



US007604612B2

(12) **United States Patent**
Ressemann et al.

(10) **Patent No.:** **US 7,604,612 B2**
(45) **Date of Patent:** **Oct. 20, 2009**

(54) **EMBOLI PROTECTION DEVICES AND RELATED METHODS OF USE**

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EP 0 427 429 A2 5/1991

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 560 days.

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(21) Appl. No.: **10/214,712**

(57) **ABSTRACT**

(22) Filed: **Aug. 9, 2002**

(65) **Prior Publication Data**

US 2003/0050600 A1 Mar. 13, 2003

(51) **Int. Cl.**
A61M 29/00 (2006.01)

(52) **U.S. Cl.** **604/101.01**

(58) **Field of Classification Search** 604/101.04, 604/284, 524, 96.01, 101.01, 101.03–101.05, 604/102.01–102.03, 103.06–103.08; 606/191, 606/194

See application file for complete search history.

An evacuation sheath assembly and method of treating occluded vessels which reduces the risk of distal embolization during vascular interventions is provided. The evacuation sheath assembly includes an elongated tube defining an evacuation lumen having proximal and distal ends. A proximal sealing surface is provided on a proximal portion of the tube and is configured to form a seal with a lumen of a guided catheter. A distal sealing surface is provided on a distal portion of the tube and is configured to form a seal with a blood vessel. Obturator assemblies and infusion catheter assemblies are provided to be used with the evacuation sheath assembly. A method of treatment of a blood vessel using the evacuation sheath assembly includes advancing the evacuation sheath assembly into the blood vessel through a guide catheter. Normal antegrade blood flow in the blood vessel proximate to the stenosis is stopped and the stenosis is treated. Retrograde blood flow is induced within the blood vessel to carry embolic material dislodged during treating into the evacuation sheath assembly. If necessary to increase retrograde flow, the coronary sinus may be at least partially occluded. Alternatively, antegrade flow may be permitted while flow is occluded at the treatment site.

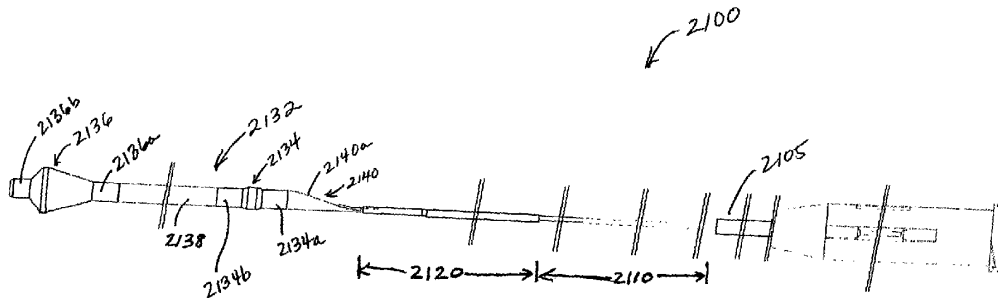
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15 Claims, 73 Drawing Sheets



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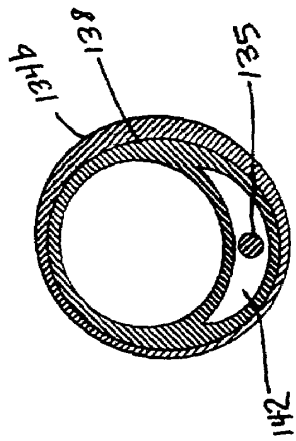


FIG. 1B

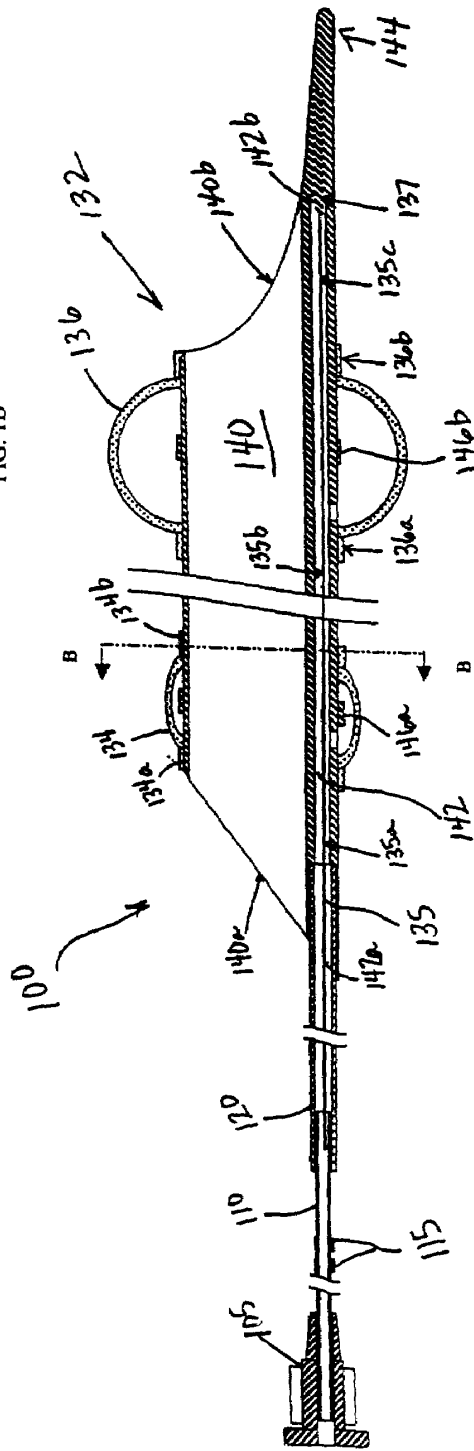


FIG. 1A

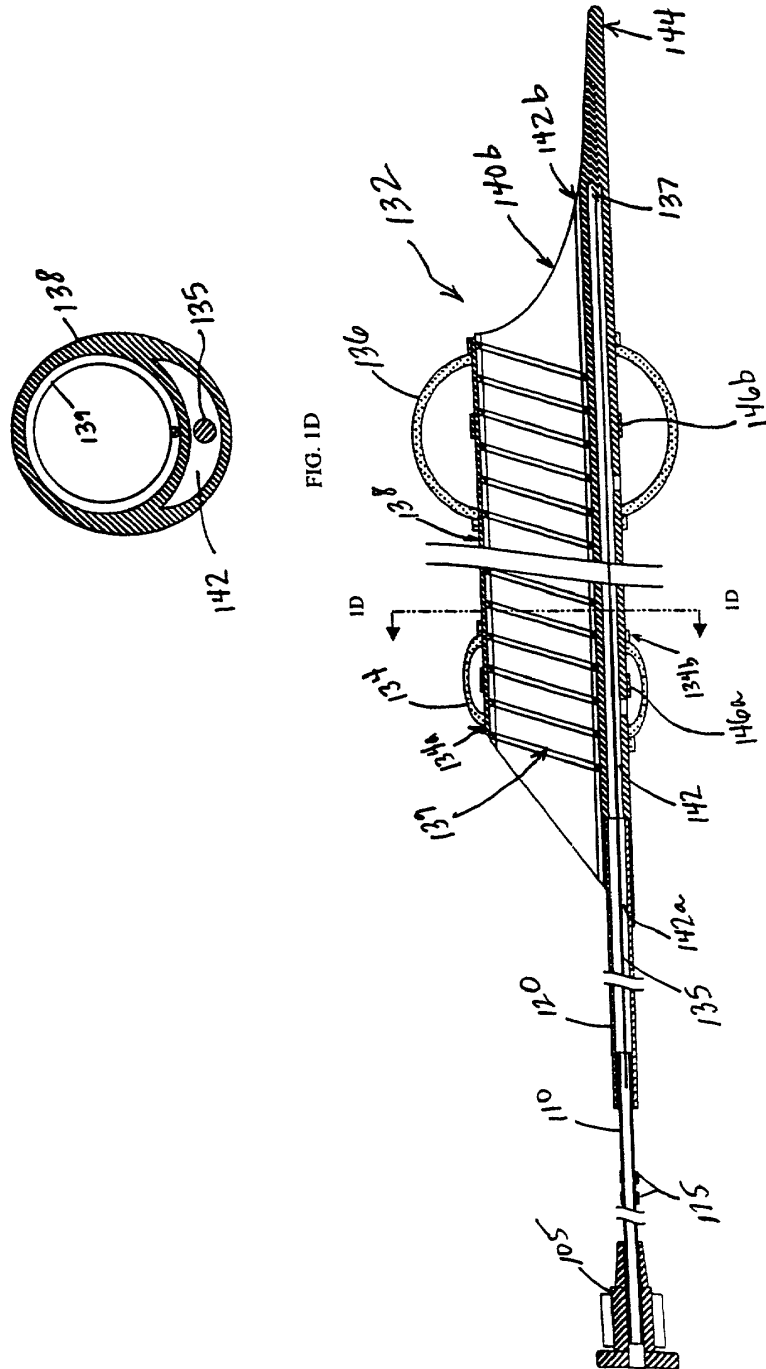


FIG. 1D

FIG. 1C

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