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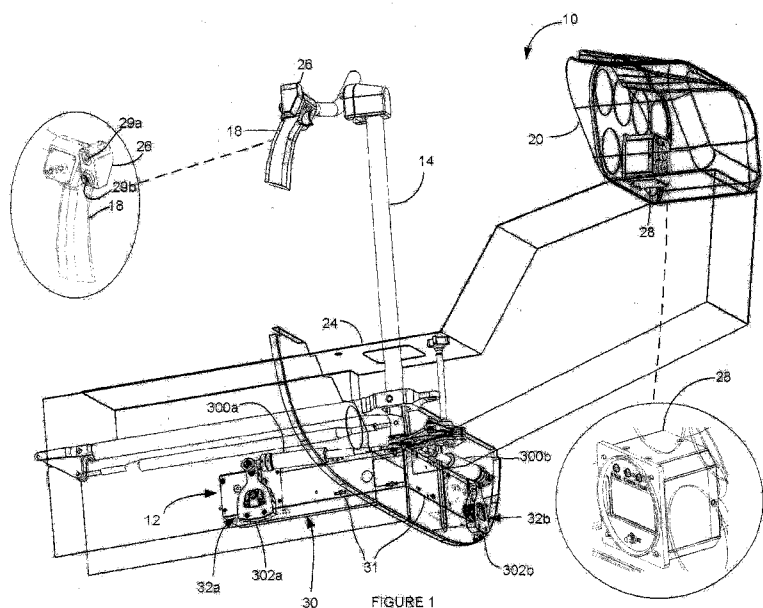
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(54) Title: AUTOPILOT AND METHODS



(57) Abstract: A helicopter autopilot system includes an inner loop for attitude hold for the flight of the helicopter including a given level of redundancy applied to the inner loop. An outer loop is configured for providing a navigation function with respect to the flight of the helicopter including a different level of redundancy than the inner loop. An actuator provides a braking force on a linkage that serves to stabilize the flight of the helicopter during a power failure. The actuator is electromechanical and receives electrical drive signals to provide automatic flight control of the helicopter without requiring a hydraulic assistance system in the helicopter. The autopilot can operate the helicopter in a failed mode of the hydraulic assistance system. A number of flight modes are described with associated sensor inputs including rate based and true attitude modes.





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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
PatSearch (RUPTO internal), Esp@cenet, USPTO, RUPTO		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A Y	US 2005/0173595 A1 (ROGER H. HOH) 11.08.2005, paragraphs [0043] - [0046], [0059] - [0067], fig. 3-5	1-20 33, 57
A Y	US 2007/0164168 A1 (JUKKA MATTI HIRVONEN et al.) 19.07.2007, paragraphs [0024] - [0032], fig. 2	1-20 57
X A	US 6325331 B1 (BELL HELICOPTER TEXTRON INC.) 04.12.2001, col. 8, lines 8-25, line 43 - col. 9, line 7, fig. 2, 10, 11	21-23, 25, 26, 28-30 24, 27
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Y A	US 2011/0022250 A1 (RON WAYNE HAMBURG) 27.01.2011, paragraphs [0005] - [0019], fig. 2, 3	31-33, 42, 53-56 34-41
Y	EP 1996459 B1 (THE BOEING COMPANY) 15.09.2010, paragraphs [0016] - [0017], [0037] - [0038], fig. 1, 2, 10	31-33, 42
Y	RU 8813 UI (BABUSHKIN LEONID NATANOVICH et al.) 16.12.1998, p. 6, line 14 - p. 7, line 15, fig. 1, 2	32
A	US 2011/0046824 A1 (RATIER FIGEAC) 24.02.2011, paragraphs [0012] - [0013], [0071] - [0078], fig. 1-3	43-52
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