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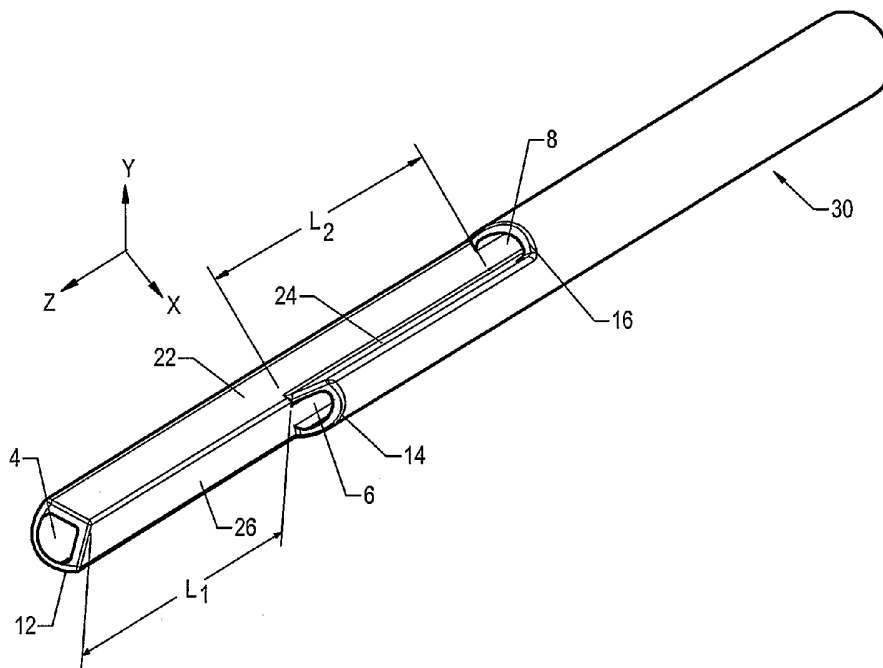
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(54) Title: TIP CONFIGURATIONS FOR MULTI-LUMEN CATHETER



(57) Abstract: Multi-lumen catheters with improved tip configurations, including a triple-lumen catheter which may be useful for apheresis. In one variation, the catheter has three lumens with distal openings angularly spaced apart and staggered axially with respect to one another. In another variation, the catheter has two lumens exiting distally and one centrally positioned lumen exiting proximally. A third variation is a catheter with a single distal opening and two proximal openings. The staggered lumen openings along the axial length of the catheter may decrease recirculation while maximizing flow rates.

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A. CLASSIFICATION OF SUBJECT MATTER
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 USPC: 604/43
 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. : 604/43

 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.
A	US 5167623 (Cianci et al.) 1 DECEMBER 1992 Note: Please review the entire patent.	1-67
A	US 4468216 (Muto) 28 August 1984 Note: Please review the entire patent.	1-67

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* Special categories of cited documents:	"T"
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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