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(12) **United States Design Patent**
Goodman

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(54) **KNIFE FOR OPEN VESSEL SEALER**
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5,100,420 A 3/1992 Green et al.
5,258,001 A 11/1993 Corman
D343,453 S 1/1994 Noda
(Continued)

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FOREIGN PATENT DOCUMENTS

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CN 201299462 Y 9/2009
DE 2415263 A1 10/1975
(Continued)

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OTHER PUBLICATIONS

US. Appl. No. 08/926,869, filed Sep. 10, 1997, James G. Chandler.
(Continued)

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CPC A61B 17/32; A61B 17/064; A61B 17/068;
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See application file for complete search history.

(57) **CLAIM**
The ornamental design for a knife for open vessel sealer, as shown and described.

(56) **References Cited**

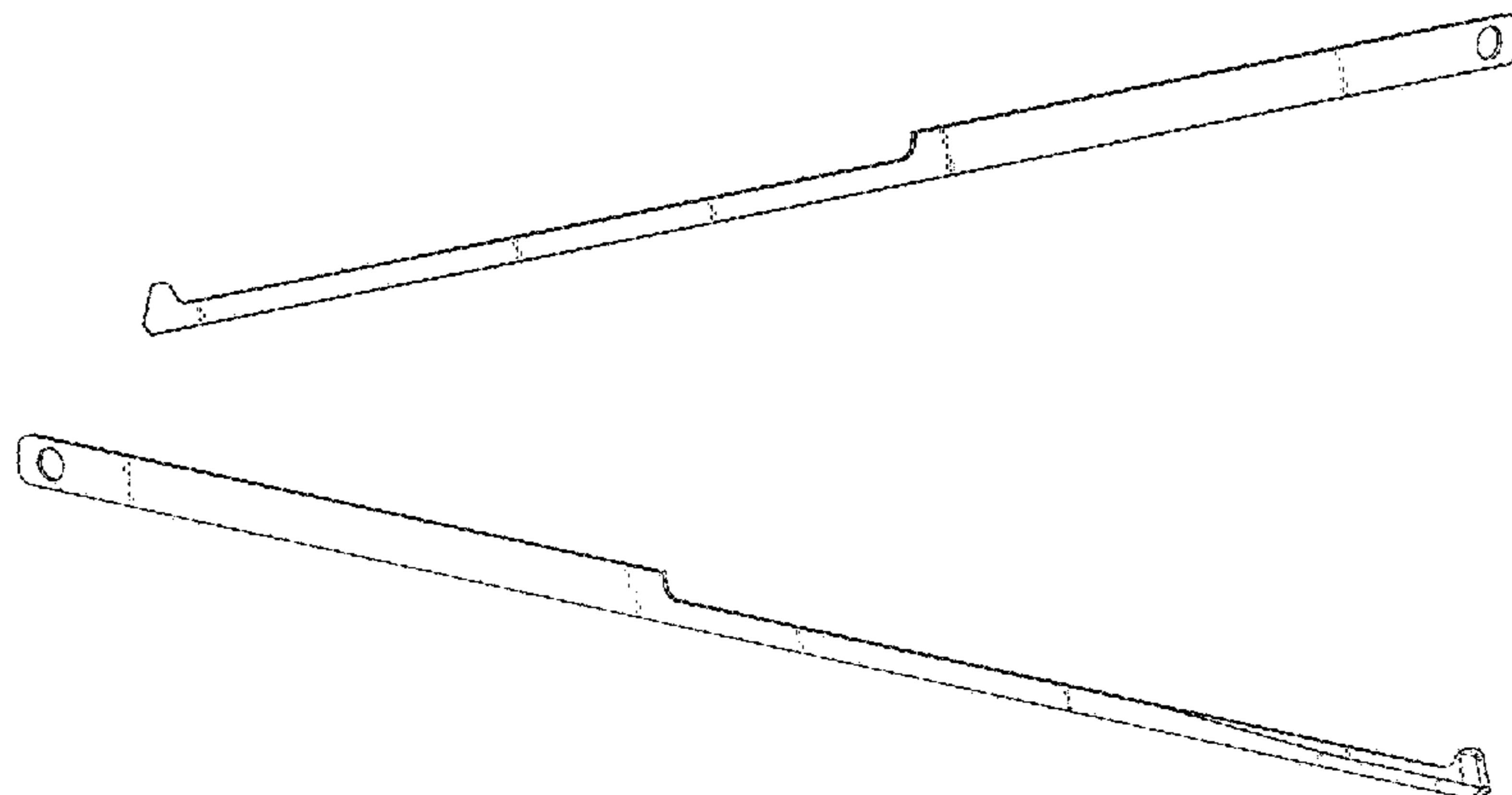
DESCRIPTION

U.S. PATENT DOCUMENTS

D249,549 S 9/1978 Pike
D263,020 S 2/1982 Rau, III
D291,595 S * 8/1987 Armstrong D24/147
D295,893 S 5/1988 Sharkany et al.
D295,894 S 5/1988 Sharkany et al.
4,763,669 A 8/1988 Jaeger
D298,353 S 11/1988 Manno
D299,413 S 1/1989 DeCarolis

FIG. 1 is a front, left perspective view of a knife for open vessel sealer in accordance with the present design; FIG. 2 is a front, right perspective view of the knife for open vessel sealer of FIG. 1; FIG. 3 is a front view of the knife for open vessel sealer of FIG. 1; FIG. 4 is a rear view of the knife for open vessel sealer of FIG. 1; FIG. 5 is a right side view of the knife for open vessel sealer of FIG. 1; FIG. 6 is a left side view of the knife for open vessel sealer of FIG. 1; FIG. 7 is a top view of the knife for open vessel sealer of FIG. 1; and, FIG. 8 is a bottom view of the knife for open vessel sealer of FIG. 1.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,304,203 A	4/1994	El-Mallawany et al.	7,641,653 B2	1/2010	Dalla Betta et al.
D348,930 S	7/1994	Olson	D617,900 S	6/2010	Kingsley et al.
D349,341 S	8/1994	Lichtman et al.	D617,901 S	6/2010	Unger et al.
5,344,424 A	9/1994	Roberts et al.	D617,902 S	6/2010	Twomey et al.
D353,002 S *	11/1994	Tovey D24/133	D617,903 S	6/2010	Unger et al.
D354,564 S	1/1995	Medema	D618,798 S	6/2010	Olson et al.
D358,643 S *	5/1995	Knepshield D24/146	D621,503 S	8/2010	Oftan et al.
D358,887 S	5/1995	Feinberg	D627,462 S	11/2010	Kingsley
5,540,685 A	7/1996	Parins et al.	D628,289 S	11/2010	Romero
5,554,164 A *	9/1996	Wilson A61B 17/07207 227/19	D628,290 S	11/2010	Romero
5,578,052 A	11/1996	Koros et al.	7,854,185 B2	12/2010	Zhang et al.
5,611,808 A	3/1997	Hossain et al.	D630,324 S	1/2011	Reschke
5,618,294 A	4/1997	Aust et al.	7,896,878 B2	3/2011	Johnson et al.
D384,413 S	9/1997	Zlock et al.	D649,249 S	11/2011	Guerra
5,665,100 A	9/1997	Yoon	D649,643 S	11/2011	Allen, IV et al.
5,752,644 A	5/1998	Bolanos et al.	8,147,489 B2	4/2012	Moses et al.
H001745 H	8/1998	Paraschac	D661,394 S	6/2012	Romero et al.
5,814,043 A	9/1998	Shapeton	8,298,233 B2	10/2012	Mueller
D402,028 S	12/1998	Grimm et al.	D670,808 S	11/2012	Moua et al.
D408,018 S	4/1999	McNaughton	8,366,709 B2	2/2013	Schechter et al.
5,913,874 A	6/1999	Bems et al.	8,394,096 B2	3/2013	Moses et al.
5,960,544 A	10/1999	Beyers	D680,220 S	4/2013	Rachlin
D416,089 S	11/1999	Barton et al.	8,409,246 B2	4/2013	Kerr et al.
6,050,996 A	4/2000	Schmaltz et al.	8,409,247 B2	4/2013	Garrison et al.
D424,694 S	5/2000	Tetzlaff et al.	8,425,504 B2	4/2013	Orton et al.
D425,201 S	5/2000	Tetzlaff et al.	8,425,511 B2	4/2013	Olson
H001904 H	10/2000	Yates et al.	8,430,877 B2	4/2013	Kerr et al.
6,293,954 B1	9/2001	Fogarty et al.	8,439,913 B2	5/2013	Horner et al.
D449,886 S	10/2001	Tetzlaff et al.	8,469,716 B2	6/2013	Fedotov et al.
6,329,778 B1	12/2001	Culp et al.	8,469,991 B2	6/2013	Kerr
6,334,861 B1	1/2002	Chandler et al.	8,469,992 B2	6/2013	Roy et al.
D453,923 S	2/2002	Olson	8,480,671 B2	7/2013	Mueller
D454,951 S	3/2002	Bon	8,491,624 B2	7/2013	Kerr et al.
D457,958 S	5/2002	Dycus et al.	8,491,625 B2	7/2013	Horner
D457,959 S	5/2002	Tetzlaff et al.	8,491,626 B2	7/2013	Roy et al.
6,406,485 B1	6/2002	Hossain et al.	8,512,336 B2	8/2013	Couture
H002037 H	7/2002	Yates et al.	8,540,749 B2	9/2013	Garrison et al.
6,464,704 B2	10/2002	Schmaltz et al.	8,551,091 B2	10/2013	Couture et al.
D465,281 S	11/2002	Lang	8,556,929 B2	10/2013	Harper et al.
D466,209 S	11/2002	Bon	8,568,397 B2	10/2013	Homer et al.
6,511,480 B1	1/2003	Tetzlaff et al.	8,568,408 B2	10/2013	Townsend et al.
6,673,092 B1	1/2004	Bacher	8,585,736 B2	11/2013	Horner et al.
D493,888 S	8/2004	Reschke	8,591,510 B2	11/2013	Allen, IV et al.
D496,997 S	10/2004	Dycus et al.	8,597,295 B2	12/2013	Kerr
D499,181 S	11/2004	Dycus et al.	8,623,018 B2	1/2014	Horner et al.
D502,994 S	3/2005	Blake, III	8,623,032 B2 *	1/2014	Diduch A61B 17/0469 606/144
D509,297 S	9/2005	Wells	8,628,557 B2	1/2014	Collings et al.
D523,554 S *	6/2006	Weisel D24/145	8,641,712 B2	2/2014	Couture
D525,361 S	7/2006	Hushka	8,647,343 B2	2/2014	Chojin et al.
D530,421 S *	10/2006	Topper D24/145	8,652,135 B2	2/2014	Nau, Jr.
D531,311 S	10/2006	Guerra et al.	8,663,222 B2	3/2014	Anderson et al.
7,118,570 B2	10/2006	Tetzlaff et al.	8,672,939 B2	3/2014	Garrison
D533,274 S	12/2006	Visconti et al.	8,679,098 B2	3/2014	Hart
D533,942 S	12/2006	Kerr et al.	8,685,009 B2	4/2014	Chernov et al.
D535,027 S	1/2007	James et al.	8,685,021 B2	4/2014	Chernov et al.
D538,425 S *	3/2007	Awh D24/133	8,685,056 B2	4/2014	Evans et al.
D538,932 S	3/2007	Malik	8,702,737 B2	4/2014	Chojin et al.
D541,418 S	4/2007	Schechter et al.	8,702,749 B2	4/2014	Twomey
D541,611 S	5/2007	Aglassinger	8,734,445 B2	5/2014	Johnson et al.
D541,938 S	5/2007	Kerr et al.	8,740,898 B2	6/2014	Chojin et al.
D545,432 S	6/2007	Watanabe	8,745,840 B2	6/2014	Hempstead et al.
D546,647 S *	7/2007	Gullicks D8/20	8,747,434 B2	6/2014	Larson et al.
D547,154 S	7/2007	Lee	8,756,785 B2	6/2014	Allen, IV et al.
7,270,672 B1 *	9/2007	Singer A61B 17/0469 112/136	8,784,418 B2	7/2014	Romero
7,329,257 B2	2/2008	Kanehira et al.	8,795,269 B2	8/2014	Garrison
D564,662 S	3/2008	Moses et al.	8,808,288 B2	8/2014	Reschke
D567,040 S *	4/2008	Mueller D8/20	8,814,864 B2	8/2014	Gilbert
D567,943 S	4/2008	Moses et al.	8,840,639 B2	9/2014	Gerhardt, Jr. et al.
D575,395 S	8/2008	Hushka	8,845,636 B2	9/2014	Allen, IV et al.
D575,401 S	8/2008	Hixson et al.	8,852,185 B2	10/2014	Twomey
7,431,730 B2	10/2008	Viola	8,852,228 B2	10/2014	Nau, Jr.
D582,038 S	12/2008	Swoyer et al.	8,858,553 B2	10/2014	Chojin
D601,251 S *	9/2009	Horton D24/133	8,864,753 B2	10/2014	Nau, Jr. et al.
			8,864,795 B2	10/2014	Kerr et al.
			8,887,373 B2	11/2014	Brandt et al.
			8,888,771 B2	11/2014	Twomey
			8,888,775 B2	11/2014	Nau, Jr. et al.
			8,898,888 B2	12/2014	Brandt et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

8,900,232 B2	12/2014	Ourada	2011/0257680 A1	10/2011	Reschke et al.
8,906,018 B2	12/2014	Rooks et al.	2011/0270245 A1	11/2011	Horner et al.
8,920,421 B2	12/2014	Rupp	2011/0270251 A1	11/2011	Horner et al.
8,932,293 B2	1/2015	Chernov et al.	2011/0276049 A1	11/2011	Gerhardt
8,936,614 B2	1/2015	Allen, IV	2011/0295313 A1	12/2011	Kerr
8,939,972 B2	1/2015	Twomey	2012/0059372 A1	3/2012	Johnson
8,945,175 B2	2/2015	Twomey	2012/0059409 A1	3/2012	Reschke et al.
8,961,504 B2	2/2015	Hoarau et al.	2012/0083785 A1	4/2012	Roy et al.
8,968,283 B2	3/2015	Kharin	2012/0083786 A1	4/2012	Artale et al.
8,968,305 B2	3/2015	Dumbauld et al.	2012/0083827 A1	4/2012	Artale et al.
8,968,316 B2	3/2015	Roy et al.	2012/0123402 A1	5/2012	Chernov et al.
8,968,357 B2	3/2015	Mueller	2012/0123404 A1	5/2012	Craig
8,968,359 B2	3/2015	Kerr et al.	2012/0123410 A1	5/2012	Craig
9,005,200 B2	4/2015	Roy et al.	2012/0130367 A1	5/2012	Garrison
9,017,372 B2	4/2015	Artale et al.	2012/0136354 A1	5/2012	Rupp
9,028,484 B2	5/2015	Craig	2012/0172868 A1	7/2012	Twomey et al.
9,028,492 B2	5/2015	Kerr et al.	2012/0172873 A1	7/2012	Artale et al.
9,028,495 B2	5/2015	Mueller et al.	2012/0172924 A1	7/2012	Allen, IV
9,039,704 B2	5/2015	Joseph	2012/0184989 A1	7/2012	Twomey
9,039,732 B2	5/2015	Sims et al.	2012/0184990 A1	7/2012	Twomey
9,084,608 B2	7/2015	Larson et al.	2012/0209263 A1	8/2012	Sharp et al.
9,113,933 B2	8/2015	Chernova et al.	2012/0215219 A1	8/2012	Roy et al.
9,113,934 B2	8/2015	Chernov et al.	2012/0239034 A1	9/2012	Horner et al.
9,161,807 B2	10/2015	Garrison	2012/0253344 A1	10/2012	Dumbauld et al.
9,211,657 B2	12/2015	Ackley et al.	2012/0259331 A1	10/2012	Garrison
9,265,568 B2	2/2016	Chernov et al.	2012/0265241 A1	10/2012	Hart et al.
9,333,002 B2	5/2016	Garrison	2012/0283727 A1	11/2012	Twomey
9,381,059 B2	7/2016	Garrison	2012/0296205 A1	11/2012	Chernov et al.
9,456,870 B2	10/2016	Chernov et al.	2012/0296238 A1	11/2012	Chernov et al.
9,498,278 B2	11/2016	Couture et al.	2012/0296239 A1	11/2012	Chernov et al.
9,498,279 B2	11/2016	Artale et al.	2012/0296317 A1	11/2012	Chernov et al.
9,504,519 B2	11/2016	Kerr et al.	2012/0296323 A1	11/2012	Chernov et al.
9,585,709 B2	3/2017	Krapohl	2012/0296324 A1	11/2012	Chernov et al.
9,615,877 B2	4/2017	Tyrrell et al.	2012/0296334 A1	11/2012	Kharin
D788,302 S *	5/2017	O'Neill D24/146	2012/0303025 A1	11/2012	Garrison
9,655,672 B2	5/2017	Artale et al.	2012/0323238 A1	12/2012	Tyrrell et al.
D803,644 S *	11/2017	Schiff D8/19	2012/0330308 A1	12/2012	Joseph
2003/0018332 A1	1/2003	Schmaltz et al.	2012/0330309 A1	12/2012	Joseph
2003/0109875 A1	6/2003	Tetzlaff et al.	2013/0018364 A1	1/2013	Chernov et al.
2003/0199869 A1	10/2003	Johnson et al.	2013/0018372 A1	1/2013	Sims et al.
2003/0220637 A1	11/2003	Truckai et al.	2013/0018411 A1	1/2013	Collings et al.
2003/0229344 A1	12/2003	Dycus et al.	2013/0022495 A1	1/2013	Allen, IV et al.
2004/0092927 A1	5/2004	Podhajsky et al.	2013/0030432 A1	1/2013	Garrison et al.
2005/0070889 A1	3/2005	Nobis et al.	2013/0041370 A1	2/2013	Unger
2005/0107784 A1	5/2005	Moses et al.	2013/0046295 A1	2/2013	Kerr et al.
2005/0113826 A1	5/2005	Johnson et al.	2013/0046303 A1	2/2013	Evans et al.
2005/0113828 A1	5/2005	Shields et al.	2013/0046306 A1	2/2013	Evans et al.
2005/0159745 A1	7/2005	Truckai et al.	2013/0046337 A1	2/2013	Evans et al.
2006/0253126 A1	11/2006	Bjerken et al.	2013/0060250 A1	3/2013	Twomey et al.
2007/0062017 A1	3/2007	Dycus et al.	2013/0066318 A1	3/2013	Kerr
2007/0088356 A1	4/2007	Moses et al.	2013/0071282 A1	3/2013	Fry
2007/0179499 A1	8/2007	Garrison	2013/0072927 A1	3/2013	Allen, IV et al.
2007/0260241 A1	11/2007	Dalla Betta et al.	2013/0079760 A1	3/2013	Twomey et al.
2008/0215048 A1	9/2008	Hafner et al.	2013/0079762 A1	3/2013	Twomey et al.
2009/0131934 A1	5/2009	Odom et al.	2013/0079774 A1	3/2013	Whitney et al.
2009/0171353 A1	7/2009	Johnson et al.	2013/0085491 A1	4/2013	Twomey et al.
2009/0182327 A1	7/2009	Unger	2013/0085496 A1	4/2013	Unger et al.
2009/0240246 A1	9/2009	Deville et al.	2013/0096590 A1 *	4/2013	Luttrull A61B 17/3417 606/167
2009/0302090 A1	12/2009	Shah	2013/0103030 A1	4/2013	Garrison
2009/0308909 A1	12/2009	Nalagatla et al.	2013/0103031 A1	4/2013	Garrison
2010/0016857 A1	1/2010	McKenna et al.	2013/0103035 A1	4/2013	Horner et al.
2010/0130977 A1	5/2010	Garrison et al.	2013/0123837 A1	5/2013	Roy et al.
2010/0179545 A1	7/2010	Twomey et al.	2013/0138101 A1	5/2013	Kerr
2010/0179547 A1	7/2010	Cunningham et al.	2013/0138102 A1	5/2013	Twomey et al.
2010/0228250 A1	9/2010	Brogna	2013/0138129 A1	5/2013	Garrison et al.
2010/0274244 A1	10/2010	Heard	2013/0144284 A1	6/2013	Behnke, II et al.
2010/0292691 A1	11/2010	Brogna	2013/0178852 A1	7/2013	Allen, IV et al.
2010/0305567 A1	12/2010	Swanson	2013/0185922 A1	7/2013	Twomey et al.
2011/0060314 A1	3/2011	Wallace et al.	2013/0190753 A1	7/2013	Garrison et al.
2011/0060356 A1	3/2011	Reschke et al.	2013/0190760 A1	7/2013	Allen, IV et al.
2011/0072638 A1	3/2011	Brandt et al.	2013/0197503 A1	8/2013	Orszulak
2011/0087218 A1	4/2011	Boudreaux et al.	2013/0226177 A1	8/2013	Brandt et al.
2011/0218530 A1	9/2011	Reschke	2014/0221994 A1	8/2014	Reschke
2011/0238065 A1	9/2011	Hunt et al.	2014/0221995 A1	8/2014	Guerra et al.
2011/0238067 A1	9/2011	Moses et al.	2014/0221999 A1	8/2014	Cunningham et al.
			2014/0228842 A1	8/2014	Dycus et al.
			2014/0230243 A1	8/2014	Roy et al.
			2014/0236149 A1	8/2014	Kharin et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2014/0276962 A1* 9/2014 Hod A61B 17/076
606/138
2017/0252037 A1* 9/2017 Matsutani A61L 31/00
2017/0347997 A1* 12/2017 Breslich A61B 17/06066

FOREIGN PATENT DOCUMENTS

DE	02514501	A1	10/1976
DE	2627679	A1	1/1977
DE	03423356	C2	6/1986
DE	03612646	A1	4/1987
DE	8712328	U1	2/1988
DE	04303882	C2	2/1995
DE	04403252	A1	8/1995
DE	19515914	C1	7/1996
DE	19506363	A1	8/1996
DE	29616210	U1	11/1996
DE	19608716	C1	4/1997
DE	19751106	A1	5/1998
DE	19751108	A1	5/1999
DE	10045375	C2	10/2002
DE	202007009165	U1	8/2007
DE	202007009317	U1	8/2007
DE	202007016233	U1	1/2008
DE	19738457	B4	1/2009
DE	102004026179	B4	1/2009
DE	102008018406	B3	7/2009
EP	1159926	A3	3/2003
EP	2353535	A1	8/2011
JP	61-501068		9/1984
JP	11-47150	A	6/1989
JP	6-502328		3/1992
JP	5-5106		1/1993
JP	05-40112		2/1993
JP	6-121797	A	5/1994
JP	6-285078	A	10/1994
JP	6-511401		12/1994
JP	06343644	A	12/1994
JP	H07-265328	A	10/1995
JP	H08-56955	A	3/1996
JP	08252263	A	10/1996
JP	3-317934	A	12/1996
JP	H09-10223	A	1/1997
JP	9-122138	A	5/1997
JP	H10-24051	A	1/1998
JP	10-155798	A	6/1998
JP	11-070124	A	3/1999
JP	11-169381	A	6/1999
JP	11-192238	A	7/1999
JP	H11-244298	A	9/1999
JP	2000-102545	A	4/2000
JP	2000342599	A	12/2000
JP	2000350732	A	12/2000
JP	2001-8944		1/2001
JP	2001029356	A	2/2001

OTHER PUBLICATIONS

U.S. Appl. No. 09/177,950, filed Oct. 23, 1998, Randel A. Frazier.
U.S. Appl. No. 09/387,883, filed Sep. 1, 1999, Dale F. Schmaltz, abandoned.
U.S. Appl. No. 09/591,328, filed Jun. 9, 2000, Thomas P. Ryan.
U.S. Appl. No. 12/336,970, filed Dec. 17, 2008, Paul R. Sremeich, abandoned.
U.S. Appl. No. 13/183,856, filed Jul. 15, 2011, John R. Twomey.
U.S. Appl. No. 13/185,593, filed Jul. 19, 2011, James D. Allen, IV.
Michael Choti, "Abdominoperineal Resection with the LigaSure Vessel Sealing System and LigaSure Atlas 20 cm Open Instrument" Innovations That Work, .quadrature.Jun. 2003.
Chung et al., "Clinical Experience of Sutureless Closed Hemorrhoidectomy with LigaSure" Diseases of the Colon & Rectum vol. 46, No. 1 Jan. 2003.

Tinkler L.F., "Combined Diathermy and Suction Forceps", Feb. 6, 1967 (Feb. 6, 1965), British Medical Journal Feb. 3, 1976, vol. 1, nr. 5431 p. 361, ISSN: 0007-1447.

Carbonell et al., "Comparison of theGyrus PlasmaKinetic Sealer and the Valleylab LigaSure Device in the Hemostasis of Small, Medium, and Large-Sized Arteries" Carolinas Laparoscopic and Advanced Surgery Program, Carolinas Medical Center,Charlotte,NC; Date: Aug. 2003.

Peterson et al. "Comparison of Healing Process Following Ligation with Sutures and Bipolar Vessel Sealing" Surgical Technology International (2001).

E. David Crawford "Evaluation of a New Vessel Sealing Device in Urologic Cancer Surgery" Sales/Product Literature 2000.

Johnson et al. "Evaluation of the LigaSure Vessel Sealing System in Hemorrhoidectomy" American College of Surgeons (Acs) Clinica Congress Poster (2000).

Muller et al., "Extended Left Hemicolectomy Using the LigaSure Vessel Sealing System" Innovations That Work,quadrature.Sep. 1999.

Kennedy et al. "High-burst-strength, feedback-controlled bipolar vessel sealing" Surgical Endoscopy (1998) 12: 876-878.

Carus et al., "Initial Experience With the LigaSure Vessel Sealing System in Abdominal Surgery" Innovations That Work,quadrature. Jun. 2002.

Heniford et al. "Initial Research and Clinical Results with an Electrothermal Bipolar Vessel Sealer" Oct. 1999.

Herman et al., "Laparoscopic Intestinal Resection With the LigaSure Vessel Sealing System: A Case Report"; Innovations That Work, Feb. 2002.

Koyle et al., "Laparoscopic Palomo Varicocele Ligation in Children and Adolescents" Pediatric Endosurgery & Innovative Techniques, vol. 6, No. 1, 2002.

W. Scott Helton, "LigaSure Vessel Sealing System: Revolutionary Hemostasis Product for General Surgery"; Sales/Product Literature 1999.

LigaSure Vessel Sealing System, the Seal of Confidence in General, Gynecologic, Urologic, and Laparoscopic Surgery; Sales/Product Literature; Apr. 2002.

Joseph Ortenberg "LigaSure System Used in Laparoscopic 1st and 2nd Stage Orchiopexy" Innovations That Work, Nov. 2002.

Sigel et al. "The Mechanism of Blood Vessel Closure by High Frequency Electrocoagulation" Surgery Gynecology & Obstetrics, Oct. 1965 pp. 823-831.

Sampayan et al, "Multilayer Ultra-High Gradient Insulator Technology" Discharges and Electrical Insulation in Vacuum, 1998. Netherlands Aug. 17-21, 1998; vol. 2, pp. 740-743.

Paul G. Horgan, "A Novel Technique for Parenchymal Division During Hepatectomy" The American Journal of Surgery, vol. 181, No. 3, Apr. 2001 pp. 236-237.

Benaron et al., "Optical Time-Of-Flight and Absorbance Imaging of Biologic Media", Science, American Association for the Advancement of Science, Washington, DC, vol. 259, Mar. 5, 1993, pp. 1463-1466.

Olsson et al. "Radical Cystectomy in Females" Current Surgical Techniques in Urology, vol. 14, Issue 3.

Palazzo et al. "Randomized clinical trial of Ligasure versus open haemorrhoidectomy" British Journal of Surgery 2002, 89, 154-157.

Levy et al. "Randomized Trial of Suture Versus Electrosurgical Bipolar Vessel Sealing in Vaginal Hysterectomy" Obstetrics & Gynecology, vol. 102, No. 1, Jul. 2003.

Bergdahl et al. "Studies on Coagulation and the Development of an Automatic Computerized Bipolar Coagulator" J. Neurosurg, vol. 75, Jul. 1991, pp. 148-151.

Strasberg et al. "A Phase I Study of the LigaSure Vessel Sealing System in Hepatic Surgery" Section of HPB Surger, Washington University School of Medicine, St. Louis MO, Presented at AHPBA, Feb. 2001.

Seyfan et al. "Sutureless Closed Hemorrhoidectomy: A New Technique" Annals of Surgery vol. 234 No. 1, Jul. 2001 pp. 21-24.

Levy et al., "Update on Hysterectomy—New Technologies and Techniques" OBG Management, Feb. 2003.

(56)

References Cited

OTHER PUBLICATIONS

Dulemba et al. "Use of a Bipolar Electrothermal Vessel Sealer in Laparoscopically Assisted Vaginal Hysterectomy" Sales/Product Literature; Jan. 2004.

Strasberg et al., "Use of a Bipolar Vessel-Sealing Device for Parenchymal Transection During Liver Surgery" *Journal of Gastrointestinal Surgery*, vol. 6, No. 4, Jul./Aug. 2002 pp. 569-574.

Sengupta et al., "Use of a Computer-Controlled Bipolar Diathermy System in Radical Prostatectomies and Other Open Urological Surgery" *ANZ Journal of Surgery* (2001) 71.9 pp. 538-540.

Rothenberg et al. "Use of the LigaSure Vessel Sealing System in Minimally Invasive Surgery in Children" *Int'l Pediatric Endosurgery Group (IPEG)* 2000.

Crawford et al. "Use of the LigaSure Vessel Sealing System in Urologic Cancer Surgery" *Grand Rounds in Urology* 1999 vol. 1 Issue 4 pp. 10-17.

Craig Johnson. "Use of the LigaSure Vessel Sealing System in Bloodless Hemorrhoidectomy" *That Work*, Mar. 2000.

Levy et al. "Use of a New Energy-based Vessel Ligation Device During Vaginal Hysterectomy" *Int'l Federation of Gynecology and Obstetrics (FIGO) World Congress* 1999.

E. David Crawford "Use of a Novel Vessel Sealing Technology in Management of the Dorsal Venous Complex" *Sales/Product Literature* 2000.

Jarrett et al., "Use of the LigaSure Vessel Sealing System for Peri-Hilar Vessels in Laparoscopic Nephrectomy" *Sales Product Literature*.

Crouch et al. "A Velocity-Dependent Model for Needle Insertion in Soft Tissue" *MICCAI 2005; LNCS 3750* pp. 624-632, Dated: 2005.

McLellan et al. "Vessel Sealing for Hemostasis During Pelvic Surgery" *Int'l Federation of Gynecology and Obstetrics FIGO World Congress* 2000, Washington, D.C.

McLellan et al. "Vessel Sealing for Hemostasis During Gynecologic Surgery" *Sales/Product Literature* 1999.

"Electrosurgery: A Historical Overview" *Innovations in Electrosurgery; Sales/Product Literature*; Dec. 31, 2000. (6 pages).

Johnson et al. "Evaluation of a Bipolar Electrothermal Vessel Sealing Device in Hemorrhoidectomy" *Sales/Product Literature*; Jan., 2004. (1 page).

Burdette et al. "In Vivo Probe Measurement Technique for Determining Dielectric Properties At VHG Through Microwave Frequencies", *IEEE Transactions on Microwave Theory and Techniques*, vol. MTT-28, No. 4, Apr. 1980 pp. 414-427.

Heniford et al. "Initial Results with an Electrothermal Bipolar Vessel Sealer" *Surgical Endoscopy* (2000) 15:799-801. (4 pages).

* cited by examiner

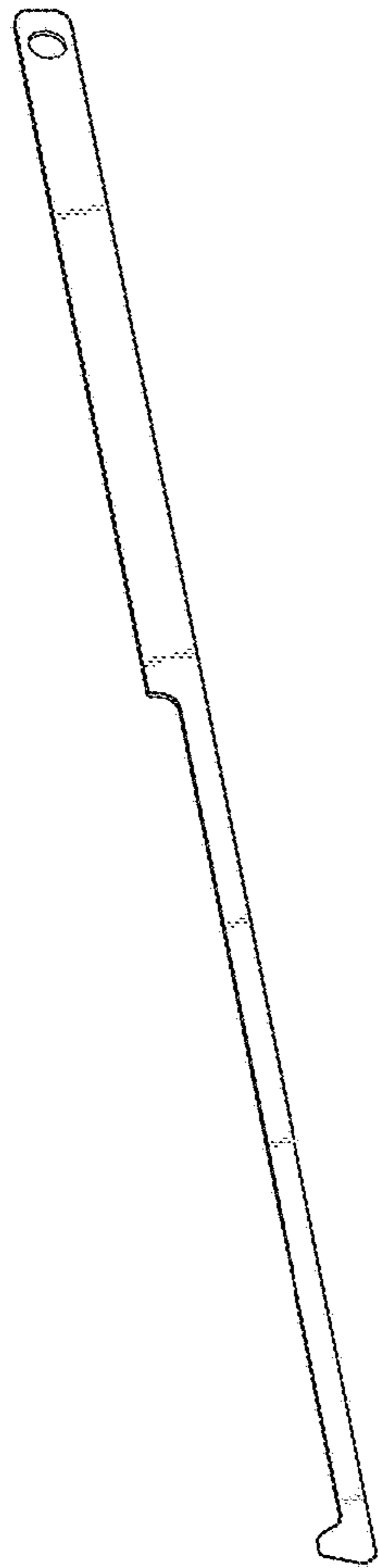


Fig. 1

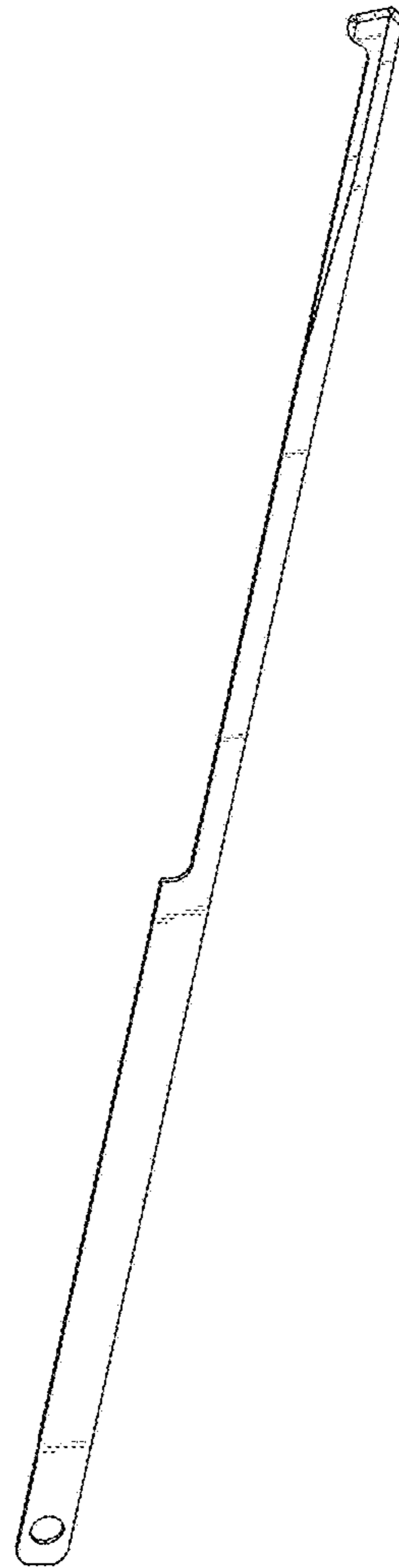


Fig. 2

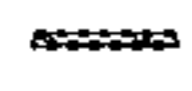


Fig. 3

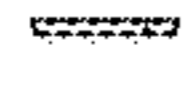


Fig. 4

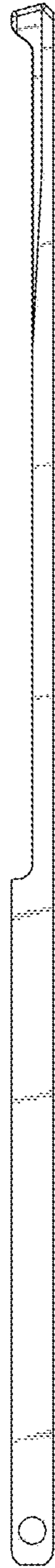


Fig. 5

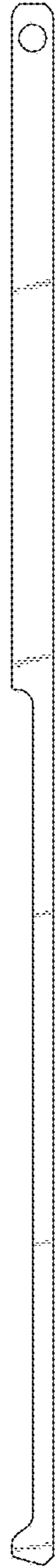


Fig. 6

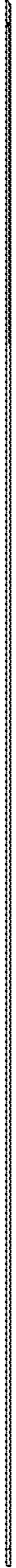


Fig. 7



Fig. 8