



US00D828859S

(12) **United States Design Patent** (10) **Patent No.:** **US D828,859 S**
Burton (45) **Date of Patent:** **** *Sep. 18, 2018**

(54) **CUTTING TOOL**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **US SYNTHETIC CORPORATION,**
Orem, UT (US)

AU 2013101370 11/2013
CN 102108866 6/2011

(Continued)

(72) Inventor: **Regan Leland Burton,** Saratoga
Springs, UT (US)

OTHER PUBLICATIONS

(73) Assignee: **US SYNTHETIC CORPORATION,**
Orem, UT (US)

Advisory Action received for U.S. Appl. No. 14/275,574 mailed
Mar. 9, 2017.

(Continued)

(*) Notice: This patent is subject to a terminal dis-
claimer.

Primary Examiner — Patricia Ann Palasik

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

(74) *Attorney, Agent, or Firm* — Dorsey & Whitney LLP

(21) Appl. No.: **29/555,281**

(57) **CLAIM**

(22) Filed: **Feb. 19, 2016**

The ornamental design for a cutting tool, as shown and
described.

Related U.S. Application Data

(63) Continuation of application No. 14/273,360, filed on
May 8, 2014, now Pat. No. 9,434,091.

(51) **LOC (11) Cl.** **15-09**

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

(58) **Field of Classification Search**

USPC D8/20, 70, 71; D15/138, 139, 140, 141
CPC B23D 61/06; B28D 1/122; B28D 1/186;
B28D 1/188; E01C 23/088; E01C 23/127;
E21C 35/183; E21C 35/197; E21C
2035/1813; E21C 2035/1816
See application file for complete search history.

DESCRIPTION

FIG. 1 is a front, perspective view of a tool;
FIG. 2 is a front elevational view of the tool shown in FIG.
1;
FIG. 3 is a back elevational view of the tool shown in FIG.
1;
FIG. 4 is a side elevational view of the tool shown in FIG.
1, with the other side elevational view being identical;
FIG. 5 is a top plan view of the tool shown in FIG. 1; and,
FIG. 6 is a bottom plan view of the tool shown in FIG. 1.
The broken lines in the drawings depict unclaimed environ-
mental subject matter.

Any combination of the illustrated features, including
claimed features and non-claimed features, may be claimed
in this application or a continuing application claiming
priority to this application by converting any portion of the
broken lines to solid lines, any portion of the solid lines to
broken lines, or both.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,665,893 A 1/1954 Ball
3,342,532 A 9/1967 Krekeler et al.
3,671,075 A * 6/1972 Eyre et al. E21C 35/183
299/112 R

3,695,726 A 10/1972 Krekeler
(Continued)

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

3,751,114 A 8/1973 Davis
 3,785,021 A * 1/1974 Norgren B23B 27/04
 407/110
 3,841,708 A 10/1974 Kniff et al.
 D238,243 S 12/1975 Polivka
 3,958,832 A 5/1976 Sigott et al.
 4,006,936 A 2/1977 Crabiel
 4,083,644 A * 4/1978 Friedline B23B 27/00
 407/101
 4,140,189 A * 2/1979 Garner E21B 10/567
 175/374
 4,193,638 A 3/1980 Heckenhauer
 4,200,159 A * 4/1980 Peschel B22F 7/06
 175/428
 4,299,424 A 11/1981 LeBegue et al.
 4,303,136 A * 12/1981 Ball E21B 10/567
 175/393
 4,335,921 A 6/1982 Swisher, Jr. et al.
 4,337,980 A 7/1982 Krekeler et al.
 4,340,325 A * 7/1982 Gowanlock B23B 27/045
 407/116
 D270,059 S * 8/1983 Wilkins D15/139
 D271,497 S * 11/1983 Green D15/139
 4,484,644 A 11/1984 Cook et al.
 4,580,930 A * 4/1986 Zinner B23B 27/04
 407/110
 4,605,343 A 8/1986 Hibbs, Jr. et al.
 4,655,508 A 4/1987 Tomlinson
 4,678,237 A 7/1987 Collin
 4,679,858 A 7/1987 Tank
 D296,107 S * 6/1988 Andersson D15/139
 4,784,023 A * 11/1988 Dennis B22F 7/06
 175/428
 4,787,466 A * 11/1988 Tomlinson E21B 10/573
 175/432
 4,836,178 A * 6/1989 Tomlinson E21B 10/567
 125/39
 4,850,649 A 7/1989 Beach et al.
 4,880,278 A * 11/1989 Tomlinson E21B 10/567
 175/413
 4,902,073 A * 2/1990 Tomlinson E21B 10/567
 175/393
 D307,279 S * 4/1990 Vincent D15/139
 4,913,125 A 4/1990 Bunting et al.
 D311,747 S * 10/1990 Mihic D15/140
 5,007,685 A 4/1991 Beach et al.
 5,060,739 A * 10/1991 Griffin B23K 33/00
 175/428
 5,090,491 A 2/1992 Tibbitts et al.
 5,318,351 A 6/1994 Walker
 5,378,050 A 1/1995 Kammerer et al.
 5,417,475 A 5/1995 Graham et al.
 5,431,239 A * 7/1995 Tibbitts E21B 10/567
 175/428
 5,605,382 A 2/1997 Massa et al.
 5,649,604 A 7/1997 Fuller et al.
 5,690,393 A 11/1997 Massa et al.
 5,881,830 A 3/1999 Cooley
 6,089,123 A 7/2000 Chow et al.
 6,213,931 B1 4/2001 Twardowski et al.
 6,283,844 B1 9/2001 Tank
 6,485,104 B1 11/2002 Keller et al.
 6,779,850 B1 8/2004 Schibeci et al.
 7,108,212 B2 9/2006 Latham
 D558,802 S * 1/2008 Nicholas D15/140
 D616,003 S * 5/2010 Ueda D15/139
 7,866,418 B2 1/2011 Bertagnolli et al.
 7,998,573 B2 8/2011 Qian et al.
 8,034,136 B2 10/2011 Sani
 8,047,260 B2 11/2011 Uno et al.
 8,079,785 B2 * 12/2011 Nicholas B23B 29/043
 407/101
 8,236,074 B1 8/2012 Bertagnolli et al.

D666,640 S * 9/2012 Cox B02C 18/145
 D15/139
 8,672,415 B2 3/2014 Neilson et al.
 8,727,044 B2 5/2014 Qian et al.
 8,789,894 B2 * 7/2014 Lucek E21C 35/183
 299/108
 9,017,438 B1 4/2015 Miess et al.
 9,027,675 B1 5/2015 Jones et al.
 9,028,008 B1 5/2015 Bookhamer et al.
 9,238,893 B2 * 1/2016 Latham B28D 1/188
 9,272,392 B2 3/2016 Mukhopadhyay et al.
 9,272,814 B2 3/2016 Carver et al.
 9,303,511 B2 * 4/2016 Paros E21C 35/183
 9,382,794 B2 * 7/2016 Latham E21C 35/183
 9,434,091 B2 * 9/2016 Burton B28D 1/186
 9,593,577 B2 3/2017 Lachmann et al.
 D809,031 S * 1/2018 Burton D15/139
 2001/0040053 A1 11/2001 Beuershausen et al.
 2002/0153175 A1 10/2002 Ojanen et al.
 2003/0234569 A1 12/2003 Dawood et al.
 2005/0082898 A1 4/2005 Keller et al.
 2006/0033379 A1 2/2006 Frear et al.
 2006/0087169 A1 4/2006 Hesse et al.
 2007/0090679 A1 4/2007 Ojanen et al.
 2008/0030065 A1 2/2008 Frear et al.
 2008/0035383 A1 2/2008 Hall et al.
 2008/0036280 A1 2/2008 Hall et al.
 2008/0202819 A1 8/2008 Fader
 2008/0250724 A1 10/2008 Hall et al.
 2008/0309146 A1 12/2008 Hall et al.
 2009/0256413 A1 10/2009 Majagi
 2010/0052406 A1 3/2010 Beach et al.
 2010/0194176 A1 8/2010 Lucek et al.
 2010/0244545 A1 9/2010 Hall et al.
 2011/0132667 A1 6/2011 Smallman et al.
 2011/0148178 A1 6/2011 Lehnert et al.
 2011/0233987 A1 9/2011 Maushart et al.
 2012/0043138 A1 2/2012 Myers et al.
 2012/0138370 A1 6/2012 Mukhopadhyay
 2012/0160573 A1 6/2012 Myers et al.
 2012/0175939 A1 7/2012 O'Neill et al.
 2013/0052481 A1 2/2013 Konyashin
 2013/0092451 A1 4/2013 Mukhopadhyay et al.
 2013/0092452 A1 4/2013 Mukhopadhyay et al.
 2013/0322975 A1 12/2013 Tan et al.
 2014/0110991 A1 4/2014 Sollami
 2014/0175853 A1 6/2014 Warren
 2014/0225418 A1 8/2014 Lachmann et al.
 2014/0240634 A1 8/2014 Matsuzaki
 2014/0339879 A1 11/2014 Burton et al.
 2014/0339883 A1 11/2014 Burton et al.
 2015/0176408 A1 6/2015 Latham
 2015/0176409 A1 6/2015 Latham
 2015/0240635 A1 8/2015 Lachmann et al.
 2015/0314483 A1 11/2015 Miess et al.
 2016/0102550 A1 4/2016 Swope et al.
 2016/0273356 A1 9/2016 Ojanen et al.
 2016/0332269 A1 11/2016 Provins et al.

FOREIGN PATENT DOCUMENTS

CN 202073564 12/2011
 CN 203081445 7/2013
 GB 1481278 7/1977
 GB 2170843 8/1986
 GB 2177144 1/1987
 GB 2193740 2/1988
 WO WO 2010/083015 7/2010
 WO WO 2012/130870 10/2012
 WO 2016071001 A1 5/2016

OTHER PUBLICATIONS

U.S. Appl. No. 12/961,787, filed Dec. 7, 2010, Mukhopadhyay et al.
 U.S. Appl. No. 13/027,954, filed Feb. 15, 2011, Miess et al.
 U.S. Appl. No. 13/070,636, filed Mar. 24, 2011, Qian et al.
 U.S. Appl. No. 13/100,388, filed May 4, 2011, Jones et al.

(56)

References Cited

OTHER PUBLICATIONS

U.S. Appl. No. 13/275,372, filed Oct. 18, 2011, Mukhopadhyay et al.
 U.S. Appl. No. 13/648,913, filed Oct. 10, 2012, Mukhopadhyay et al.
 U.S. Appl. No. 13/765,027, filed Feb. 12, 2013, Carver et al.
 U.S. Appl. No. 61/824,022, filed May 16, 2013, Burton et al.
 U.S. Appl. No. 61/824,007, filed May 16, 2013, Burton et al.
 U.S. Appl. No. 62/030,525, filed Jul. 29, 2014, Myers et al.
 U.S. Appl. No. 14/811,699, filed Jul. 28, 2015, Myers et al.
 U.S. Appl. No. 62/232,732, filed Sep. 25, 2015, Weaver et al.
 U.S. Appl. No. 29/540,584, filed Sep. 25, 2015, Weaver.
 U.S. Appl. No. 29/540,597, Sep. 25, 2015, Weaver.
 International Search Report and Written Opinion from International Application No. PCT/US2014/037708 mailed Oct. 30, 2014.
 International Search Report and Written Opinion from International Application No. PCT/US2014/037381 mailed Oct. 30, 2014.
 International Search Report and Written Opinion for International Application No. PCT/US2015/027830 mailed Jul. 14, 2015.
 Roepke et al.; "Drag Bit Cutting Characteristics Using Sintered Diamond Inserts" Report of Investigations 8802; Bureau of Mines Report of Investigations/ 1983; (1983) 35 pages.
 U.S. Appl. No. 14/273,360, filed Jun. 12, 2015, Office Action.
 U.S. Appl. No. 14/273,360, filed Oct. 22, 2015, Office Action.
 Final Office Action for U. S. Appl. No. 14/273,360 mailed Mar. 7, 2016.
 Final Office Action for U.S. Appl. No. 14/266,437 mailed Dec. 12, 2016.
 Final Office Action for U.S. Appl. No. 14/275,574 mailed Nov. 29, 2016.
 Issue Notification for U.S. Appl. No. 14/273,360 mailed Aug. 17, 2016.
 Non-Final Office Action for U. S. Appl. No. 14/266,437 mailed Jun. 9, 2016.
 Non-Final Office Action for U.S. Appl. No. 14/275,574 mailed Apr. 6, 2016.
 Notice of Allowance for U. S. Appl. No. 14/273,360 mailed May 18, 2016.
 Supplemental Notice of Allowance for U.S. Appl. No. 14/273,360 mailed Aug. 10, 2016.
 U.S. Appl. No. 13/795,027, filed Mar. 12, 2013.
 U.S. Appl. No. 14/266,437, filed Apr. 30, 2014.
 U.S. Appl. No. 14/273,360, filed May 8, 2014.
 U.S. Appl. No. 14/275,574, filed May 12, 2014.
 U.S. Appl. No. 15/238,486, filed Aug. 16, 2016.
 U.S. Appl. No. 29/555,269, filed Feb. 19, 2016.
 U.S. Appl. No. 29/555,279, filed Feb. 19, 2016.

U.S. Appl. No. 29/555,281, filed Feb. 19, 2016.
 Advisory Action received for U.S. Appl. No. 14/266,437 mailed Mar. 24, 2017.
 Non-Final Office for U.S. Appl. No. 29/555,279 mailed Mar. 24, 2017.
 Notice of Allowance received for U.S. Appl. No. 29/555,269 mailed Apr. 6, 2017.
 Non-Final Office Action received for U.S. Appl. No. 14/275,574 mailed Apr. 7, 2017.
 Non-Final Office Action for U.S. Appl. No. 14/266,437 dated Apr. 21, 2017.
 Notice of Allowance for U.S. Appl. No. 29/540,584 dated May 8, 2017.
 Notice of Allowance for U.S. Appl. No. 29/540,597 dated May 8, 2017.
 Supplemental Notice of Allowance for U.S. Appl. No. 29/540,597 dated Jun. 1, 2017.
 Supplemental Notice of Allowance for U.S. Appl. No. 29/555,269 dated Apr. 28, 2017.
 Final Office Action for U.S. Appl. No. 14/266,437 dated Nov. 15, 2017.
 Issue Notification for U.S. Appl. No. 29/540,584 dated Sep. 14, 2017.
 Issue Notification for U.S. Appl. No. 29/540,597 dated Sep. 6, 2017.
 Non-Final Office Action for U.S. Appl. No. 15/238,486 dated Aug. 17, 2017.
 Notice of Allowance for U.S. Appl. No. 14/275,574 dated Sep. 26, 2017.
 Notice of Allowance for U.S. Appl. No. 29/555,279 dated Aug. 31, 2017.
 Supplemental Notice of Allowance for U.S. Appl. No. 29/540,584 dated Sep. 7, 2017.
 Supplemental Notice of Allowance for U.S. Appl. No. 29/540,597 dated Aug. 25, 2017.
 Final Office Action for U.S. Appl. No. 15/238,486 dated Feb. 26, 2018.
 Issue Notification for U.S. Appl. No. 29/555,279 dated Jan. 10, 2018.
 Non-Final Office Action for U.S. Appl. No. 14/266,437 dated Mar. 28, 2018.
 Non-Final Office Action for U.S. Appl. No. 14/811,699 dated Nov. 29, 2017.
 Non-Final Office Action for U.S. Appl. No. 15/266,355 dated Jan. 8, 2018.
 Notice of Allowance for U.S. Appl. No. 14/275,574 dated Jan. 24, 2018.
 Supplemental Notice of Allowability for U.S. Appl. No. 29/555,279 dated Jan. 2, 2018.

* cited by examiner

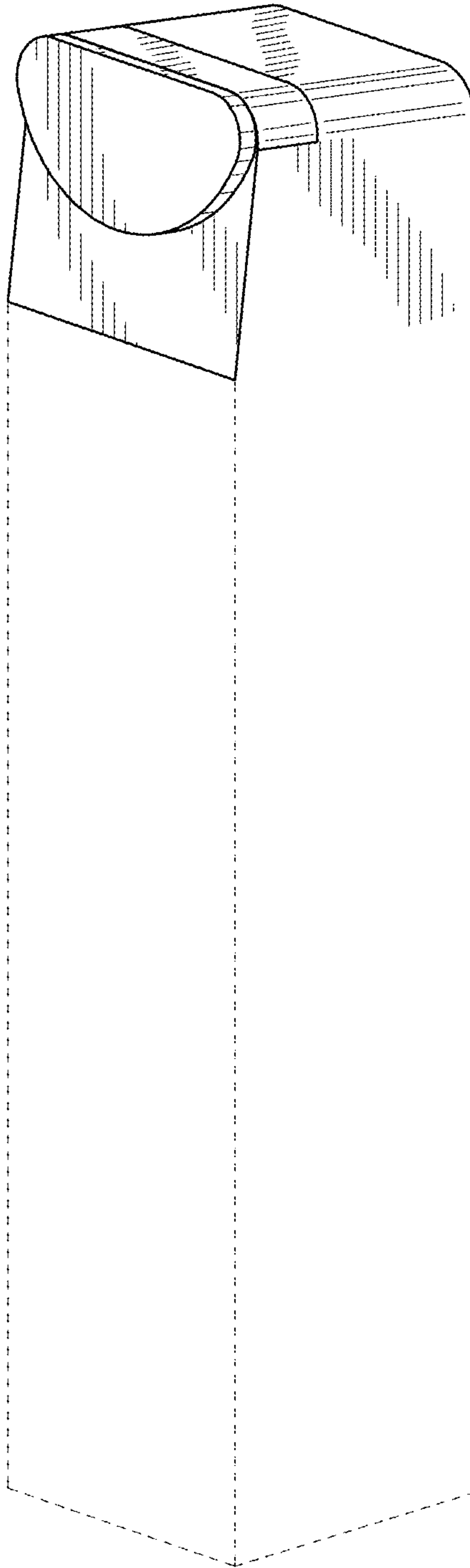


FIG. 1

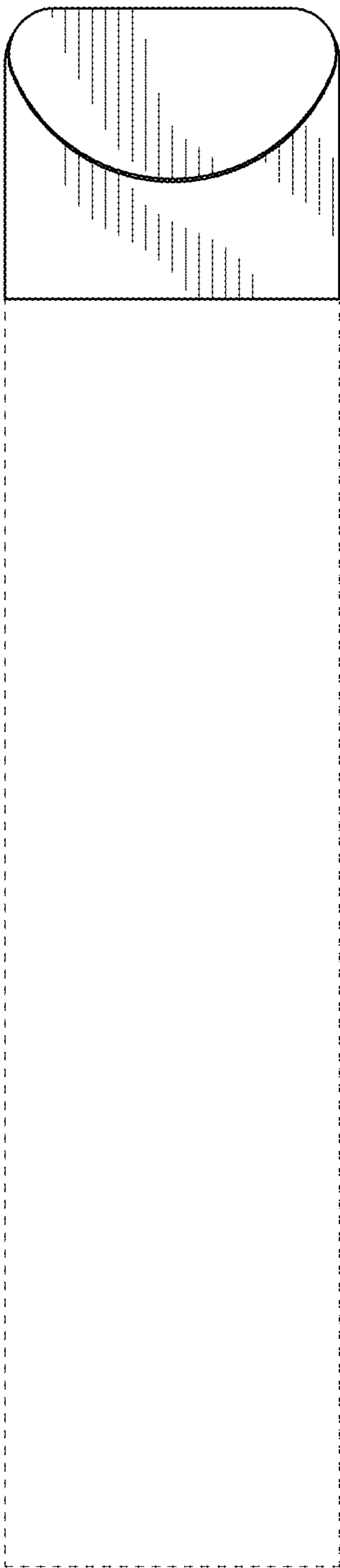


FIG. 2

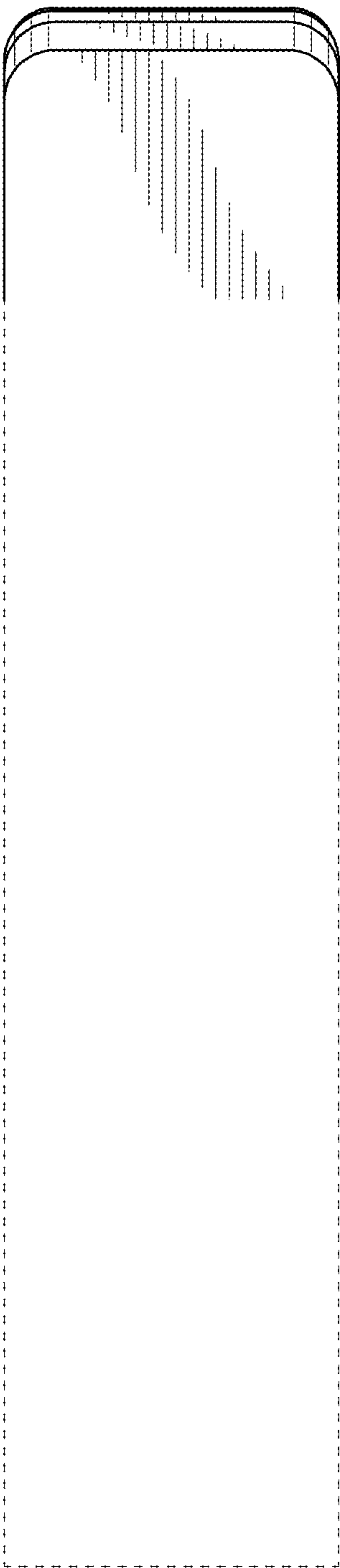


FIG. 3

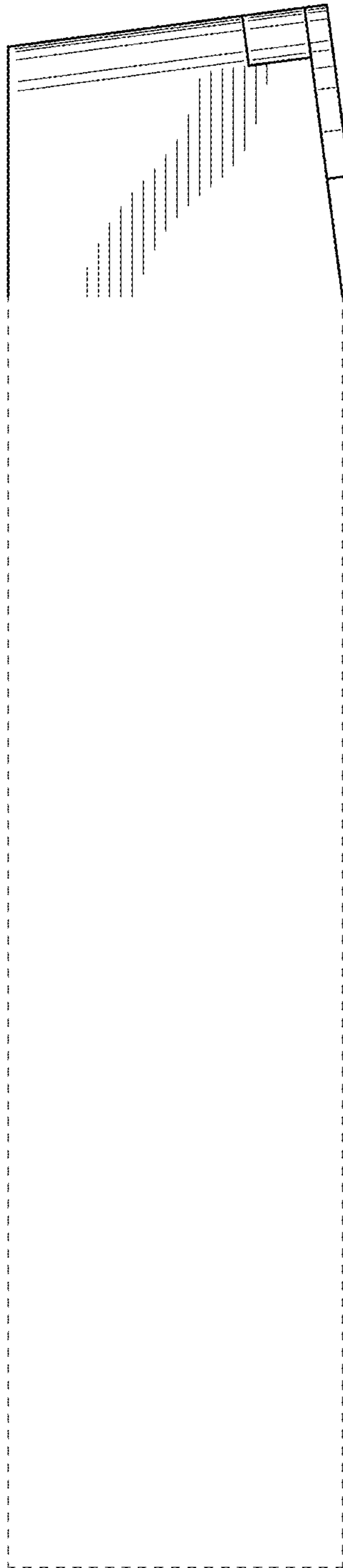


FIG. 4

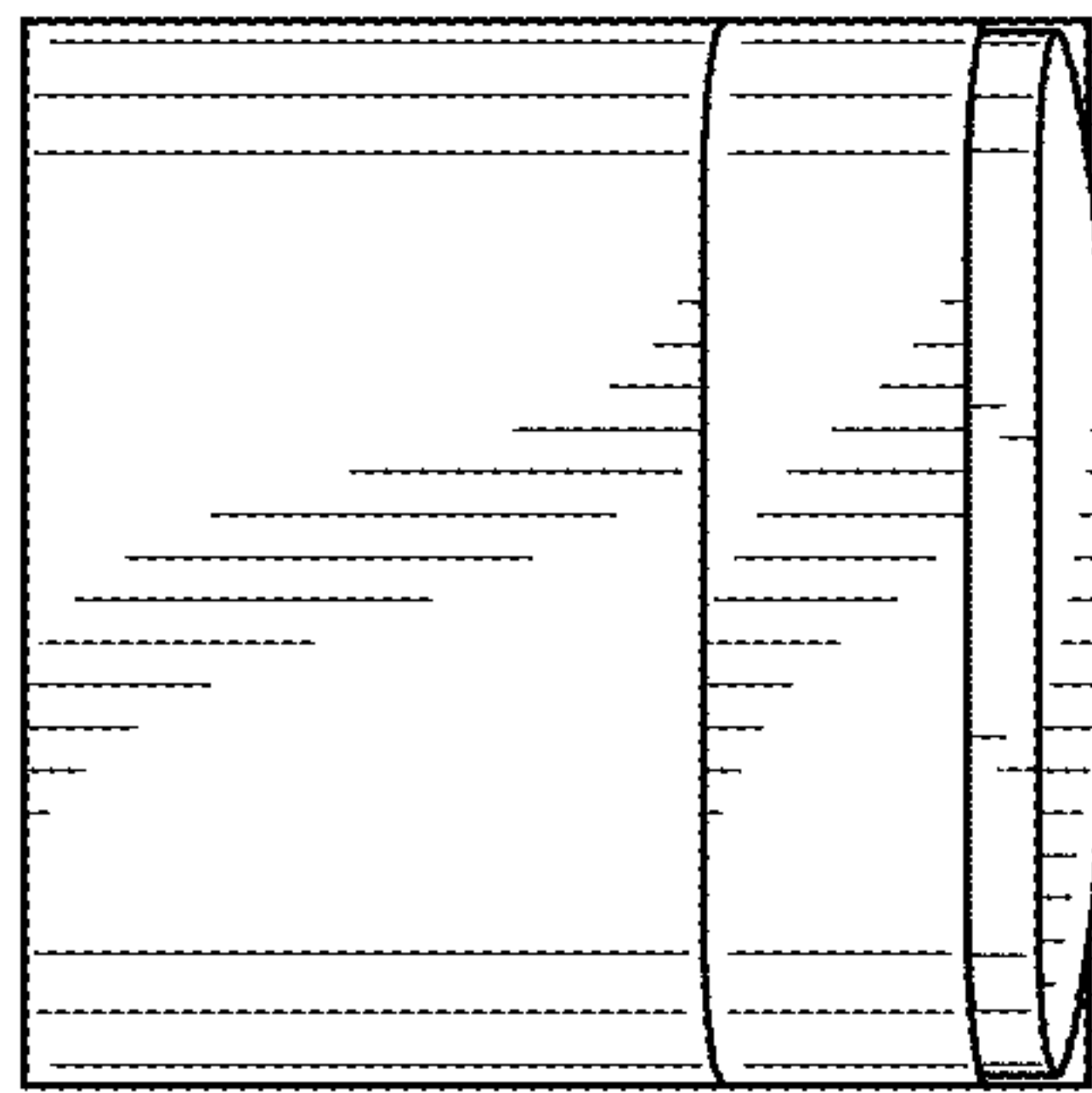


FIG. 5

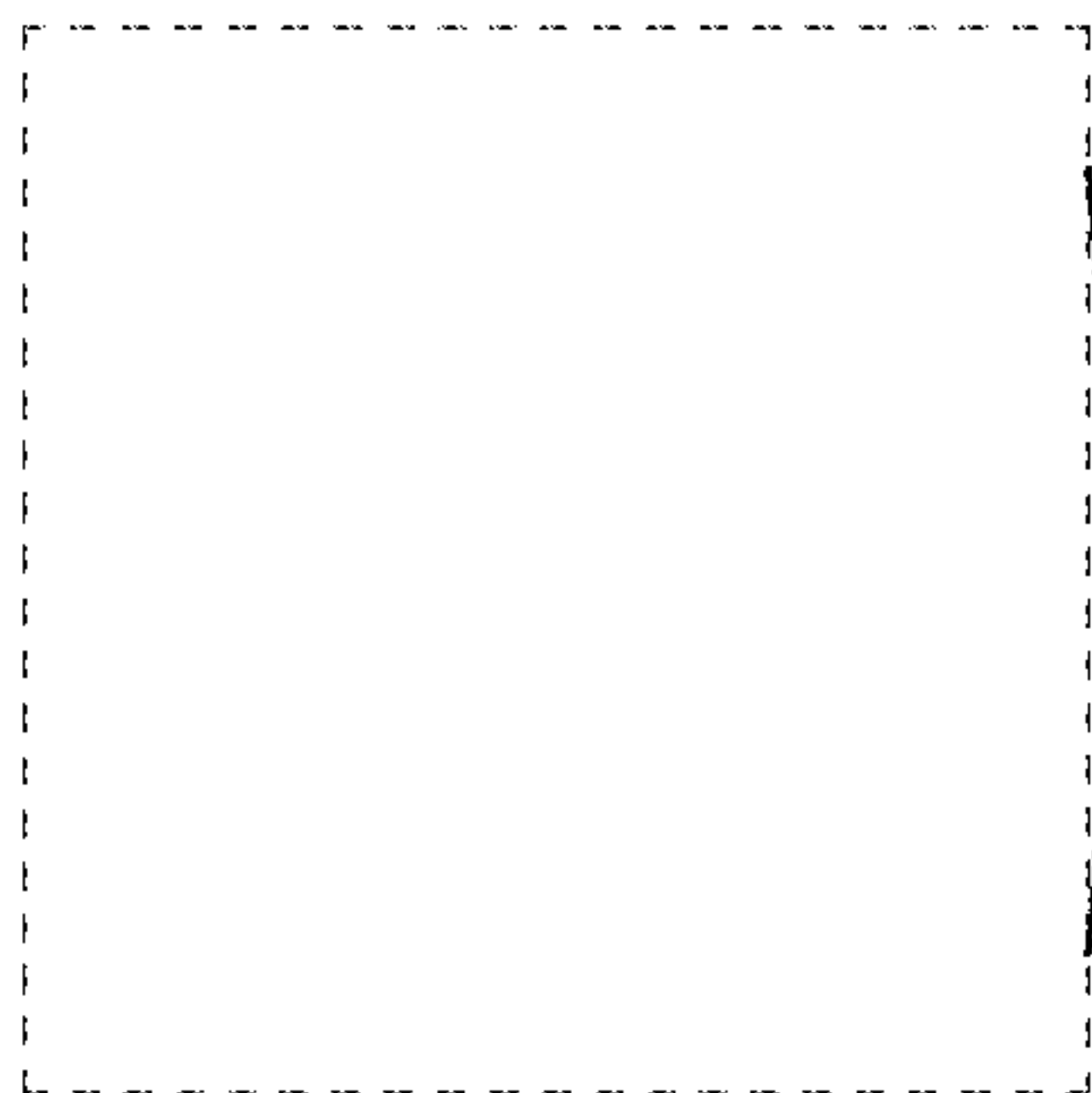


FIG. 6