

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61B 17/28	A1	(11) International Publication Number: WO 96/38092 (43) International Publication Date: 5 December 1996 (05.12.96)
(21) International Application Number: PCT/IB96/00593 (22) International Filing Date: 20 May 1996 (20.05.96) (30) Priority Data: 08/446,146 22 May 1995 (22.05.95) US (71) Applicant: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 22nd floor, 300 Lakeside Drive, Oakland, CA 94612 (US). (72) Inventors: NORTHRUP, Milton, A.; 923 Creston Road, Berkeley, CA 94908 (US). CIARLO, Dino, R.; 1178 Dunsmuir Place, Livermore, CA 94550 (US). LEE, Abraham, P.; 1428 Whitecliff Way, Walnut Creek, CA 94596 (US). KRULB-VITCH, Peter, A.; 440 Harrington Court, Los Altos, CA 94024 (US). (74) Agent: SARTORIO, Henry, P.; P.O. Box 808, L-703, Livermore, CA 94550 (US).	(81) Designated States: CA, JP, KR, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

(54) Title: **MICROFABRICATED THERAPEUTIC ACTUATOR MECHANISMS**

(57) Abstract

Electromechanical microstructures (70) (microgrippers), either integrated circuit (IC) silicon-based or precision machined, to extend and improve the application of catheter-based interventional therapies for the repair of aneurysms in the brain or other interventional clinical therapies. These micromechanisms can be specifically applied to release platinum coils or other materials into bulging portions of the blood vessels also known as aneurysms. The "micro" size of the release mechanism is necessary since the brain vessels are the smallest in the body. Through a catheter more than one meter long, the micromechanism located at one end of the catheter can be manipulated from the other end thereof. The microgripper (micromechanism) of the invention will also find applications in non-medical areas where a remotely actuated microgripper or similar actuator would be useful or where micro-assembling is needed.

