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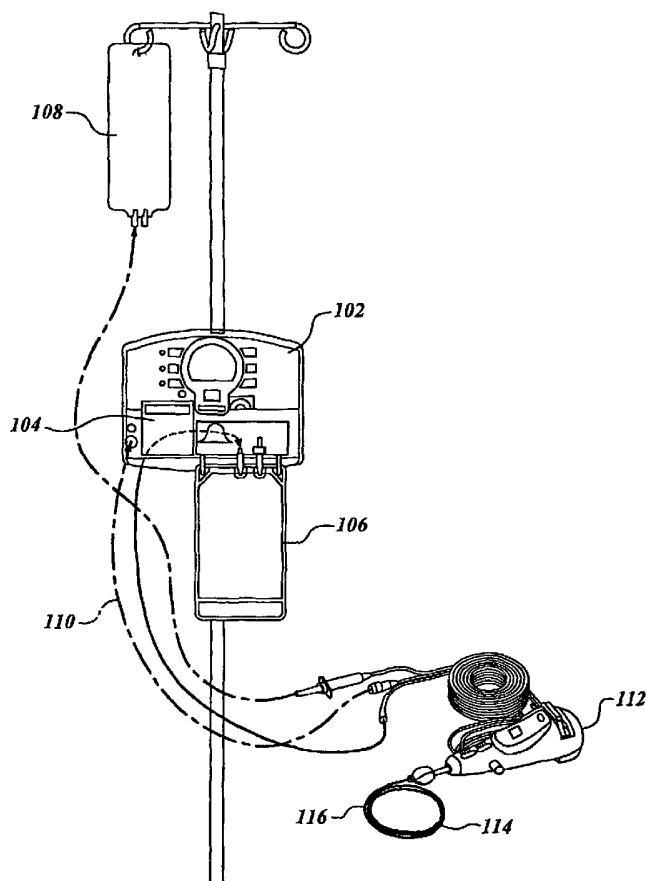
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[Continued on next page]

(54) Title: INTERVENTIONAL CATHETERS HAVING DIFFERENTIAL CUTTING SURFACES



(57) Abstract: An interventional catheter incorporates an advanceable, rotatable operating head or cutter assembly (50, 72, 80, 120, 140) having one or more distally located differential cutting surfaces (52, 74, 82, 124, 145, 154, 164) having a cant angle of less than 90°, the cant angle being an angle of intersection of the cutting surface and a line tangent to the circumference of the cutter assembly. A fixed blade cutter assembly (50, 72, 80, 120, 140) has a plurality of differential cutting surfaces (52, 74, 82, 124, 145, 147, 154, 164) with large ports (68, 125, 143) provided between neighboring differential cutting blades providing access to a sealed lumen and aspiration system. A dual cutter assembly having a fixed blade cutter assembly (200) and an adjustable blade cutter assembly (210) is also provided. A drive shaft provides rotation and torque from a drive system to the cutter assembly and may be coupled to the cutter assembly by means of an articulating bearing assembly (250).



MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 17/22

US CL : 606/159

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 606/159, 80, 180

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,445,509 A (AUTH) 01 MAY 1984, COL. 4, LINE 18 TO COL. 9, LINE 7.	1-34
Y	US 6,503,261 B1 (BRUNEAU ET AL.) 07 JANUARY 2003, COL. 3, LINES 31-34.	1-34

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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