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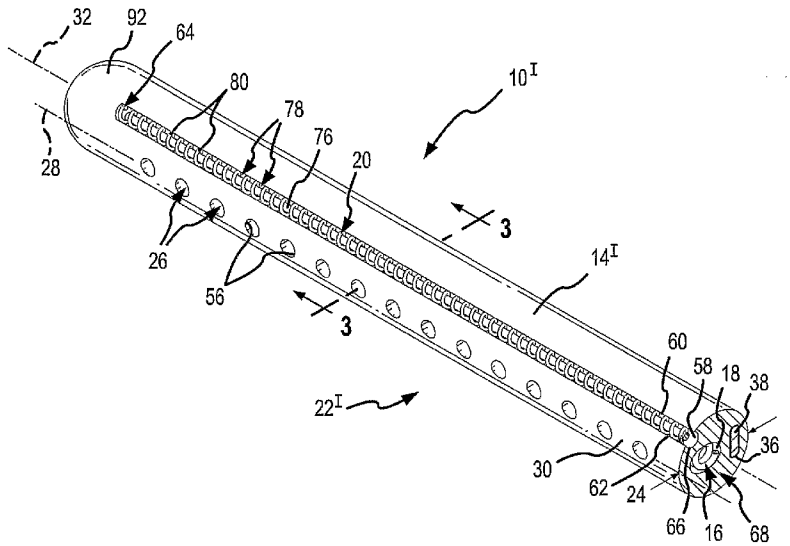
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Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

[Continued on next page]

(54) Title: MULTIPOLAR, VIRTUAL-ELECTRODE CATHETER WITH AT LEAST ONE SURFACE ELECTRODE AND METHOD FOR ABLATION



(57) Abstract: Virtual-electrode catheters (10, 12) and methods for using such virtual-electrode catheters (10, 12) are disclosed. For example, bipolar (10) and multipolar (12), virtual electrode catheters having at least one internal electrode (16) and at least one surface electrode (20), and methods of using these catheters for treatment of cardiac arrhythmias are disclosed. The catheters may comprise a catheter body (14) with an internal lumen (18) extending within it and adapted to flowingly receive a conductive fluid (34). An exit feature defining a flow path from the internal lumen (18) to the catheter's outer surface may exist through a sidewall (30) of the catheter body. A conductor (16) is mounted within the internal lumen (18) adjacent to the exit feature and is adapted to deliver treatment energy to the tissue via the conductive fluid (34). At least one surface electrode (20) is mounted on the outer surface of the catheter body adjacent to the exit feature.

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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USPC - 606/41; 607/105

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 606/34, 606/32, 607/113

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST (USPT, PGPB, EPAB, JPAB): virtual, electrode, catheter, rf, radiofrequency, saline, electrolyte, fluid, lumen, coil, ablation, port, hole, exit

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,855,143 B2 (DAVISON et al.) 15 February 2005 (15.02.2005), Abstract; Fig 2A; fig 3A; 3B; 4A; 4B; 7A, 7B 23; 33A; 33B; 34A; 41A; 41B; Col 8, ln 6; col 13, ln 44, ln 8-9; col 20, ln 49; col 21, ln 19-21; col 28, ln 1-5, 9-11, 57-60; col 39, ln 27; col 40, ln 12.	1, 10-18, 20-27, 31-38, 40-43 --- 2-7, 19, 28-30, 39
Y	US 2004/0215180 A1 (STARKEBAUM et al.) 28 October 2004 (28.10.2004), para [0064]; fig 13.	2-7
Y	US 6,849,073 B2 (HOEY et al.) 1 February 2005 (01.02.2005), Fig 15; Col 7, ln 9; col 12, ln 3-5.	19, 28-30, 39

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