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# United States Patent [19]

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Fan et al.

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[54] **MEDICAL DEVICE WITH LUBRICAIOUS COATING**

5,290,306 3/1994 Trotta et al. .

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[57] **ABSTRACT**

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A medical balloon and catheter in which the balloon (14) is wrapped and folded upon itself tortuously and tightly so outer surfaces (12) contact each other for insertion into the body and in which the balloon is free of bridging and adhesion between abutting surfaces. The balloon has a base of a continuous polymeric surface (10) expandable from a folded, wrapped configuration with surfaces touching each other into a balloon when inflated. A lubricious, biocompatible, hydrogel coating (11) is disposed on the polymeric surface and a thin, lubricious, blood-compatible coating (12) is disposed upon the hydrogel coating and adheres to it to prevent abutting surfaces of the folded polymeric surfaces from adhering to each other during inflation and to prevent delamination of the hydrogel coating and/or rupture of the balloon. Preferably the blood-compatible coating (12) is polyethylene glycol, methoxy polyethylene glycol or mixtures thereof having a molecular weight between about 100 and 20,000 grams per gram mole.

[21] Appl. No.: **310,730**

[22] Filed: **Sep. 22, 1994**

[51] Int. Cl.<sup>6</sup> ..... **A61M 29/00**

[52] U.S. Cl. .... **604/96; 604/265; 606/194**

[58] Field of Search ..... **604/96-103; 606/191, 606/192, 194, 195, 264-265**

[56] **References Cited**

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**25 Claims, 1 Drawing Sheet**

