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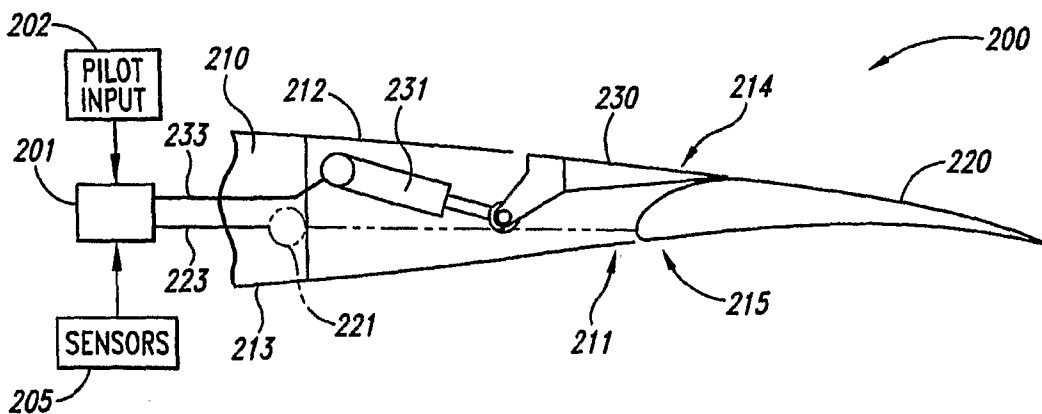
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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR CONTROLLING AIRCRAFT FLAPS AND SPOILERS



(57) Abstract: Systems and methods for controlling aircraft flaps and spoilers are disclosed. Systems (200) in accordance with some embodiments include a wing (210) having a trailing edge (211), and a flap (220) positioned at least partially aft of the wing trailing edge (211) and being deployable relative to the wing (210) between a first flap position and a second flap position by operation of a first actuator. A spoiler (230) can be positioned at least proximate to the trailing edge (211) and can be movable among at least three positions, including a first spoiler position in which the spoiler forms a generally continuous contour with an upper surface of the wing (210), a second spoiler position deflected downwardly from the first, and a third spoiler position deflected upwardly from the first. A second actuator (231) can be operatively coupled to the spoiler to move the spoiler among the first, second and third spoiler positions in a manner that is mechanically independent of the motion of the flap.



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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/003889

A. CLASSIFICATION OF SUBJECT MATTER
INV. B64C9/20 B64C9/32

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)
B64C

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 practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 756 540 A (SAMSUNG AEROSPACE INDUSTRIES LTD) 5 June 1998 (1998-06-05) page 5, line 8 - line 18 page 5, line 19 - line 26 page 5, line 33 - line 34; figures 4,5	1-6,8-18
X	US 4 720 066 A (RENKEN ET AL) 19 January 1988 (1988-01-19)	1-6,8
A	column 3, line 20 - line 54; figure 2	9-12,14
X	EP 0 216 033 A (MESSERSCHMITT-BOLKOW-BLOHM GMBH) 1 April 1987 (1987-04-01)	1,2,4
A	page 5, line 21 - line 30; figures 1,2	7
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 561 463 B1 (YOUNT LARRY ET AL) 13 May 2003 (2003-05-13) column 1, line 31 - line 40 column 3, line 39 - line 63 -----	3,16,18
X	US 4 120 470 A (WHITENER ET AL) 17 October 1978 (1978-10-17) cited in the application column 3, line 21 - line 57 -----	1,2,4
A	US 4 784 355 A (BRINE ET AL) 15 November 1988 (1988-11-15) column 2, line 33 - line 48 -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/003889

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2756540	A	05-06-1998	CN 1184056 A	10-06-1998
US 4720066	A	19-01-1988	EP 0218021 A1	15-04-1987
EP 0216033	A	01-04-1987	DE 3530862 A1	12-03-1987
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US 4120470	A	17-10-1978	NONE	
US 4784355	A	15-11-1988	NONE	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/003889

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-18

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

An aircraft wing system wherein a spoiler is deflected downwardly.

2. claims: 19-31

An aircraft wing system wherein the flap can contact mechanically the spoiler and drive it.
