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McKillip, Jr.

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[54] **REMOTELY CONTROLLABLE ACTUATING DEVICE**

[75] Inventor: **Robert M. McKillip, Jr.**, Hopewell, N.J.

[73] Assignee: **Continuum Dynamics, Inc.**, Princeton, N.J.

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[58] **Field of Search** 244/17.11, 17.25, 244/75 R, 213, 214, 215, 17.13; 416/24, 20 R, 90 R; 60/528, 527; 310/328, 333, 367, 330

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Primary Examiner—Galen L. Barefoot
Attorney, Agent, or Firm—David M. Quinlan, P.C.

[57] **ABSTRACT**

An actuating device can change a position of an active member that remains in substantially the same position in the absence of a force of a predetermined magnitude on the active member. The actuating device comprises a shape-memory alloy actuating member for exerting a force when actuated by changing the temperature thereof, which shape-memory alloy actuating member has a portion for connection to the active member for exerting thereon a force having a magnitude at least as large as the predetermined magnitude for moving the active member to a desired position. Actuation circuitry is provided for actuating the shape-memory alloy actuating member by changing the temperature thereof only for the time necessary to move the active member to the desired position. The invention is particularly useful for changing the position of a camber-adjusting tab on a helicopter rotor blade by using two shape-memory alloy members that can act against each other to adjust dynamic properties of the rotor blade as it is rotating.

19 Claims, 2 Drawing Sheets

