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United States Patent [19]

Cochrum

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[54] **ANGIOGRAPHIC VASCULAR OCCLUSION AGENTS AND A METHOD FOR HEMOSTATIC OCCLUSION**

[75] Inventor: **Kent C. Cochrum**, Davis, Calif.

[73] Assignee: **The Regents of the University of California**, Oakland, Calif.

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,570,102.

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[51] **Int. Cl.**[6] **A61F 2/02**; A61K 31/74; A61L 25/00

[52] **U.S. Cl.** **424/423**; 424/78.08; 424/445; 602/43; 602/52; 128/DIG. 22

[58] **Field of Search** 514/772.2; 424/78.08, 424/423, 445; 602/43, 52; 128/DIG. 22

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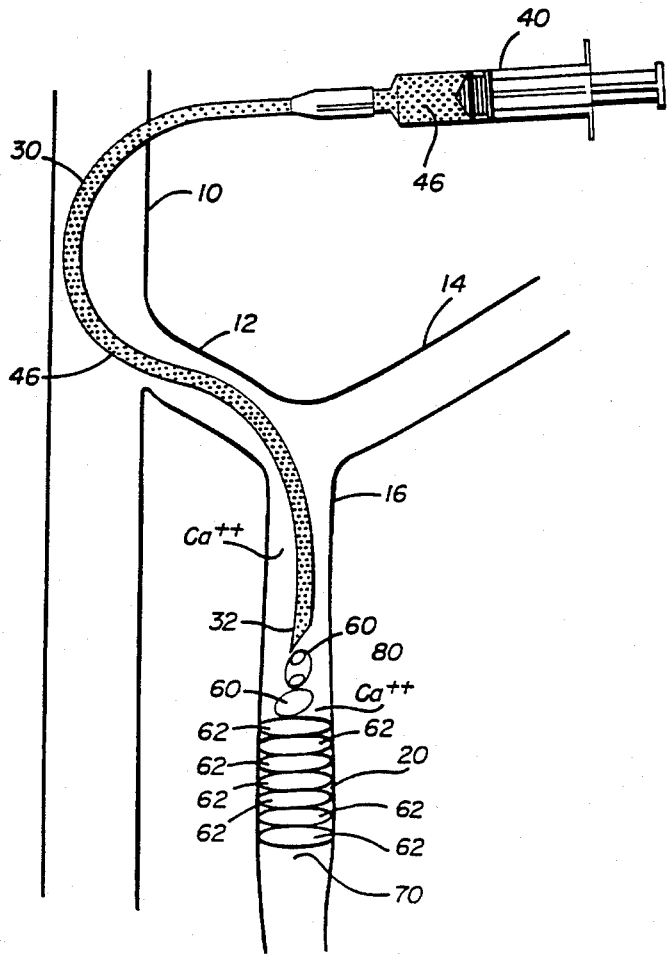
Primary Examiner—Carlos Azpuru
Attorney, Agent, or Firm—Hana Verny

[57] **ABSTRACT**

Angiographic vascular occlusion agents comprising a biopolymer alone or in combination with platelet-rich plasma. A liquid biopolymer gels in situ in contact with divalent cations. Biopolymer agent achieves permanent occlusion, biopolymer combined with the platelet-rich plasma achieves temporary or semi-permanent occlusion. The plasma is obtained from the patient's own blood to avoid undesirable immunogenic reactions. The occlusion agents have strong occlusive properties when injected into a bleeding vessel.

29 Claims, 3 Drawing Sheets