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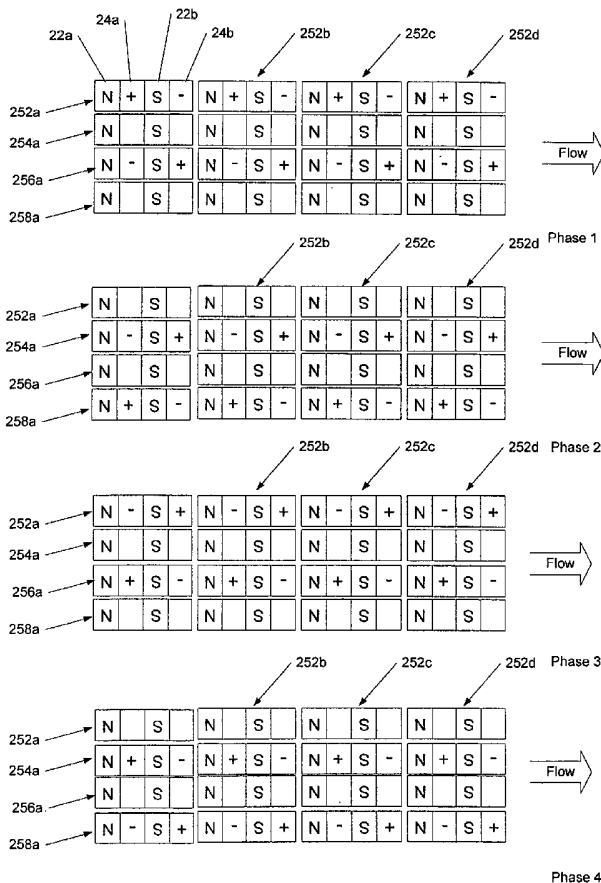
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR REDUCING TURBULENT DRAG



(57) Abstract: The systems and methods of the invention include systems and techniques for controlling a turbulent boundary layer from with a transverse traveling wave, oscillating at certain selected frequencies, amplitudes and wavelengths, to provide substantial reductions of drag. To this end, the systems and processes can include a boundary layer control system having an object with at least one surface exposed to a medium flowing over the surface. A plurality of excitation elements (252a, 254a, 256a, 258a) may be arranged on the surface and these elements are capable of exciting a traveling wave force field in a span-wise direction that is substantially parallel to the surface and perpendicular to direction of the flow.



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A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : B64C 21/00
 US CL : 244/204, 244/130; 114/67R
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 244/204, 130, 205, 201; 114/67R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)


C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,059,236 A (TSUNODA) 09 May 2000 (09.05.2000), whole document	1-19
A	US 6,220,549 B1 (TSUNODA et al.) 24 April 2001 (24.04.2001), whole document	1-19

Further documents are listed in the continuation of Box C. See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
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