



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

(10) **Patent No.:** **US D824,027 S**
(45) **Date of Patent:** **** Jul. 24, 2018**

(54) **FINS FOR A SUPPORT COLUMN FOR A SURGICAL TRAJECTORY FRAME**

(71) Applicant: **MRI Interventions, Inc.**, Irvine, CA (US)

(72) Inventors: **Jesse Flores**, Perris, CA (US); **Rajesh Pandey**, Irvine, CA (US); **Maxwell Jerad Daly**, Redlands, CA (US)

(73) Assignee: **MRI Interventions, Inc.**, Irvine, CA (US)

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

(21) Appl. No.: **29/551,396**

(22) Filed: **Jan. 13, 2016**

(51) **LOC (11) Cl.** **24-02**

(52) **U.S. Cl.** **D24/140**
USPC **D24/140**

(58) **Field of Classification Search**
USPC D24/133, 140, 127, 128, 158, 160;
600/417, 424, 429; 248/304
CPC A61B 90/10; A61B 90/11; A61B 90/13;
A61B 90/14; A61B 5/055; A61B 5/0555;
A61B 5/00
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D161,569	S	*	1/1951	Bushman	.....	81/3.4
D216,698	S	*	3/1970	Startin	.....	D13/146
D242,265	S	*	11/1976	Ryder	.....	422/311
D287,456	S	*	12/1986	Kobos	.....	D8/14
D323,555	S	*	1/1992	Rasmusson	.....	D24/133
5,116,345	A		5/1992	Jewell et al.		
D329,178	S	*	9/1992	Ackerman	.....	D8/21
5,507,742	A		4/1996	Long et al.		
5,592,939	A		1/1997	Martinelli et al.		
D400,768	S	*	11/1998	Mason	.....	D8/14
5,913,820	A		6/1999	Bladen et al.		

(Continued)

OTHER PUBLICATIONS

YouTube—Clearpoint Demonstration Video, announced Sep. 15, 2015 [online], [site visited Mar. 16, 2018]. Available from internet, URL: <https://www.youtube.com/watch?v=IA45R_kvBR8>.*

(Continued)

Primary Examiner — Keli L Hill

Assistant Examiner — Karra S. Johnson

(74) *Attorney, Agent, or Firm* — Myers Bigel, P.A.

(57) **CLAIM**

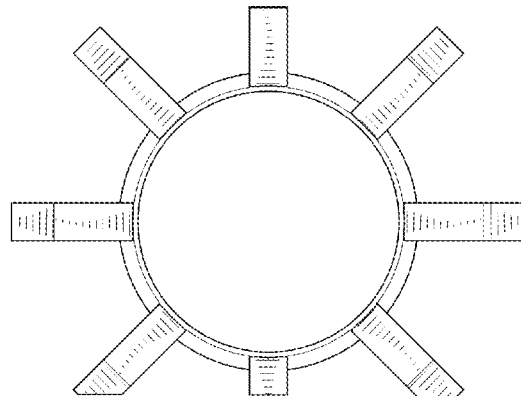
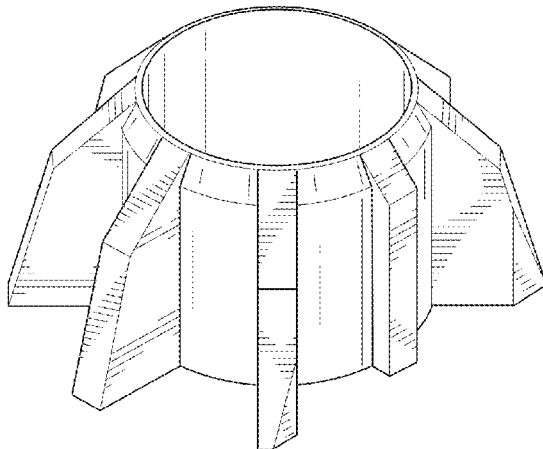
The ornamental design for fins for a support column for a surgical trajectory frame, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of fins for a support column for a surgical trajectory frame showing our design; FIG. 2 is a first side view thereof; FIG. 3 is an opposing side view thereof; FIG. 4 is a second side view, rotated 90 degrees from the first side view; FIG. 5 is an opposing side view thereof; FIG. 6 is a top view thereof; FIG. 7 is a bottom view thereof; FIG. 8 is an exemplary environmental view illustrating the fins for a support column for a surgical trajectory frame attached to a support column and table of a trajectory frame according to embodiments of the present invention; and, FIG. 9 is an exemplary environmental view illustrating the fins for a support column for a surgical trajectory frame attached to a trajectory frame according to embodiments of the present invention.

The broken lines shown are included for the purpose of illustrating unclaimed background articles that form no part of the claim.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

- | | | | | |
|--------------|------|---------|-------------------|-------------------------|
| 6,050,992 | A | 4/2000 | Nichols | |
| 6,167,311 | A | 12/2000 | Rezai | |
| D437,411 | S * | 2/2001 | Maeji | D24/127 |
| 6,356,786 | B1 | 3/2002 | Rezai et al. | |
| 6,405,079 | B1 | 6/2002 | Ansarinia | |
| 6,438,423 | B1 | 8/2002 | Rezai et al. | |
| 6,526,318 | B1 | 2/2003 | Ansarinia | |
| 6,539,263 | B1 | 3/2003 | Schiff et al. | |
| 6,609,030 | B1 | 8/2003 | Rezai et al. | |
| D483,862 | S * | 12/2003 | Murray | D24/119 |
| 6,675,037 | B1 | 1/2004 | Tsekos | |
| 6,708,064 | B2 | 3/2004 | Rezai | |
| 6,799,074 | B1 | 9/2004 | Thomas et al. | |
| D503,684 | S * | 4/2005 | Popovici | D13/150 |
| 6,920,347 | B2 | 7/2005 | Simon et al. | |
| 6,940,941 | B2 | 9/2005 | Gregerson et al. | |
| 6,949,106 | B2 | 9/2005 | Brock et al. | |
| 7,001,045 | B2 | 2/2006 | Gregerson et al. | |
| D524,613 | S * | 7/2006 | Chen | D8/21 |
| 7,106,825 | B2 | 9/2006 | Gregerson et al. | |
| 7,108,421 | B2 | 9/2006 | Gregerson et al. | |
| 7,188,998 | B2 | 3/2007 | Gregerson et al. | |
| D562,935 | S * | 2/2008 | Morgan | D22/199 |
| D573,711 | S * | 7/2008 | Johnson | D24/133 |
| 7,491,198 | B2 | 2/2009 | Kockro | |
| 7,658,879 | B2 | 2/2010 | Solar | |
| 7,706,600 | B2 | 4/2010 | Kreeger et al. | |
| 7,720,522 | B2 | 5/2010 | Solar et al. | |
| 7,730,563 | B1 | 6/2010 | Sklar et al. | |
| 7,751,865 | B2 | 7/2010 | Jacob et al. | |
| D631,734 | S * | 2/2011 | Fernandez | D8/380 |
| D647,627 | S * | 10/2011 | Wilkinson | D24/224 |
| 8,073,530 | B2 | 12/2011 | Solar et al. | |
| 8,150,494 | B2 | 4/2012 | Simon et al. | |
| 8,175,677 | B2 | 5/2012 | Sayler et al. | |
| 8,195,272 | B2 | 6/2012 | Piferi et al. | |
| 8,238,631 | B2 | 8/2012 | Hartmann et al. | |
| D670,153 | S * | 11/2012 | Wu | D8/356 |
| 8,315,689 | B2 | 11/2012 | Jenkins et al. | |
| 8,340,743 | B2 | 12/2012 | Jenkins et al. | |
| D675,130 | S * | 1/2013 | Senn | D12/42 |
| 8,374,677 | B2 | 2/2013 | Piferi et al. | |
| D683,616 | S * | 6/2013 | Noumi | D8/356 |
| 8,543,189 | B2 | 9/2013 | Paitel et al. | |
| 9,192,446 | B2 * | 11/2015 | Piferi | A61B 90/11 |
| D751,192 | S * | 3/2016 | She | D24/127 |
| D757,935 | S * | 5/2016 | Solingen | D24/133 |
| D777,111 | S * | 1/2017 | Zantout | D13/150 |
| D787,394 | S * | 5/2017 | Hammer | D12/180 |
| 2001/0007918 | A1 * | 7/2001 | Vilsmeier | A61B 90/36
600/426 |
| 2001/0018584 | A1 | 8/2001 | Bays | |
| 2003/0181810 | A1 | 9/2003 | Murphy et al. | |
| 2004/0075768 | A1 | 4/2004 | Law et al. | |
| 2004/0215071 | A1 | 10/2004 | Frank et al. | |
| 2005/0242055 | A1 | 11/2005 | Oh | |
| 2006/0282044 | A1 | 12/2006 | Mohammed | |
| 2007/0129629 | A1 | 6/2007 | Beauregard et al. | |
| 2008/0097193 | A1 | 4/2008 | Karmarkar | |
| 2008/0214922 | A1 | 9/2008 | Hartmann et al. | |
| 2008/0275466 | A1 | 11/2008 | Skakoon | |
| 2009/0112084 | A1 | 4/2009 | Piferi et al. | |
| 2009/0301986 | A1 * | 12/2009 | Phelan | B65D 41/0421
215/252 |
| 2010/0125240 | A1 | 5/2010 | Spedden et al. | |
| 2010/0229414 | A1 | 9/2010 | Nonni et al. | |
| 2011/0083672 | A1 | 4/2011 | Webster et al. | |
| 2011/0152860 | A1 | 6/2011 | Morejohn et al. | |
| 2012/0046542 | A1 | 2/2012 | Casavoy et al. | |
| 2012/0330135 | A1 | 12/2012 | Millahn et al. | |
| 2013/0060146 | A1 | 3/2013 | Yang et al. | |
| 2015/0031982 | A1 | 1/2015 | Piferi et al. | |
| 2016/0166808 | A1 * | 6/2016 | Highsmith | A61M 25/09
600/585 |
| 2017/0202631 | A1 | 7/2017 | Piferi et al. | |

OTHER PUBLICATIONS

- Wayback Machine—Historic Case Study Projects, announced Oct. 9, 2014 (dated via wayback machine) [online], [site visited Mar. 20, 2018]. Available from internet, URL: <<https://web.archive.org/web/20141009212425/http://www.tboake.com/SSEF1/re Renault2.shtml>>.*
- Brainlab Airo® Mobile Intraoperative CT, Brochure, 10 pages, 2014.
- Brainlab Buzz™ Digital O.R., Brochure, 12 pages, 2012.
- Brainlab Curve™ Image Guided Surgery, 2012, Brochure, 18 pages.
- Brainlab Kick® Purely Navigation Using Optical Tracking, 4 pages, Retrieved from the internet on Jan. 16, 2015 at URL <https://www.brainlab.com/en/surgery-products/overview-platform-products/kick-navigation/>.
- Brainlab, Image-Guided Surgery Platforms, 2 Pages, Retrieved from the internet on Oct. 1, 2014 at URL <https://www.brainlab.com/surgery-products/overview-platform-products/>.
- Medtronic Framelink™, Simplified Planning and Navigation for DBS Procedures, 2009, 2 pages.
- Medtronic Nexframe Stereotactic Image Guided System, 2 pages, Retrieved from the internet on Jan. 16, 2015 at URL <http://professional.medtronic.com/pt/neuro/dbs-md/prod/procedure-solutions/features-specifications/#.VLk0N9LF To>.
- Medtronic Stealth Station® Surgical Navigation Systems, Dec. 11, 2014, 2 pages, Retrieved from the Internet at URL <http://www.medtronic.com/for-healthcare-professionals/products-therapies/spinal/surgical-navigation-imaging/surgical-navigation-systems/>.
- Medtronic, Deep Brain Stimulation for Movement Disorders, 2 Pages, Retrieved from the internet on Sep. 22, 2014 at URL <http://professional.medtronic.com/pt/neuro/dbs-md/prod/procedure-solutions/index.htm>.
- Northern Digital Inc., NDI, Disposable Reflective Marker Spheres for Brainlab IGS Systems, 4 pages, Retrieved from the internet on Jan. 16, 2015 at URL <http://spheres.ndigital.com/>.
- Northern Digital Inc., The Original IGS Sphere, 7 Pages, Retrieved from the internet on Sep. 22, 2014 at URL <http://spheres.ndigital.com/ndi-passive-spheres/>.
- Stryker eNlite Navigation System, 1 page, Retrieved from the internet on Jan. 16, 2015 from URL <http://www.stryker.com/latm/products/OREquipmentConnectivity/SurgicalNavigation/SurgicalNavigationSystems/EnliteLaptop/index.htm>.
- Stryker Integrated NavSuite Operating Room, 2008, Brochure, 3 pages.
- Stryker System II Navigation System, 2006, Brochure, 2 pages.
- Photographs obtained of commercial probe tracking devices, date photographs on internet first available unknown, but prior to filing the pending application on Oct. 15, 2014, 1 page.
- International Search Report and Written Opinion for related PCT Application No. PCT/US2014/060644, dated Jan. 26, 2015, 14 pages.

* cited by examiner

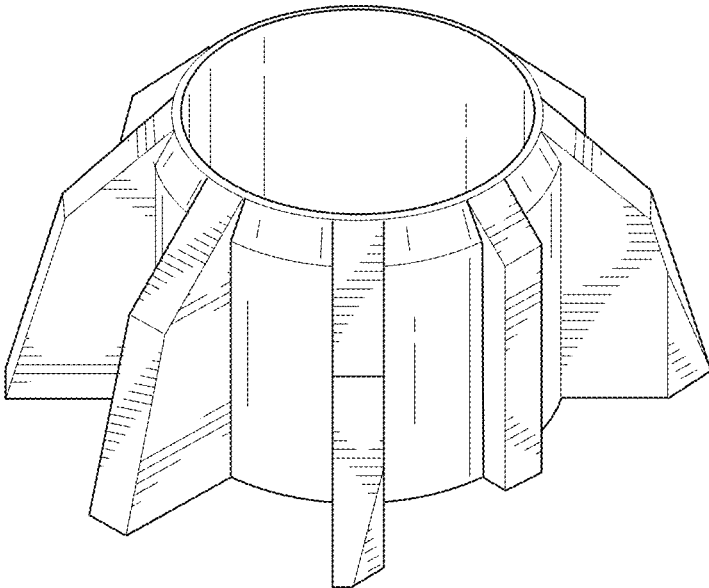


FIG. 1

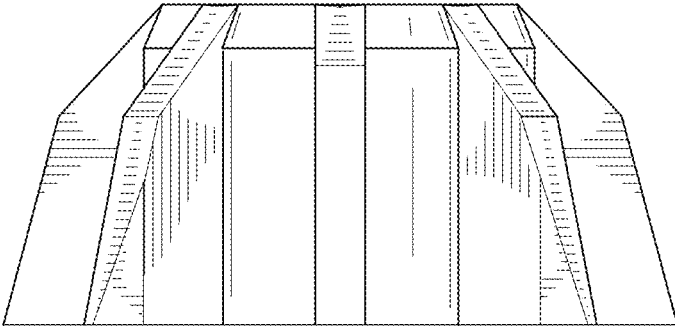


FIG. 2

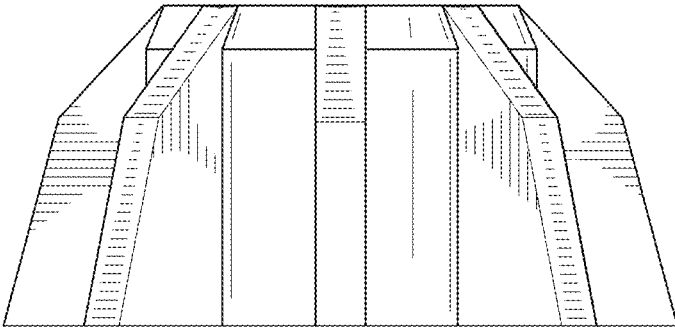


FIG. 3

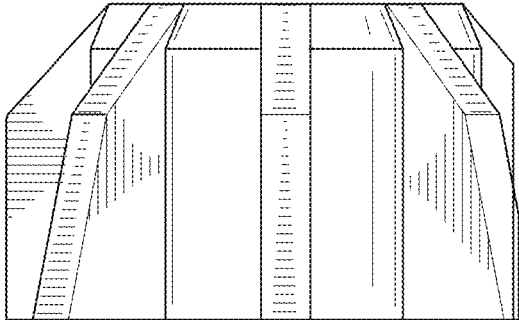


FIG. 4

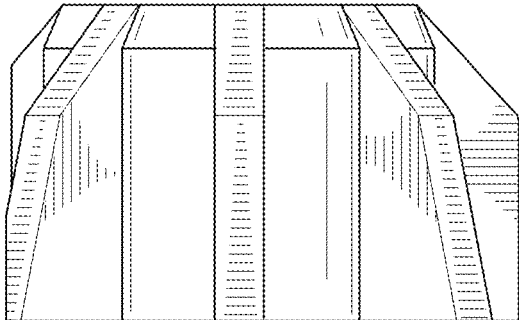


FIG. 5

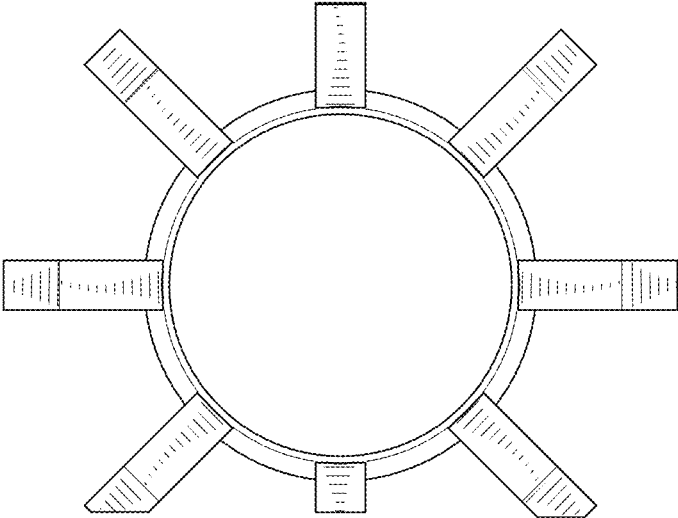


FIG. 6

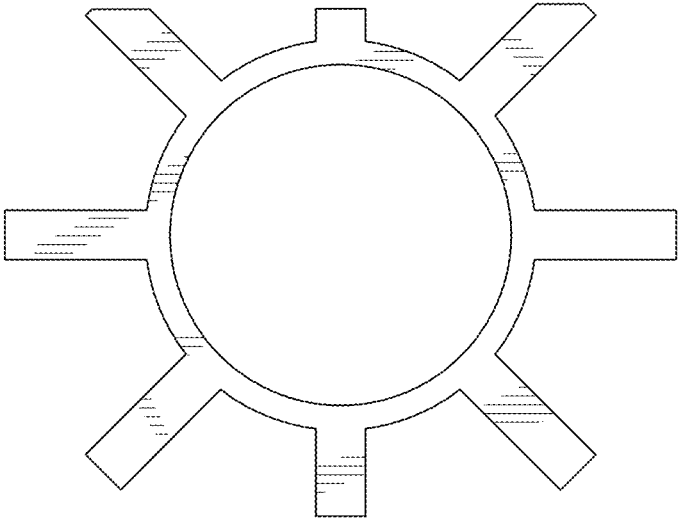


FIG. 7

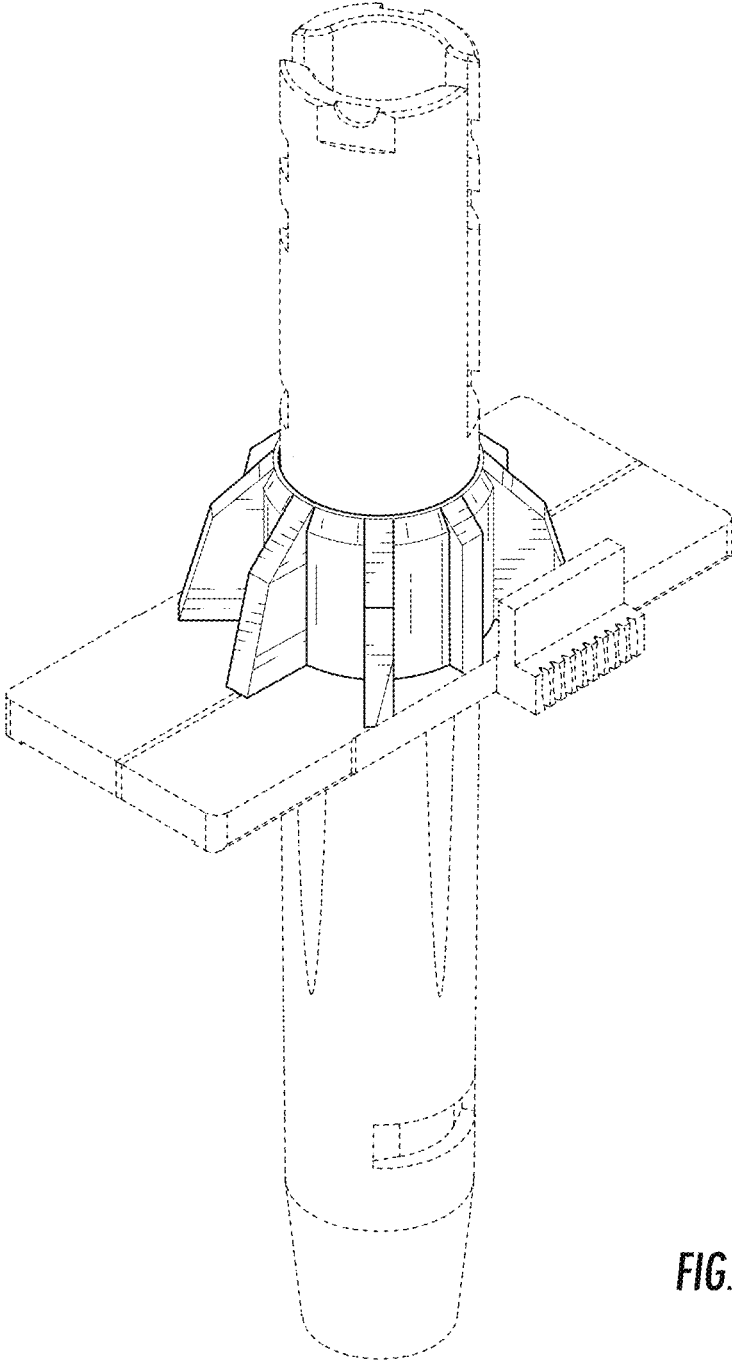


FIG. 8

