971	Hula
3,610,768 A	10/1971	Cochran
3,804,238 A	4/1974	Howard
3,810,514 A	5/1974	Viscovich
3,880,546 A	4/1975	Segal
3,929,050 A	12/1975	Salzwedel
3,973,862 A	8/1976	Segal
4,077,737 A	3/1978	Morse
4,089,112 A	5/1978	Richards
4,180,909 A	1/1980	Lind
D264,800 S	6/1982	Osada
D266,735 S	11/1982	Hahn
4,408,935 A	10/1983	Miyanaga
4,541,758 A	9/1985	Frank et al.



US D789,428 S

D281,979 S	12/1985	Meier	6,883,968 B2 *	4/2005	Fugel	F16C 33/546
D282,369 S	1/1986	de Villiers				384/577
4,595,321 A	6/1986	Van Dalen	6,893,194 B2	5/2005	Jones et al.	
4,631,829 A	12/1986	Schmidt et al.	D508,389 S	8/2005	Polk	
4,651,425 A	3/1987	Livian	6,948,754 B2	9/2005	Huffman et al.	
4,652,185 A	3/1987	Malrick	D516,594 S	3/2006	Morton	
4,660,284 A	4/1987	Decarolis	D517,894 S	3/2006	Kondo et al.	
4,757,612 A	7/1988	Peyrot	7,097,397 B2	8/2006	Keightley	
4,760,643 A	8/1988	Juma	7,101,124 B2	9/2006	Keightley	
D300,897 S	5/1989	Hagberg et al.	7,160,064 B2	1/2007	Jasso	
D303,118 S	8/1989	Cox	7,163,362 B2	1/2007	Keightly	
4,891,884 A	1/1990	Torbet	7,189,036 B1	3/2007	Watson	
5,007,777 A	4/1991	Itokazu	D539,616 S	4/2007	Taylor et al.	
D317,455 S	6/1991	Martin	7,237,291 B2	7/2007	Redford	
5,044,393 A	9/1991	Jiles	7,258,513 B2	8/2007	Gertner	
5,049,010 A	9/1991	Oakes	D551,269 S	9/2007	Burke, III	
5,058,620 A	10/1991	Jiles	D559,044 S	1/2008	Ono	
5,061,126 A	10/1991	Cain et al.	D562,651 S	2/2008	Harkey	
5,082,403 A	1/1992	Sutton et al.	D565,382 S	4/2008	Watanabe	
D324,326 S	3/1992	Lu	D588,175 S	3/2009	Morton	
5,171,111 A	12/1992	Kishimoto	7,553,114 B2	6/2009	Oknestam et al.	
5,205,675 A	4/1993	Hamel	7,556,459 B2	7/2009	Rompel	
5,205,685 A	4/1993	Herbert	7,611,312 B2	11/2009	Miyanaga	
D342,270 S	12/1993	Kwang	7,621,703 B2	11/2009	Keightley	
5,351,595 A	10/1994	Johnston	7,637,703 B2	12/2009	Khangar et al.	
5,360,300 A	11/1994	Sullivan	7,658,136 B2	2/2010	Rompel et al.	
D359,967 S	7/1995	Eichenberg et al.	7,661,913 B2	2/2010	Nordlin	
5,451,128 A	9/1995	Hattersley	D620,035 S	7/2010	Eades	
D368,633 S	4/1996	Nakayama	D624,808 S	10/2010	Krawczak et al.	
5,597,274 A	1/1997	Behner	7,850,405 B2	12/2010	Keightley	
5,651,646 A	7/1997	Banke et al.	D631,732 S	2/2011	Krawczak et al.	
D382,885 S	8/1997	Deiner et al.	7,959,371 B2	6/2011	Keightley	
5,676,501 A	10/1997	Peetz et al.	D644,327 S	8/2011	Singh	
D388,318 S	12/1997	Achterberg et al.	8,052,356 B2	11/2011	Singh	
D391,974 S	3/1998	Brutscher	8,079,787 B2 *	12/2011	Chao	B23B 51/0473
D392,297 S	3/1998	Brutscher				408/197
5,803,677 A	9/1998	Brutscher et al.	D659,176 S *	5/2012	Novak	D15/139
5,803,678 A	9/1998	Korb et al.	D664,574 S *	7/2012	Burke, III	D15/139
5,806,189 A	9/1998	Bailey	8,221,037 B2	7/2012	Neitzell	
5,820,315 A	10/1998	Collard	D687,472 S *	8/2013	Novak	D15/139
D401,822 S	12/1998	Pearlman	D690,334 S *	9/2013	Zielonka	D15/139
D406,220 S	3/1999	Schmidt	D692,470 S *	10/2013	Novak	D15/139
D408,831 S	4/1999	McGregor	8,579,554 B2	11/2013	Novak et al.	
5,904,454 A	5/1999	Washer	8,579,555 B2	11/2013	Novak et al.	
5,906,050 A	5/1999	Gilbert	8,646,601 B2 *	2/2014	Green	B25H 3/003
5,909,930 A	6/1999	Ragland, III et al.				206/373
D412,654 S	8/1999	Gilbert et al.	D701,544 S *	3/2014	Novak	D15/139
D412,655 S	8/1999	Gilbert et al.	8,684,641 B2 *	4/2014	Moffatt	B23B 51/0473
D412,822 S	8/1999	Gilbert et al.				408/1 R
D422,185 S	4/2000	Gold	8,696,268 B2 *	4/2014	Bell	B23B 51/0426
D423,038 S	4/2000	Shimoyama et al.				408/115 R
6,120,220 A	9/2000	Speare	D706,845 S *	6/2014	Richter	D15/139
6,152,661 A	11/2000	Thrasher	D708,650 S *	7/2014	Richter	D15/139
D438,219 S	2/2001	Brutscher	D711,441 S *	8/2014	Novak	D15/139
D443,495 S	6/2001	Wang	9,022,703 B2 *	5/2015	Keightley	B23B 51/0473
D450,552 S	11/2001	Mason				408/204
6,341,925 B1	1/2002	Despres	9,120,162 B2 *	9/2015	Keightley	B23B 51/0433
6,357,973 B2	3/2002	Chao	9,233,424 B2 *	1/2016	Grolimund	B23B 51/0473
D455,057 S	4/2002	Medhurst	9,248,513 B2	2/2016	Lai	
6,363,614 B1	4/2002	Umstead et al.	2002/0037201 A1	3/2002	Despres	
D457,269 S	5/2002	Arey	2002/0121023 A1	9/2002	Kocher et al.	
D459,172 S	6/2002	Bissell	2002/0122703 A1	9/2002	Czyzewski et al.	
6,438,849 B1	8/2002	Wonderley	2003/0084575 A1	5/2003	Chen	
D462,241 S	9/2002	Lothe	2003/0088985 A1	5/2003	Huang	
6,578,268 B2	6/2003	Hawketts	2003/0094078 A1	5/2003	Clanton	
6,588,992 B2	7/2003	Rudolph	2003/0200661 A1	10/2003	Okada	
6,599,063 B1	7/2003	Capstran	2004/0042861 A1	3/2004	Capstran	
D478,105 S	8/2003	Morton et al.	2005/0022390 A1	2/2005	Whitemiller et al.	
D478,106 S	8/2003	Morton et al.	2005/0050734 A1	3/2005	Kesinger	
D478,339 S	8/2003	Morton et al.	2005/0172416 A1	8/2005	Feliciano	
D478,919 S	8/2003	Morton et al.	2005/0193566 A1	9/2005	Brown et al.	
6,623,220 B2	9/2003	Nuss et al.	2005/0214086 A1	9/2005	Nicholas	
6,641,338 B2	11/2003	Despres	2005/0244238 A1	11/2005	Burk	
6,676,343 B2	1/2004	Burk	2005/0262702 A1	12/2005	Hawthorn	
6,708,410 B2	3/2004	Okada	2006/0285934 A1	12/2006	Keightley	
6,718,640 B1	4/2004	John	2007/0003386 A1	1/2007	Keightley	
6,746,187 B2	6/2004	Alm	2007/0110527 A1	5/2007	Jasso	
6,786,684 B1	9/2004	Ecker	2007/0166116 A1	7/2007	Olson et al.	
6,857,831 B2	2/2005	Davis	2007/0227012 A1	10/2007	Constantine et al.	

2007/0245574	A1	10/2007	Green
2007/0269280	A1	11/2007	Vasudeva et al.
2008/0050189	A1	2/2008	Keightley
2008/0131223	A1	6/2008	Jauch
2008/0181738	A1	7/2008	Capriotti et al.
2008/0187405	A1	8/2008	Nordlin
2009/0035082	A1	2/2009	Singh
2009/0106909	A1	4/2009	Tyers
2009/0169317	A1	7/2009	Rae
2010/0067995	A1	3/2010	Keightley
2011/0170965	A1	7/2011	Novak et al.
2011/0170966	A1	7/2011	Novak et al.
2011/0170967	A1	7/2011	Novak et al.
2011/0170970	A1	7/2011	Kalomeris et al.
2011/0170971	A1	7/2011	Novak et al.
2011/0170972	A1	7/2011	Zielonka et al.
2011/0243675	A1	10/2011	Fach
2012/0009032	A1	1/2012	Grussenmeyer
2012/0183366	A1	7/2012	Stenman
2014/0023446	A1	1/2014	Piller et al.

FOREIGN PATENT DOCUMENTS

DE	20101718	U1	5/2001
JP	2006321024		11/2006

OTHER PUBLICATIONS

Petition for Inter Partes Review of U.S. Pat. No. 8,579,554 Under U.S.C. 311-319, filed in Inter Partes Review No. IPR2015-01461 on Jun. 22, 2015.

Exhibit 1002 (Declaration of James Pangerc), filed in Inter Partes Review No. IPR2015-01461 on Jun. 22, 2015.

Exhibit 1006 (Webster's Dictionary Page), filed in Inter Partes Review No. IPR2015-01461 on Jun. 22, 2015.

Exhibit 1007 (Office Action issued in U.S. Appl. No. 12/687,065 on Mar. 5, 2013), filed in Inter Partes Review No. IPR2015-01461 on Jun. 22, 2015.

Decision—Institution of Inter Partes Review, issued in Inter Partes Review No. IPR2015-01461 on Nov. 30, 2015.

Patent Owner's Objections to Evidence Submitted with Petition, filed in Inter Partes Review No. IPR2015-01461 on Dec. 14, 2015.

Patent Owner's Supplemental Objections to Evidence Submitted with Petition, filed in Inter Partes Review No. IPR2015-01461 on Feb. 26, 2016.

Patent Owner's Response, filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Patent Owner's Exhibit List, filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2002 (Response to Non-Final Office Action filed in U.S. Appl. No. 12/687,065 on Jul. 5, 2013), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2003 (Deposition Transcript from Cross-Examination of James Pangerc, taken on Feb. 19, 2016), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2004 (Declaration of Glenn E. Vallee, dated Mar. 15, 2016), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2005 (Curriculum Vitae (CV) of Glenn E. Vallee), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2006 (Declaration of Joseph Thomas Novak, dated Mar. 15, 2016), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2007 (Curriculum Vitae (CV) of Joseph Thomas Novak), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2008 (Declaration of Matthew K. Lacroix, dated Mar. 15, 2016), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2009 (Attachment to Declaration of Matthew K Lacroix), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Exhibit 2010 (Attorney annotated comparison of Figure 4 of the '554 patent and Figure 2 from Redford), filed in Inter Partes Review No. IPR2015/01461 on Mar. 15, 2016.

Exhibit 2011 (White Paper entitled "Lenox Bi-Metal Speed-Slot™ Hole Saw Up to 2X Life in Metal", dated 2011), filed in Inter Partes Review No. IPR2015-01461 on Mar. 15, 2016.

Petition for Inter Partes Review of U.S. Pat. No. 8,579,555 Under U.S.C. 311-319, filed in Inter Partes Review No. IPR2015-01462 on Jun. 22, 2015.

Exhibit 1002 (Declaration of James Pangerc), filed in Inter Partes Review No. IPR2015-01462 on Jun. 22, 2015.

Exhibit 1006 (Webster's Dictionary Page), filed in Inter Partes Review No. IPR2015-01462 on Jun. 22, 2015.

Exhibit 1007 (Office Action issued in U.S. Appl. No. 13/006,080 on Mar. 5, 2013), filed in Inter Partes Review No. IPR2015-01462 on Jun. 22, 2015.

Decision—Institution of Inter Partes Review, issued in Inter Partes Review No. IPR2015-01462 on Nov. 30, 2015.

Petitioner's Request for Rehearing Under 37 C.F.R. 42.71(d), filed in Inter Partes Review No. IPR2015-01462 on Dec. 9, 2015.

Patent Owner's Objections to Evidence Submitted with Petition, filed in Inter Partes Review No. IPR2015-01462 on Dec. 14, 2015.

Decision—Request for Rehearing, issued in Inter Partes Review No. IPR2015-01462 on Jan. 15, 2016.

Patent Owner's Supplemental Objections to Evidence Submitted with Petition, filed in Inter Partes Review No. IPR2015-01462 on Feb. 26, 2016.

Patent Owner's Response, filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Patent Owner's Exhibit List, filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2002 (Response to Non-Final Office Action filed in U.S. Appl. No. 13/006,080 on Jul. 5, 2013), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2003 (Deposition Transcript from Cross-Examination of James Pangerc, taken on Feb. 19, 2016), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2004 (Declaration of Glenn E. Vallee, dated Mar. 15, 2016), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2005 (Curriculum Vitae (CV) of Glenn E. Vallee), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2006 (Declaration of Joseph Thomas Novak, dated Mar. 15, 2016), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2007 (Curriculum Vitae (CV) of Joseph Thomas Novak), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

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Exhibit 2009 (Attachment to Declaration of Matthew K Lacroix), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2010 (Attorney annotated comparison of Figure 4 of the '554 patent and Figure 2 from Redford), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Exhibit 2011 (White Paper entitled "Lenox Bi-Metal Speed-Slot™ Hole Saw Up to 2X Life in Metal", dated 2011), filed in Inter Partes Review No. IPR2015-01462 on Mar. 15, 2016.

Office Action issued in U.S. Appl. No. 12/687,078 on Apr. 11, 2016.

International Search Report and Written Opinion for International Application No. PCT/US2011/021219 mailed Apr. 26, 2011.

Petition for Inter Partes Review of U.S. Pat. No. 8,579,554, Jun. 22, 2015. 55 pages.

Office Action mailed Mar. 5, 2013 for U.S. Appl. No. 12/687,065, 26 pages.

"Fulcrum." Webster's Dictionary. Merriam-Webster, 2009. p. 139.

Declaration of James Pangerc from Petition for Inter Partes Review of U.S. Pat. No. 8,579,554. Signed and dated Jun. 22, 2015. 11 pages.

Final Written Decision, issued in Inter Partes Review No. IPR2015-01461 on Sep. 29, 2016.

Final Written Decision, issued in Inter Partes Review No. IPR2015-01462 on Sep. 29, 2016.

William Henry, B04 Pikatti Knife, 2005, Available at <http://www.onlyfineknives.com/knife.php?k=224451>, Accessed Nov. 6, 2008.

Flexible Bi-Metal Hacksaw Blade H888, 2008, Available at http://www.alibaba.com-product-gs/210815366/Flexible_bi_metal_hacksaw_blade_H888.html, Accessed Nov. 6, 2008.
Bi-Metal Hole Saw 825-2 Package, Greenlee Textron Inc., Rockford, Illinois, 2003.

* cited by examiner

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(74) *Attorney, Agent, or Firm* — Eversheds Sutherland
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(57) **CLAIM**

The ornamental design for a hole saw, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a hole saw showing the present invention, wherein the diagonal cross-hatched portion of the hole saw indicates a color and the stippled portion of the hole saw indicates another color;
FIG. 2 is a front elevational view thereof, the rear elevational view being identical;
FIG. 3 is a left side elevational view thereof; the right side elevational view being identical;
FIG. 4 top plan view thereof; and

FIG. 5 is a bottom plan view thereof.

FIG. 6 is a perspective view of a second embodiment of a hole saw showing the present invention, wherein the diagonal cross hatched portion of the hole saw indicates a color and the stippled portion of the hole saw indicates another color;

FIG. 7 is a front elevational view thereof, the rear elevational view being identical;

FIG. 8 is a left side elevational view thereof; the right side elevational view being identical;

FIG. 9 top plan view thereof; and

FIG. 10 is a bottom plan view thereof.

FIG. 11 is a perspective view of a third embodiment of a hole saw showing the present invention, wherein the diagonal cross-hatched portion of the hole saw indicates a color and the stippled portion of the hole saw indicates another color;
FIG. 12 is a front elevational view thereof, the rear elevational view being identical;

FIG. 13 is a left side elevational view thereof; the right side elevational view being identical;

FIG. 14 top plan view thereof; and,

FIG. 15 is a bottom plan view thereof.

The broken lines in the figures show structure or boundaries that are not part of the claimed design.

1 Claim, 3 Drawing Sheets

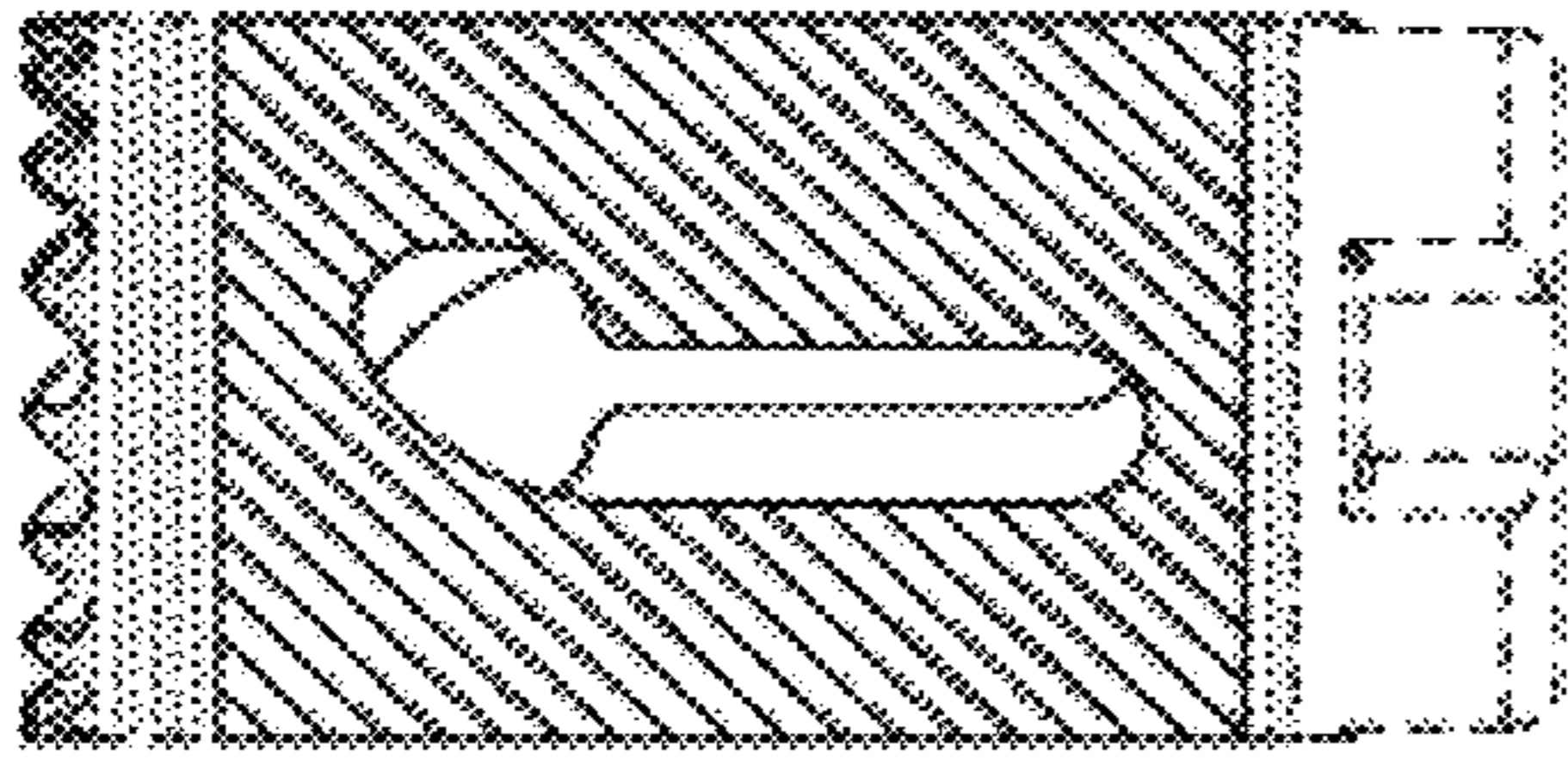


FIG. 1

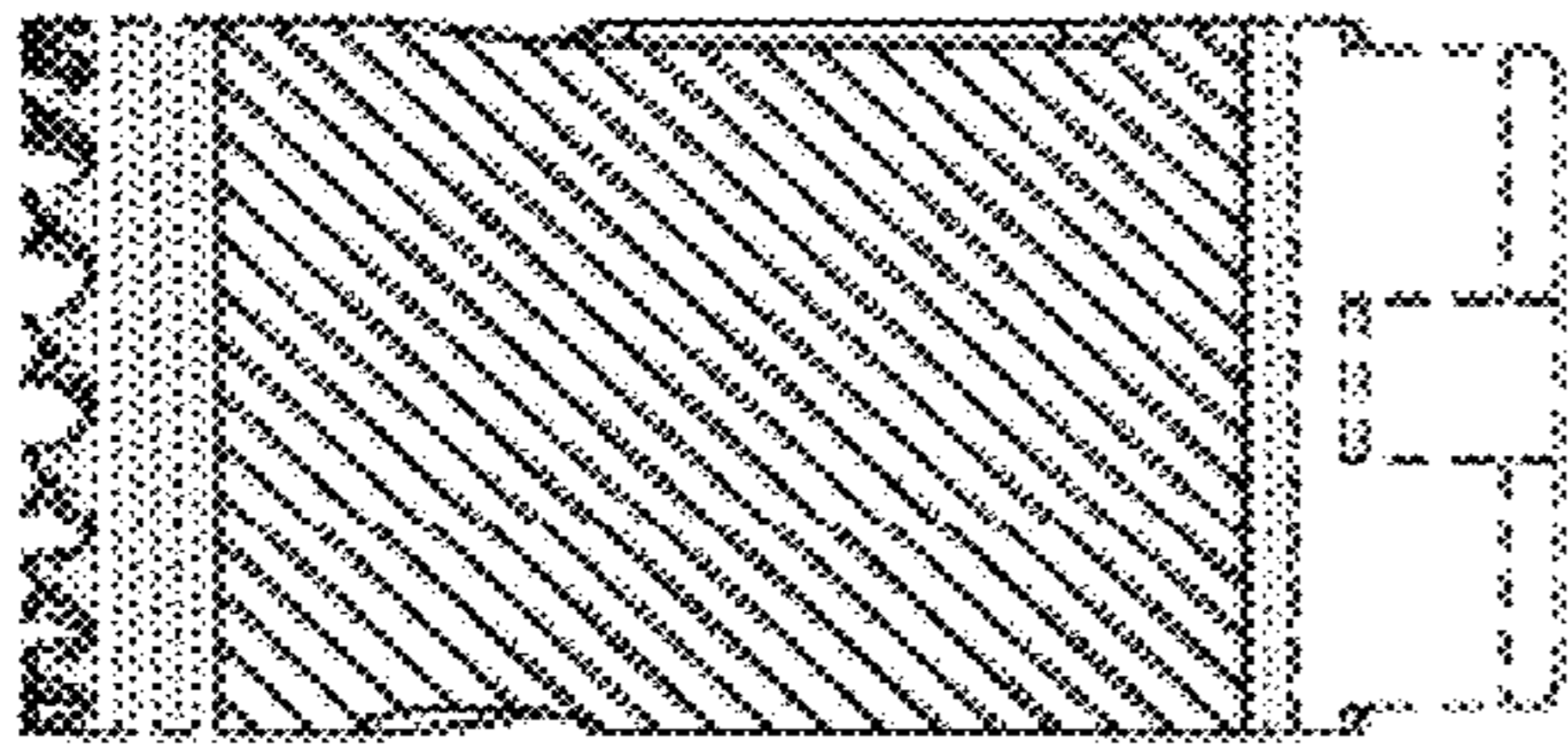


FIG. 2

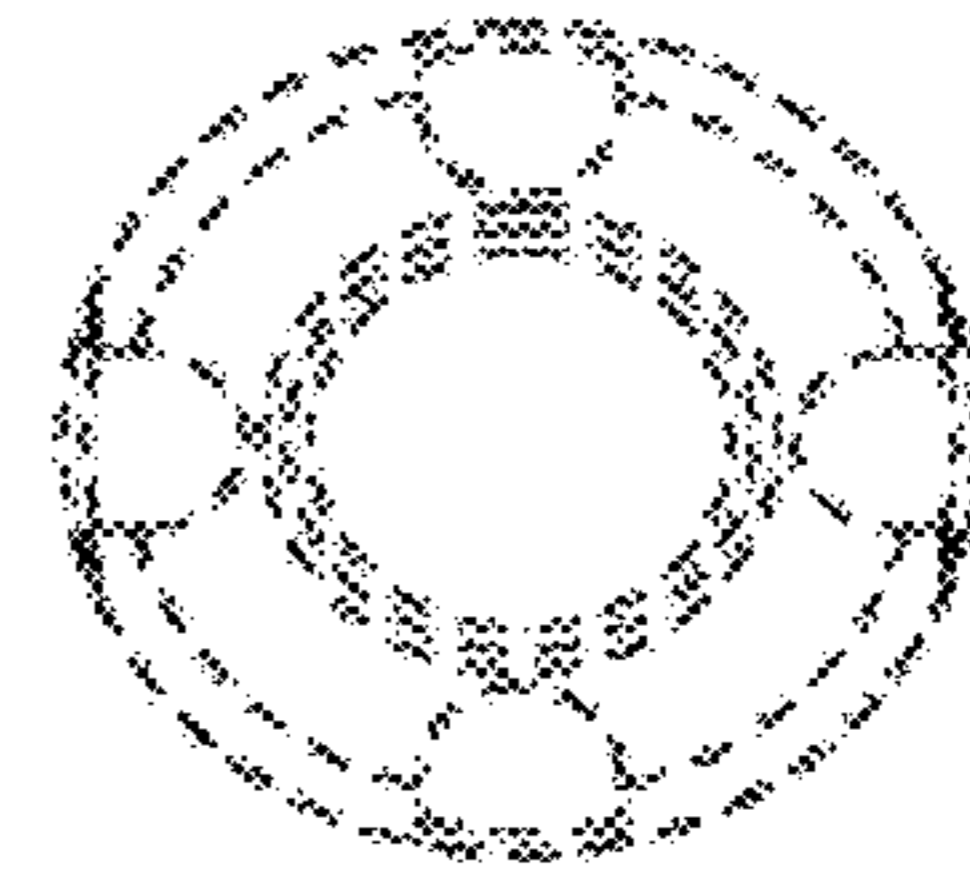


FIG. 3

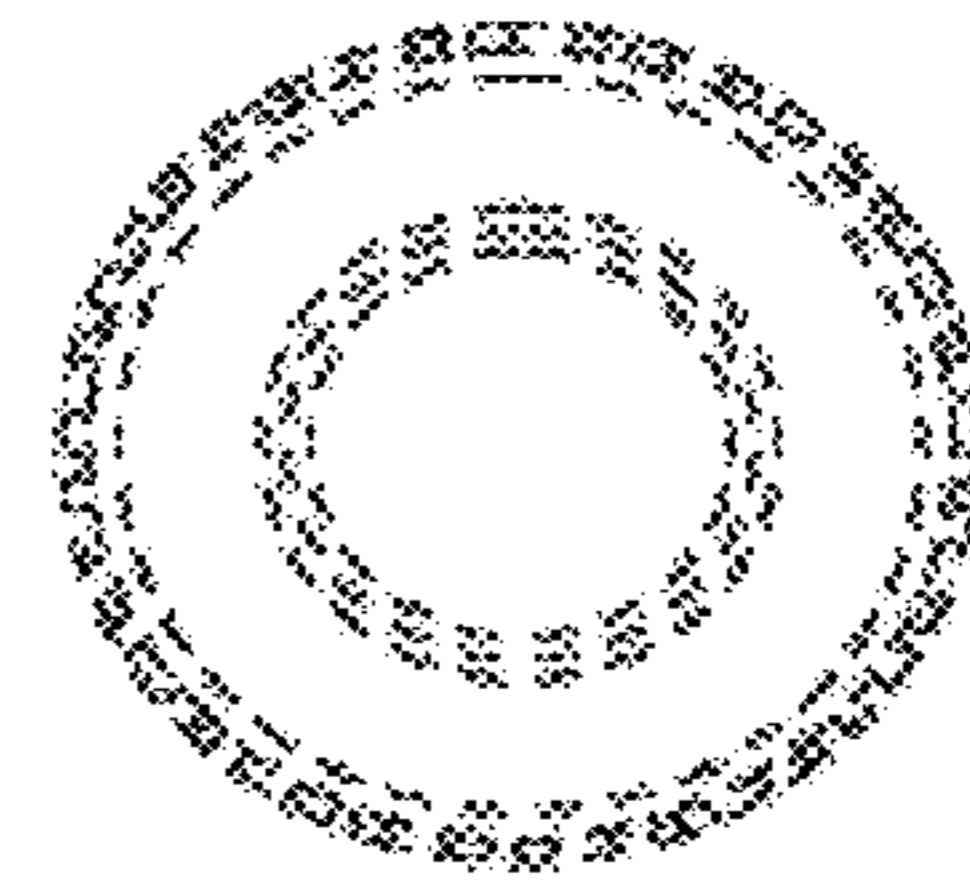


FIG. 4

FIG. 5

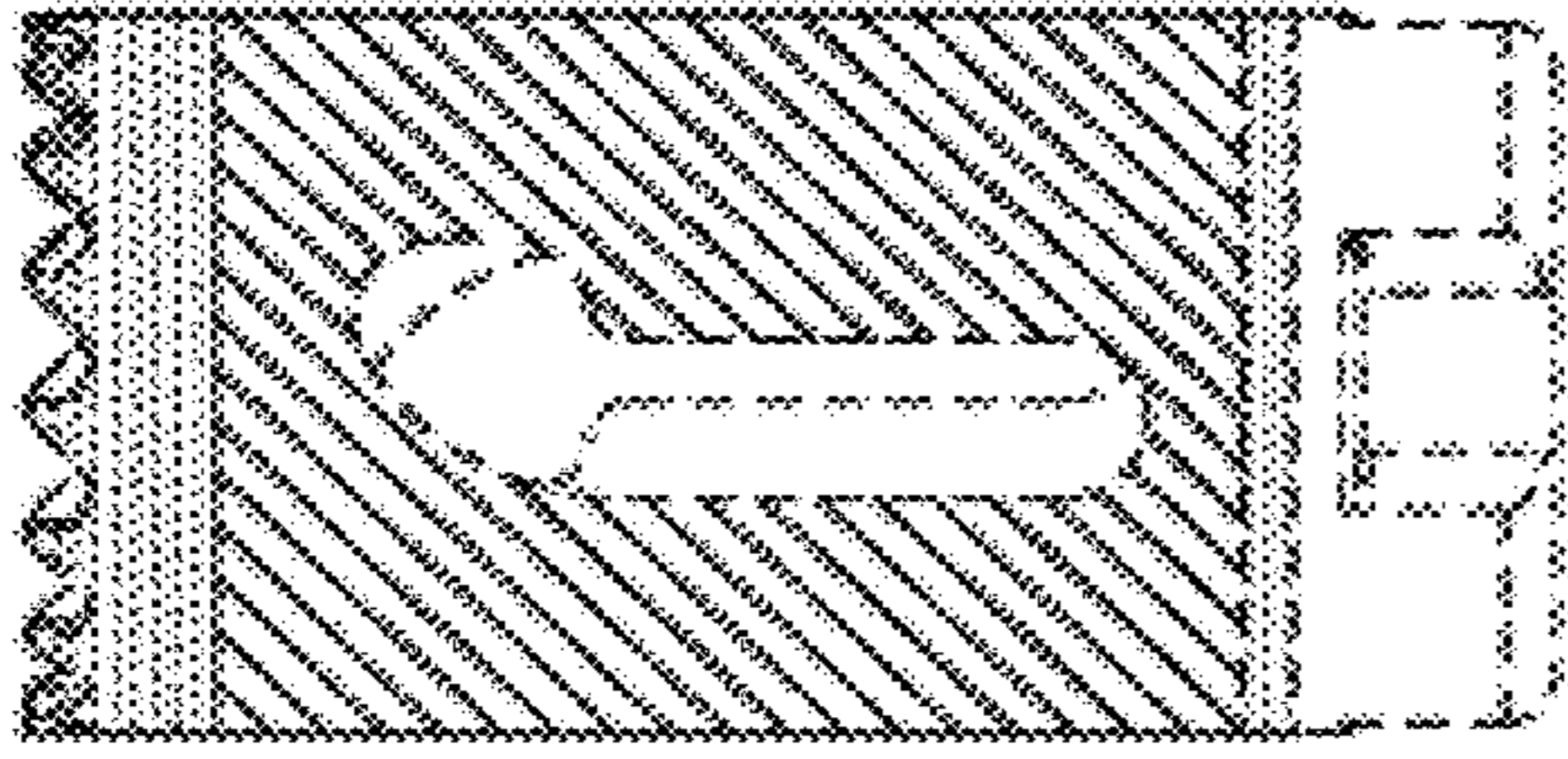


FIG. 8

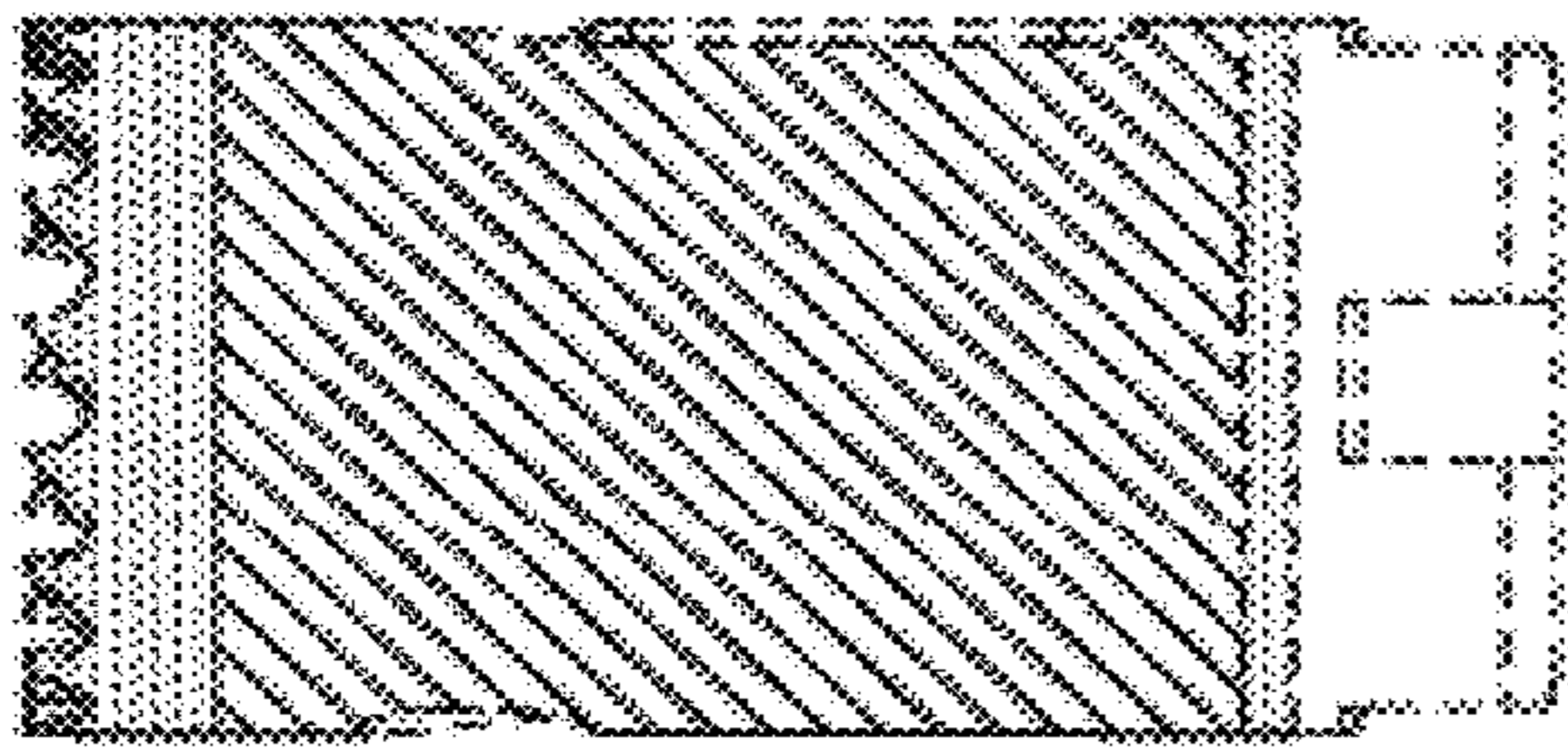


FIG. 7

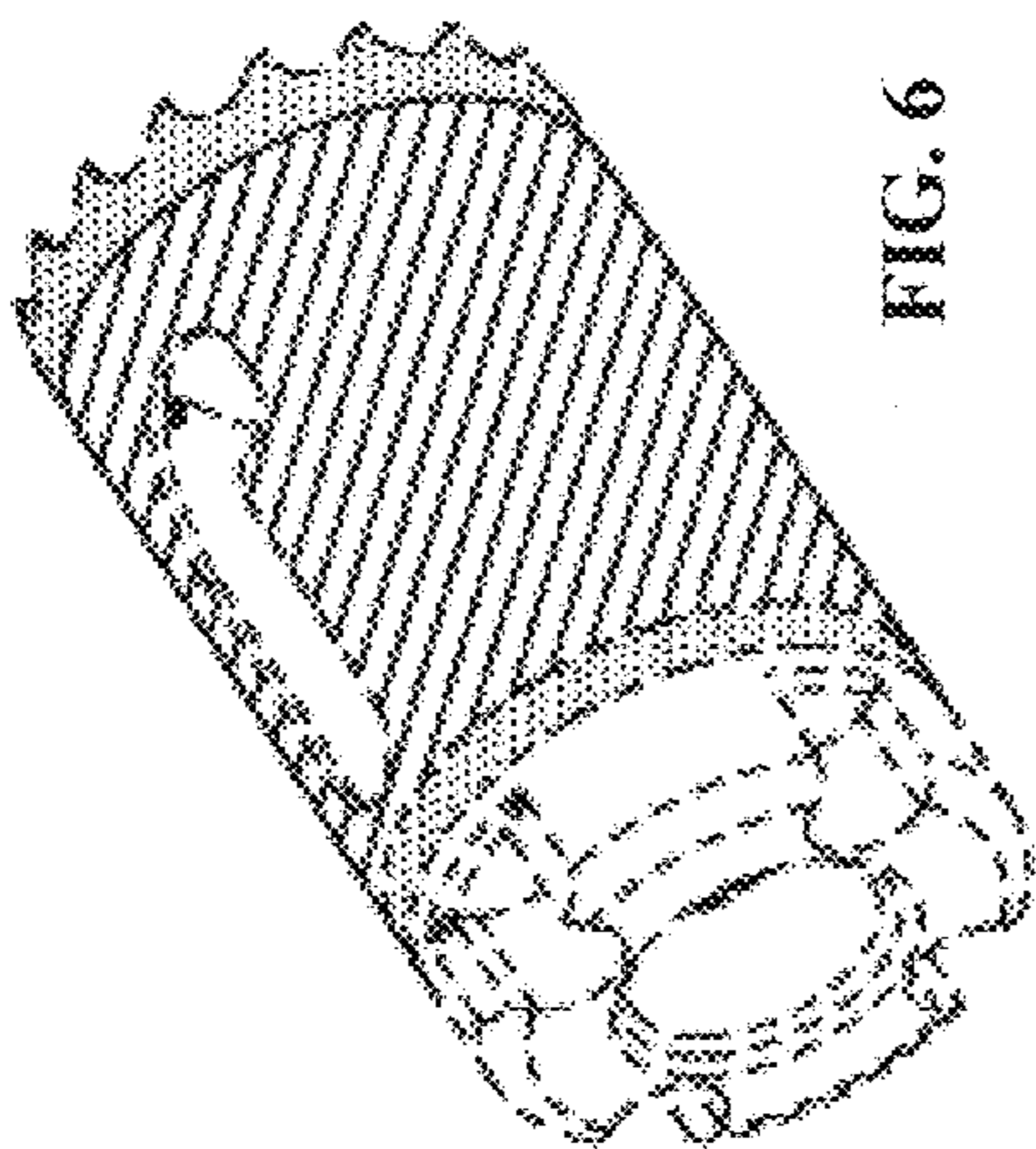


FIG. 6

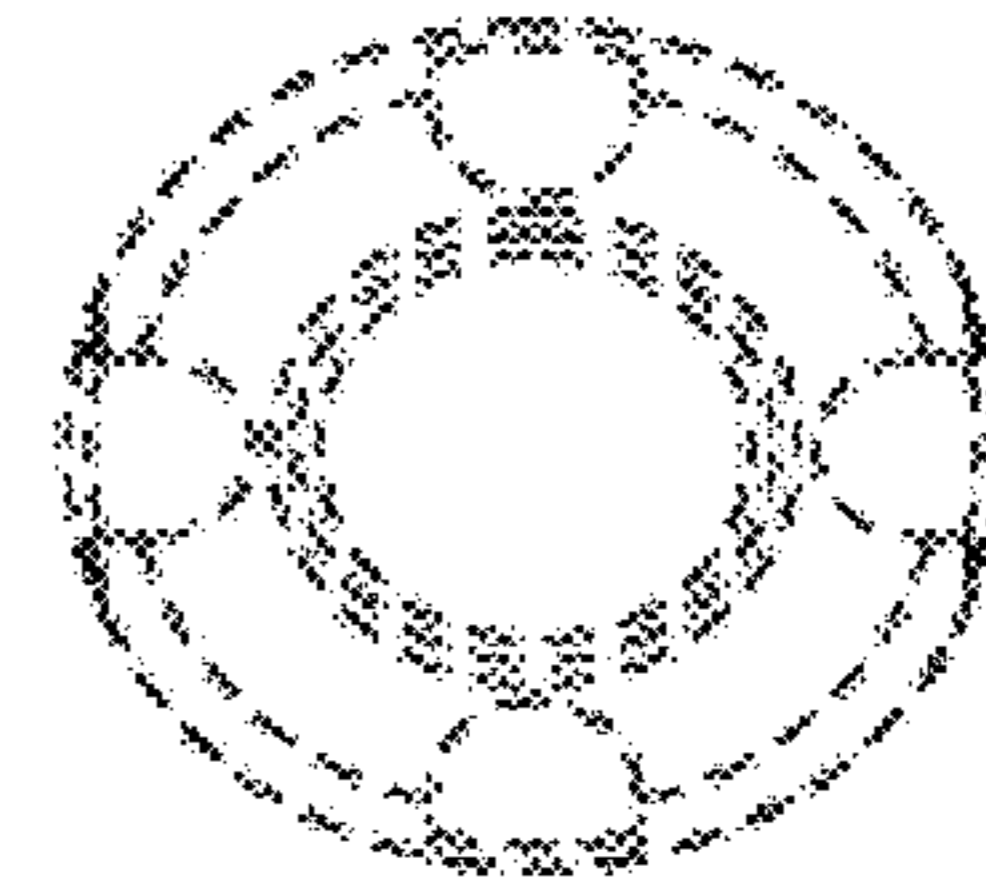


FIG. 10

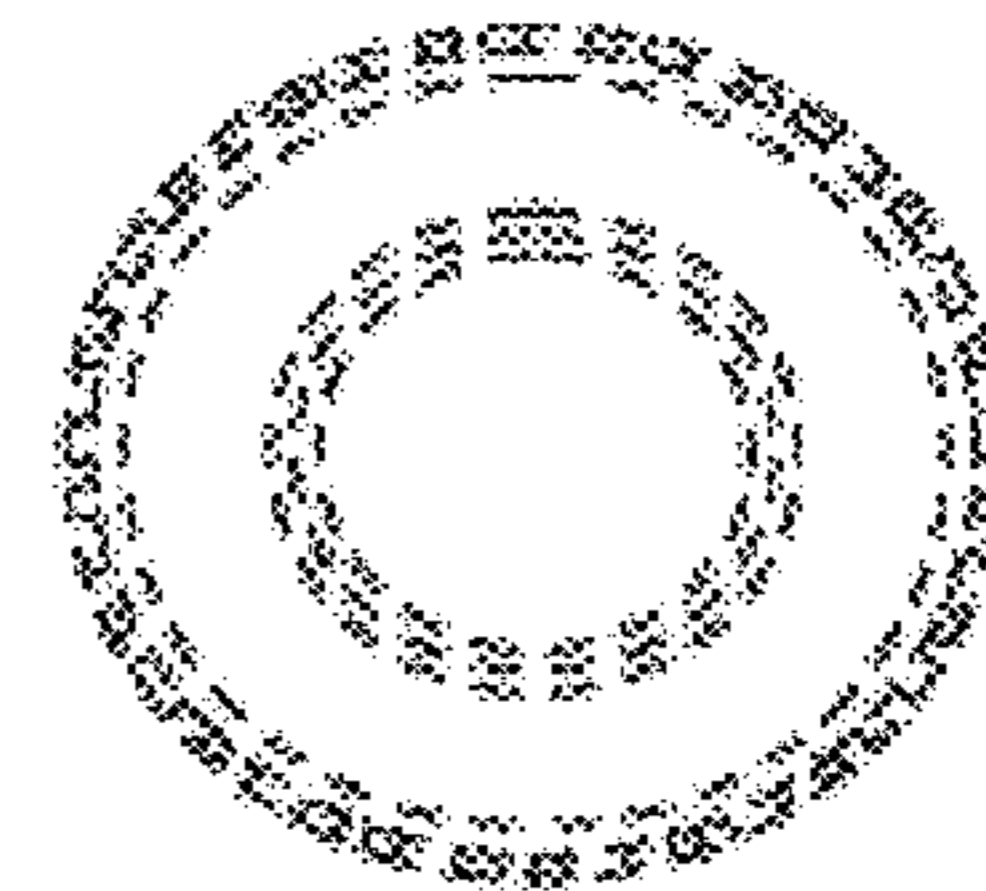


FIG. 9

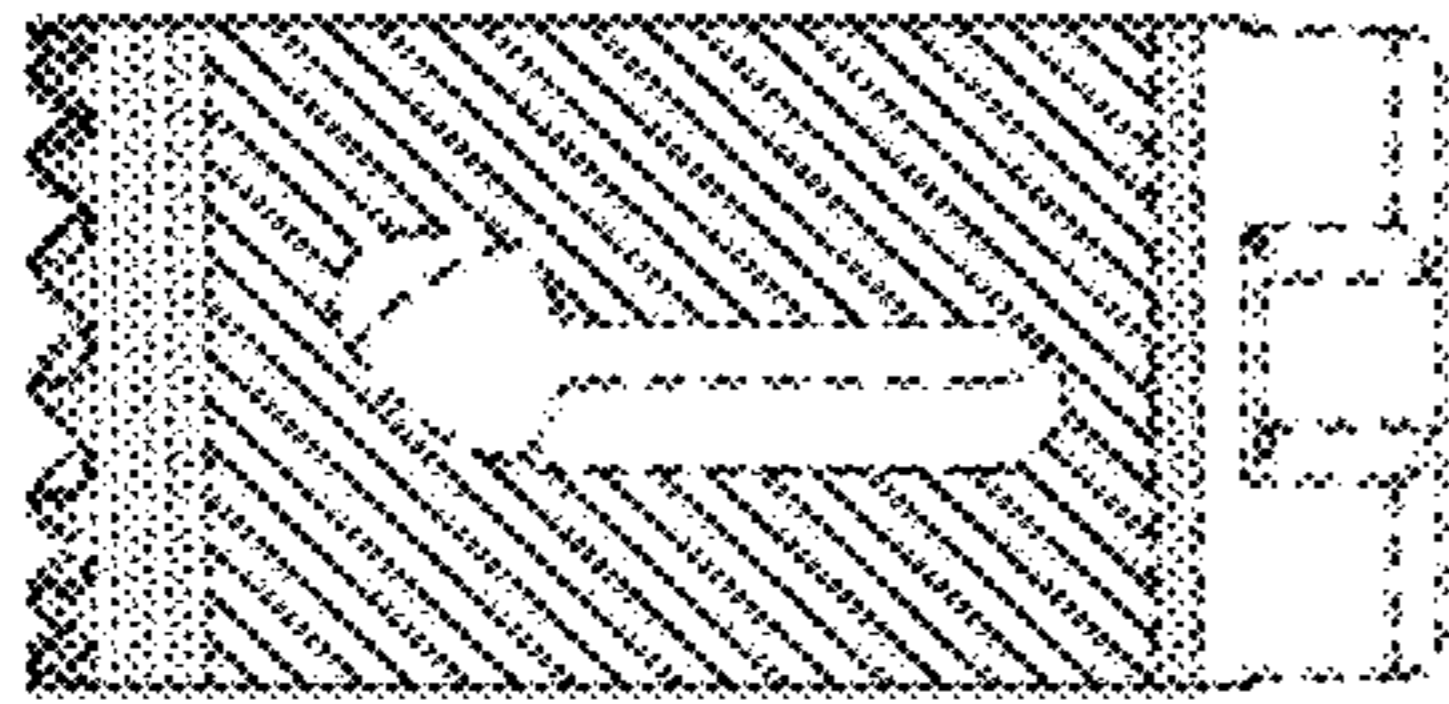


FIG. 13

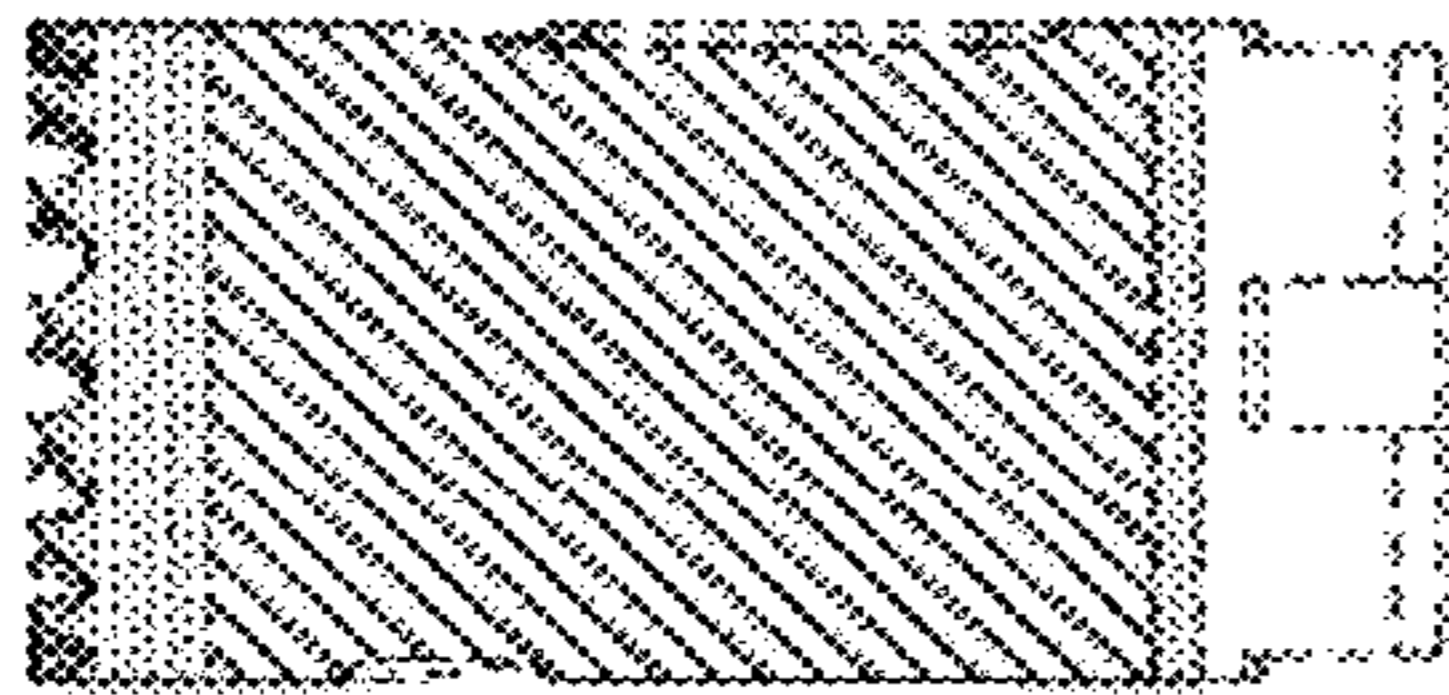


FIG. 12

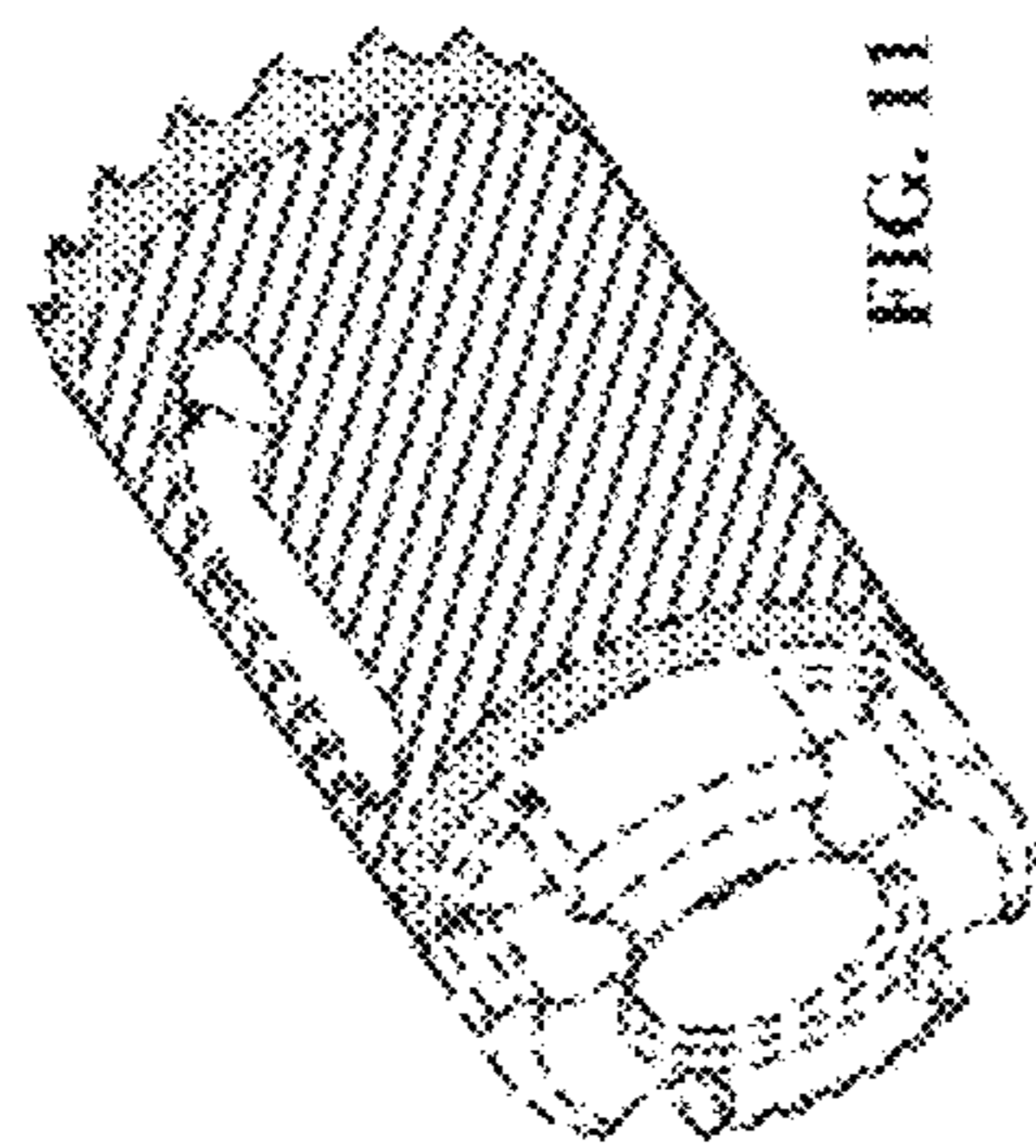


FIG. 11

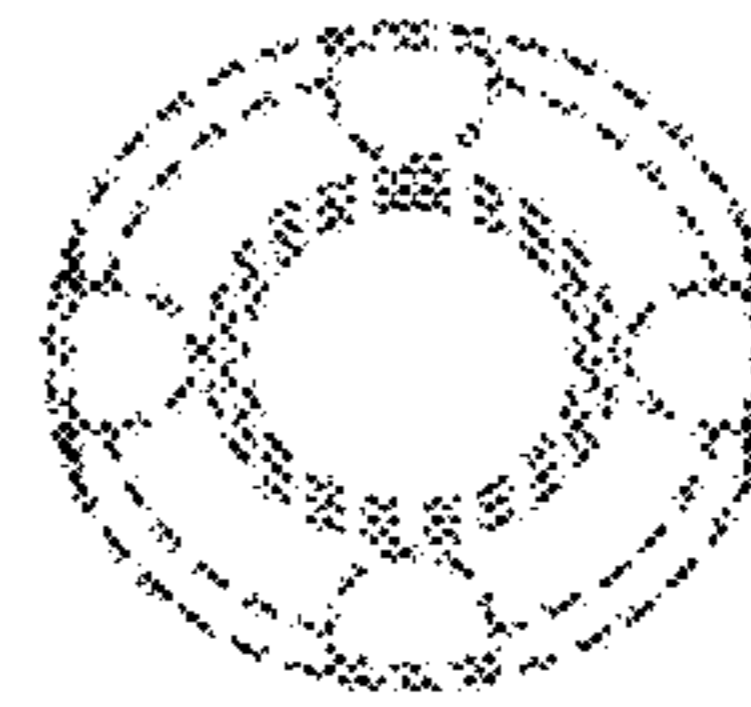


FIG. 15

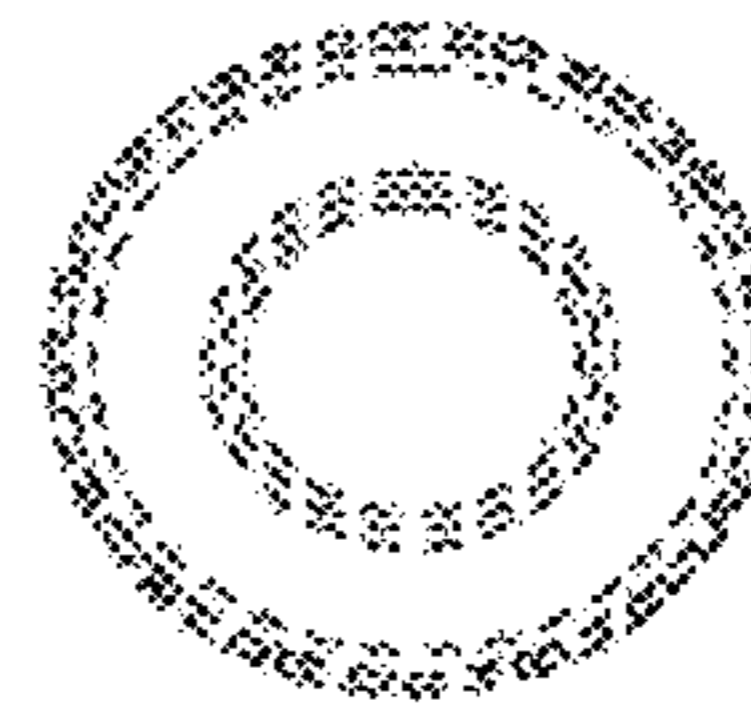


FIG. 14