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(54) **Blades with functional balance asymmetries for use with ultraosnic surgical instruments**

(57) Disclosed is an ultrasonic surgical instrument that combines end-effector geometry to best affect the multiple functions of a shears-type configuration. The shape of the blade is characterized by a radiused cut offset by some distance to form a curved geometry. The cut creates a curved surface with multiple asymmetries causing multiple imbalances within the blade. Imbalance due to the curve of the instrument is corrected by a non-functional asymmetry proximal to the functional asymmetry. Imbalance due to the asymmetric cross-section of the blade is corrected by the appropriate selection of the volume and location of material removed from a functional asymmetry. The shape of the blade in one embodiment of the present invention is characterized by two radiused cuts offset by some distance to form a curved and potentially tapered geometry. These two cuts create curved surfaces including a concave surface and a convex surface. The length of the radiused cuts affects, in part, the acoustic balancing of the transverse motion induced by the curved shape.

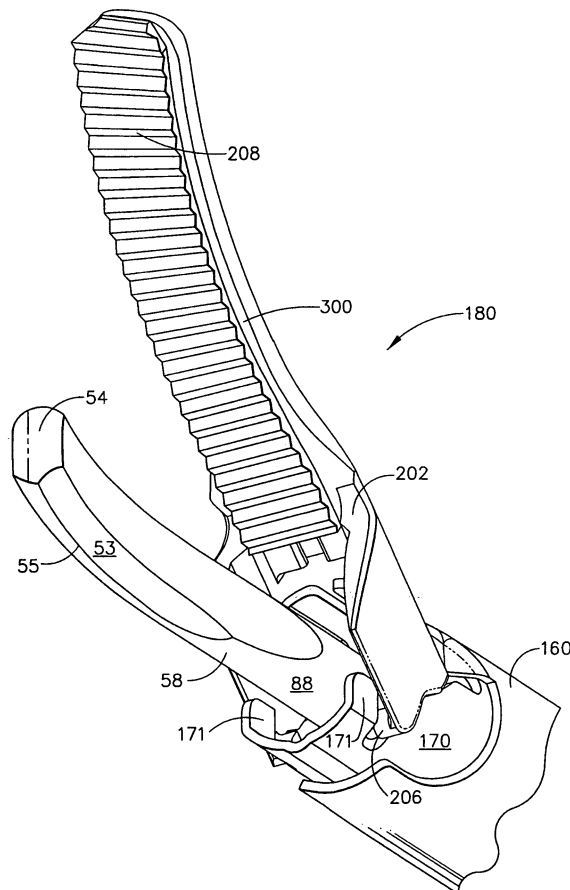


FIG. 36



EUROPEAN SEARCH REPORT

Application Number
EP 07 07 5628

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			TECHNICAL FIELDS SEARCHED (IPC)
			A61B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 March 2009	Examiner Held, Günter
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 07 5628

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The members are as contained in the European Patent Office EDP file on
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专利名称(译)	具有功能平衡不对称的刀片用于超声外科手术器械		
公开(公告)号	EP1839598A3	公开(公告)日	2009-05-06
申请号	EP2007075628	申请日	2000-09-08
[标]申请(专利权)人(译)	伊西康内外科公司		
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当前申请(专利权)人(译)	爱惜康内镜手术，INC.		
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发明人	MESSERLY, JEFFREY D.		
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CPC分类号	A61B17/320092 A61B17/2816 A61B2017/2825 A61B2017/2929 A61B2017/320075 A61B2017/320093 A61B2017/320094 A61B2017/320095		
代理机构(译)	FISHER, ADRIAN JOHN		
优先权	09/412257 1999-10-05 US		
其他公开文献	EP1839598B1 EP1839598A2		
外部链接	Espacenet		

摘要(译)

公开了一种超声外科手术器械，其结合了末端执行器几何形状以最好地影响剪切型构造的多种功能。刀片的形状的特征在于偏角切割偏移一定距离以形成弯曲几何形状。切口形成具有多个不对称的弯曲表面，导致刀片内的多个不平衡。由于仪器曲线引起的不平衡通过功能不对称附近的非功能性不对称来校正。通过适当选择从功能不对称中移除的材料体积和位置来校正由于叶片的不对称横截面引起的不平衡。在本发明的一个实施例中，叶片的形状的特征在于两个圆角切口偏移一定距离以形成弯曲且可能锥形的几何形状。这两个切口形成曲面，包括凹面和凸面。圆角切口的长度部分地影响由弯曲形状引起的横向运动的声学平衡。

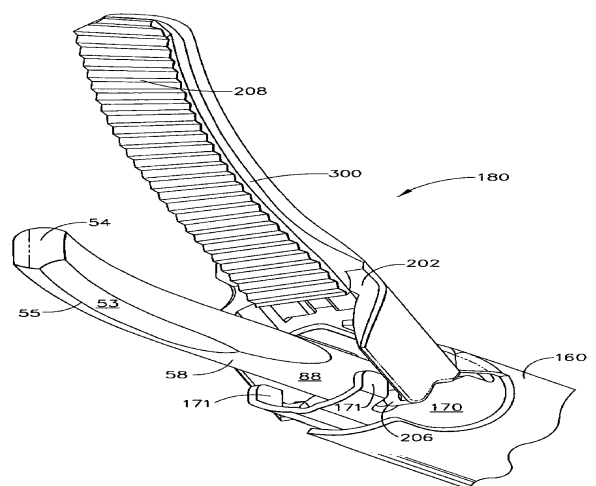


FIG. 36