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(54) Title: HYBRID SAW BLADE

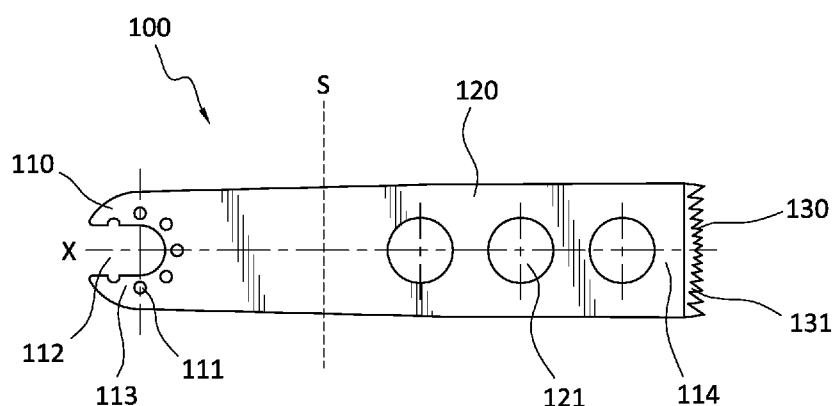


FIG. 1

(57) Abstract: A surgical saw blade including a cutting edge, blade body and a coupling for connecting the blade body to a handpiece. The blade body at least partially includes a composite material that helps to confer optimal weight and rigidity to the saw blade to allow for minimal vibration during use and minimal mechanical load on the handpiece.

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B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A61B B27B B28D B23D		
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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 103 25 392 A1 (AESCULAP AG & CO KG [DE]) 23 December 2004 (2004-12-23) paragraphs [0060] - [0103]; figures 1-4 -----	1-6,8-20
X	US 2010/292701 A1 (FISHER MICHAEL [US] ET AL) 18 November 2010 (2010-11-18) paragraphs [0062] - [0067]; figures 2A-4E -----	1-3,7, 13,14,17
X	US 2016/158856 A1 (KULLMANN JOERG H [DE]) 9 June 2016 (2016-06-09) the whole document -----	1-20
X	EP 1 106 318 A2 (DONAZZAN LUIGI [IT]) 13 June 2001 (2001-06-13) the whole document ----- -/-	1-5,9, 10, 13-15,18
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Hagberg, Åsa

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7 691 106 B2 (SYNVASIVE TECHNOLOGY INC [US]) 6 April 2010 (2010-04-06) column 8, line 24 - column 9, line 41; figures -----	1,2,5, 12-15,20
X	EP 2 823 777 A1 (MARKS PETER [DE]; RAHMAN SANNY [DE]) 14 January 2015 (2015-01-14) paragraphs [0013], [0014]; figure 1 -----	1,2,5, 13-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2019/055526

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 10325392	A1	23-12-2004	NONE
US 2010292701	A1	18-11-2010	EP 2429420 A1 21-03-2012 US 2010292701 A1 18-11-2010 WO 2010132216 A1 18-11-2010
US 2016158856	A1	09-06-2016	EP 3038781 A1 06-07-2016 JP 6393945 B2 26-09-2018 JP 2016529123 A 23-09-2016 KR 20160048770 A 04-05-2016 US 2016158856 A1 09-06-2016 WO 2015028085 A1 05-03-2015
EP 1106318	A2	13-06-2001	EP 1106318 A2 13-06-2001 IT PD990270 A1 04-06-2001
US 7691106	B2	06-04-2010	US 2007083209 A1 12-04-2007 WO 2007041027 A2 12-04-2007
EP 2823777	A1	14-01-2015	DE 102013011638 A1 15-01-2015 EP 2823777 A1 14-01-2015