



US00D740943S

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

(10) **Patent No.:** US D740,943 S
(45) **Date of Patent:** ** Oct. 13, 2015

(54) **BONE PLATE**
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3,757,591 A 9/1973 Taylor
4,408,601 A 10/1983 Wenk
4,454,876 A 6/1984 Mears
4,616,634 A 10/1986 Vargas Garcia
4,720,225 A 1/1988 Burt
4,903,691 A 2/1990 Heini
4,959,065 A 9/1990 Arnett et al.

(Continued)

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(**) Term: **14 Years**

(21) Appl. No.: **29/498,345**

(22) Filed: **Aug. 1, 2014**

Related U.S. Application Data

(63) Continuation of application No. 12/726,195, filed on Mar. 17, 2010, now abandoned.

(51) **LOC (10) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/155**

(58) **Field of Classification Search**
USPC D24/155

CPC A61B 17/8061; A61B 17/7059; A61B 17/8052; A61B 17/8605; A61B 17/8085; A61B 17/809; A61B 17/8014; A61B 17/8033; A61B 17/8004; A61B 17/888; A61B 17/842; A61B 17/8023; A61B 17/80009; A61B 17/86; A61B 17/1739; A61B 17/8066; A61B 17/1671; A61B 17/1757; A61B 17/8071; A61B 17/176; A61B 2017/1782; A61B 2017/1775

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,662,988 A 12/1953 McKim
3,741,205 A 6/1973 Markolf et al.

FOREIGN PATENT DOCUMENTS

AT 406446 5/2000
DE 3113639 5/1982

(Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion for PCT/IB2014/001111, dated Sep. 8, 2014.

(Continued)

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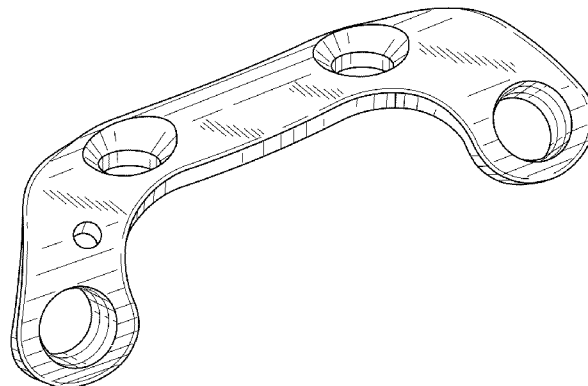
(57) **CLAIM**

The ornamental design for a bone plate, as shown and described.

DESCRIPTION

FIG. 1 is a top perspective view of a bone plate;
FIG. 2 is a front left perspective view of the bone plate;
FIG. 3 is a top view of the bone plate;
FIG. 4 is a front view of the bone plate shown in FIG. 3;
FIG. 5 is a right side view of the bone plate shown in FIG. 4;
and,
FIG. 6 is a bottom view of the bone plate.

1 Claim, 2 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,529,075 A 6/1996 Clark
 6,129,728 A 10/2000 Schumacher et al.
 6,203,545 B1 3/2001 Stoffella
 6,206,883 B1 3/2001 Tunc
 6,306,140 B1 10/2001 Siddiqui
 6,398,783 B1 6/2002 Michelson
 6,423,068 B1 7/2002 Reisberg et al.
 D480,141 S * 9/2003 Benirschke et al. D24/155
 6,669,701 B2 12/2003 Steiner et al.
 6,716,957 B2 4/2004 Tunc
 6,719,759 B2 4/2004 Wagner et al.
 6,730,091 B1 5/2004 Pfeifferle et al.
 6,886,799 B2 5/2005 Yamanashi
 7,008,428 B2 3/2006 Cachia et al.
 D520,637 S * 5/2006 Kay et al. D24/155
 7,354,441 B2 4/2008 Frigg
 7,468,069 B2 12/2008 Baynham et al.
 7,655,029 B2 2/2010 Niederberger et al.
 7,771,457 B2 8/2010 Kay et al.
 D630,750 S * 1/2011 Graham D24/155
 7,976,570 B2 7/2011 Wagner et al.
 D648,027 S * 11/2011 Vancellette et al. D24/155
 8,118,846 B2 * 2/2012 Leither et al. 606/280
 8,118,848 B2 2/2012 Ducharme et al.
 8,246,661 B2 8/2012 Beutter et al.
 8,632,545 B2 1/2014 Sarangapani et al.
 D699,351 S * 2/2014 Podgorski et al. D24/155
 2002/0045897 A1 4/2002 Dixon et al.
 2002/0045901 A1 4/2002 Wagner et al.
 2002/0183752 A1 12/2002 Steiner et al.
 2003/0078668 A1 4/2003 Michelson
 2004/0018228 A1 1/2004 Fischell et al.
 2004/0034356 A1 2/2004 LeHuec et al.
 2004/0073218 A1 4/2004 Dahners
 2004/0102778 A1 5/2004 Huebner et al.
 2004/0167522 A1 8/2004 Niederberger et al.
 2004/0215192 A1 10/2004 Justis et al.
 2004/0236332 A1 11/2004 Frigg
 2005/0015092 A1 1/2005 Rathbun et al.
 2005/0049594 A1 3/2005 Wack et al.
 2005/0065521 A1 3/2005 Steger et al.
 2005/0085818 A1 4/2005 Huebner
 2005/0124994 A1 6/2005 Berger et al.
 2005/0165400 A1 7/2005 Fernandez
 2005/0165401 A1 7/2005 Pack
 2005/0182408 A1 8/2005 Pfeifferle et al.
 2005/0192577 A1 9/2005 Mosca et al.
 2005/0261688 A1 11/2005 Grady et al.
 2006/0015102 A1 1/2006 Toullec et al.
 2006/0173458 A1 8/2006 Forstein et al.
 2006/0235396 A1 10/2006 Sanders et al.
 2006/0241607 A1 10/2006 Myerson et al.
 2007/0016205 A1 1/2007 Beutter et al.
 2007/0123885 A1 5/2007 Kirschman
 2007/0233106 A1 10/2007 Horan et al.
 2007/0276386 A1 11/2007 Gerlach et al.
 2008/0051786 A1 2/2008 Jensen
 2008/0132955 A1 6/2008 Frigg
 2008/0300637 A1 12/2008 Austin et al.
 2009/0024172 A1 1/2009 Pizzicara
 2009/0210010 A1 8/2009 Strnad et al.
 2010/0256687 A1 10/2010 Neufeld et al.
 2011/0295325 A1 12/2011 Wagner et al.
 2012/0265254 A1 10/2012 Horan et al.
 2013/0190829 A1 7/2013 Batsch et al.

FOREIGN PATENT DOCUMENTS

DE 102005044841 3/2006
 DE 102006000948 10/2006
 DE 102005042766 1/2007
 DE 102005043285 1/2007
 DE 69835968 5/2007
 DE 102009020285 11/2010

DE 102010025001 12/2011
 EP 0243114 10/1987
 EP 1158916 7/2004
 EP 1158915 9/2004
 EP 1468655 10/2004
 EP 1255498 11/2005
 EP 1897509 3/2008
 EP 1702577 11/2008
 EP 2016918 1/2009
 EP 1677693 4/2009
 FR 2667913 4/1992
 FR 2739151 3/1997
 FR 2886535 12/2006
 WO 9709000 3/1997
 WO 9829058 7/1998
 WO 0154601 8/2001
 WO 02096309 12/2002
 WO 2005041796 5/2005
 WO 2005053111 6/2005
 WO 2006014436 2/2006
 WO 2007025520 3/2007
 WO 0053110 9/2009
 WO 2010059497 5/2010
 WO 2011163092 12/2011
 WO 2012000627 1/2012

OTHER PUBLICATIONS

Easley, Mark E., M.D., et al., Current Concepts Review: Hallux Valgus Part II: Operative Treatment, *Foot & Ankle International*, vol. 28/ No. 6, 748-758 (Jun. 2007).
 Iselin, Lukas D. et al., Operative Management of Common Forefoot Deformities A Representative Survey of Australian Orthopaedic Surgeons, *Foot & Ankle Specialist*, vol. X/ No. X, 1-7 (2012).
 Miller, Michael J., DMP et al., Inverted Z-scarf Osteotomy for Hallux Valgus Deformity Correction: Intermediate-term Results in 55 Patients, *The Journal of Foot and Ankle Surgery*, 50: 55-61 (2011).
 Dereymaeker, Greta, MD, PhD, Scarf Osteotomy for Correction of Hallux Valgus—Surgical Technique and Results as Compared to Distal Chevron Osteotomy, *The Hallux*, vol. 5/ No. 3, 513-523 (Sep. 2000).
 Steck, Jerome K., DPM, Long Z-Osteotomy: A Review and New Modification to Correct Troughing, *The Journal of Foot and Ankle Surgery*, vol. 40/ No. 5, 305-310 (Sep./Oct. 2001).
 Adam, Stephanie P., Do et al., Outcomes after Scarf Osteotomy for Treatment of Adult Hallux Valgus Deformity, *Clinical Orthopaedics and Related Research*, 469: 854-859 (2011).
 Trnka, Hans-Jorg, MD et al., Six First Metatarsal Shaft Osteotomies—Mechanical and Immobilization Comparisons, *Clinical Orthopaedics and Related Research*, No. 381, 256-265 (Mar. 10, 2000).
 Aminian, Arash, M.D. et al., Scarf Osteotomy for Hallux Valgus Deformity: An Intermediate Followup of Clinical and Radiographic Outcomes, *Foot & Ankle International*, vol. 27/ No. 11, 883-886 (Nov. 2006).
 Weil, Lowell Scott, DPM, Scarf Osteotomy for Correction of Hallux Valgus—Historical Perspective, Surgical Technique, and Results, *The Hallux*, vol. 5/ No. 3, 559-580 (Sep. 2000).
 Vienne, Patrick, M.D. et al., Comparative Mechanical Testing of Different Geometric Designs of Distal First Metatarsal Osteotomies, *Foot & Ankle International*, vol. 28/ No. 2, 232-236 (Feb. 2007).
 Lipscombe, Stephen, MRCS et al., Scarf Osteotomy for the Correction of Hallux Valgus: Midterm Clinical Outcome, *The Journal of Foot and Ankle Surgery*, vol. 47/ No. 4, 273-277 (Jul./Aug. 2008).
 Barouk, Louis Samuel, MD, Scarf Osteotomy for Hallux Valgus Correction—Local Anatomy, Surgical Technique, and Combination with Other Forefoot Procedures, *The Hallux*, vol. 5/ No. 3, 525-557 (Sep. 2000).
 Crevoisier, Xavier et al., the Scarf Osteotomy for the Treatment of Hallux Valgus Deformity: A Review of 84 Cases, *Foot & Ankle International*, vol. 22/ No. 12, 970-976 (Dec. 2001).
 Coetzee, J. Chris, M.D., Scarf Osteotomy for Hallux Valgus Repair: The Dark Side, *Foot & Ankle International*, vol. 24/ No. 1, 29-33 (Jan. 2003).

(56)

References Cited

OTHER PUBLICATIONS

Interventional Procedures Programme—Interventional procedure overview of surgical correction of hallux valgus using minimal access techniques, National Institute for Health and Clinical Excellence, p. 1, 9.

Comparison of Preoperative to Postoperative Measurement at 6 Weeks, 1 and 2 Years Postoperative, Table 1.

O'Briain, David E. et al., Use of A Geometric Formula to Improve the Radiographic Correction Achieved by the Scarf Osteotomy, *Foot & Ankle International*, vol. 33/ No. 8, 647-654 (Aug. 2012).

International Search Report for PCT/DE2010/075167, mailed Apr. 15, 2011.

International Search Report for PCT/2006/001508, mailed Feb. 8, 2007.

"Orthopaedic Product News", Aug. 2005, Retrieved from the Internet: URL:http://www.orthoworld.com/us_opn-2005-08.pdf [retrieved on May 26, 2009], p. 30, Hallux Valgus Correction with a Low Profile Locking Plate.

Myerson, Mark, M.D., "Correction of Hallux Valgus Deformity with the Ludloff Osteotomy Surgical Technique", Joint Meeting of American Orthopedic Foot & Ankle Society and the Japanese Surgery Society for the Foot, Nov. 13-15, 1997, Waikoloa, HI.

Acevedo, Jorge I, Sammarco, V. James, Boucher, Henry R., Parks, Bert G., Schon, Lew C., Myerson, Mark S; Mechanical Comparison of Cyclic Loading in Five Different First Metatarsal Shaft Osteotomies; *Foot & Ankle International*, Aug. 2002; vol. 23, No. 8, pp. 711-716.

Cisar, J., Holz, U, Jenninger, W., Uhlig. Chr.; Die Osteotomie nach Ludloff bei der Hallux-valgus-Operation; *Aktuelle Traumatol.* 13; 1983; pp. 247-249.

Hyer, Christopher F., Glover, Jason P., Berlet, Gregory C., Philbin, Terrence, M, Lee, Thomas H.; A Comparison of the Crescentic and Mau Osteotomies for Correction of Hallux Valgus; *Journal of Foot and Ankle Surgery*; Mar./Apr. 2008; vol. 47, No. 2; pp. 103-111.

Ludloff, Prof. Dr. K.; Die Beseitigung des Hallux valgus durch die schrage planta-dorsale Osteotomie des Metatarsus I.; *Arch. Klin. Chir.*; 110:364-387; 1918.

Mau, C., Lauber, H.J.; Die operative Behandlung des Hallux valgus (Nachuntersuchungen); 1926, 197:361-377.

Sammarco, V. James; Surgical Strategies: Mau Osteotomy for Correction of Moderate and Severe Hallux Valgus Deformity; *Foot & Ankle International*; Jul. 2007; 28(7); pp. 857-864.

Saxena, Amol, McCammon, Derek; The Ludloff Osteotomy: A Critical Analysis; *Journal of Foot and Ankle Surgery*; 1997; vol. 36, No. 2, pp. 100-105.

Trnka, H.-J., Hofstaetter, S.G., Hofstaetter, J.G., Gruber, F., Adams Jr., S.B., Easley, M.E.; Intermediate-Term Results of the Ludloff Osteotomy in One Hundred and Eleven Feet; *The Journal of Bone and Joint Surgery*; Mar. 2008; vol. 90-A(3); pp. 531-539.

International Search Report for PCT/DE2012/100248 dated Dec. 20, 2012.

Partial International Search Report for PCT/IB2014/001111 dated Sep. 16, 2014.

* cited by examiner

FIG. 1

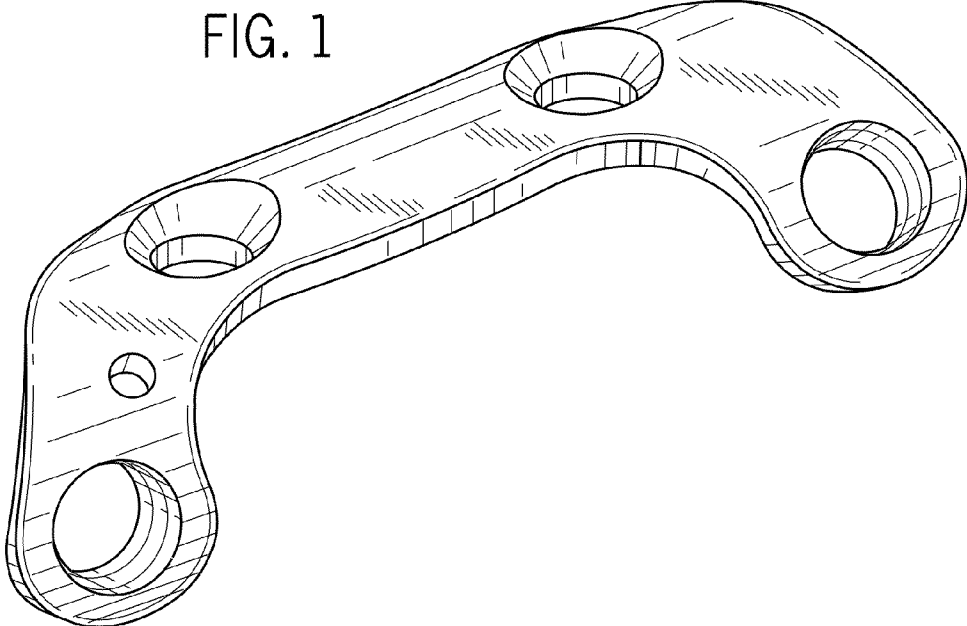
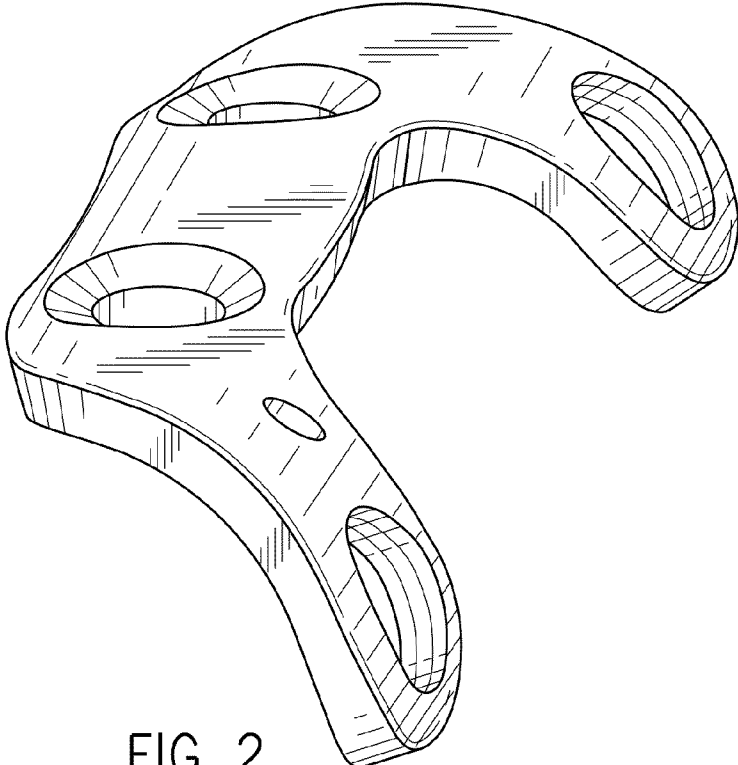


FIG. 2



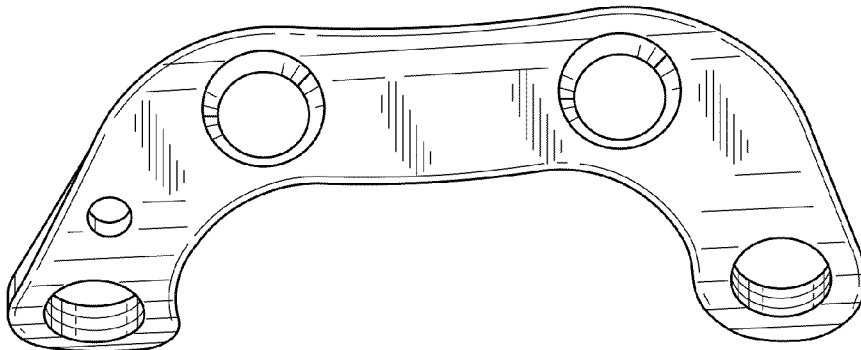


FIG. 3

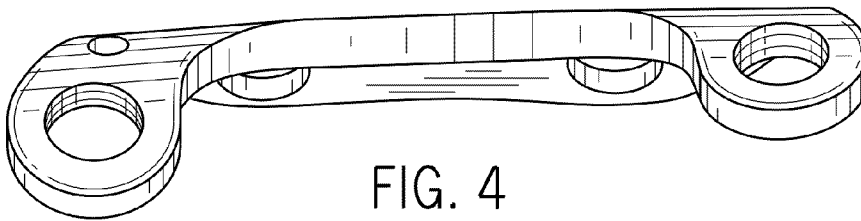


FIG. 4

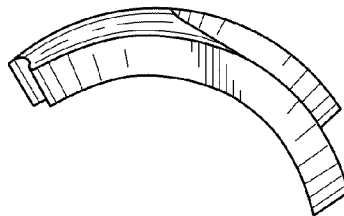


FIG. 5

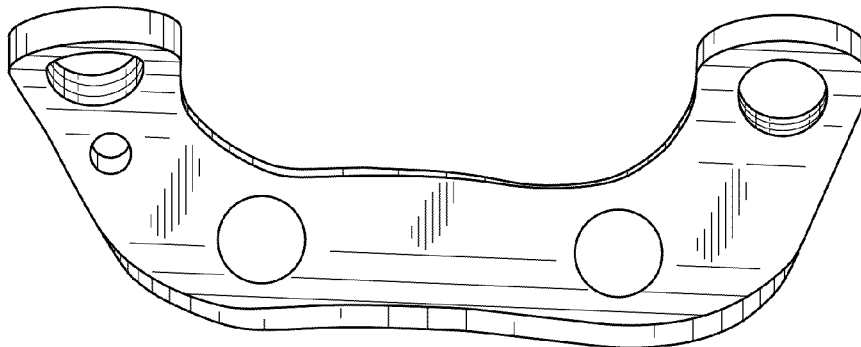


FIG. 6