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[Continued on next page]

(54) Title: AERIAL UNIT AND METHOD FOR ELEVATING PAYLOADS

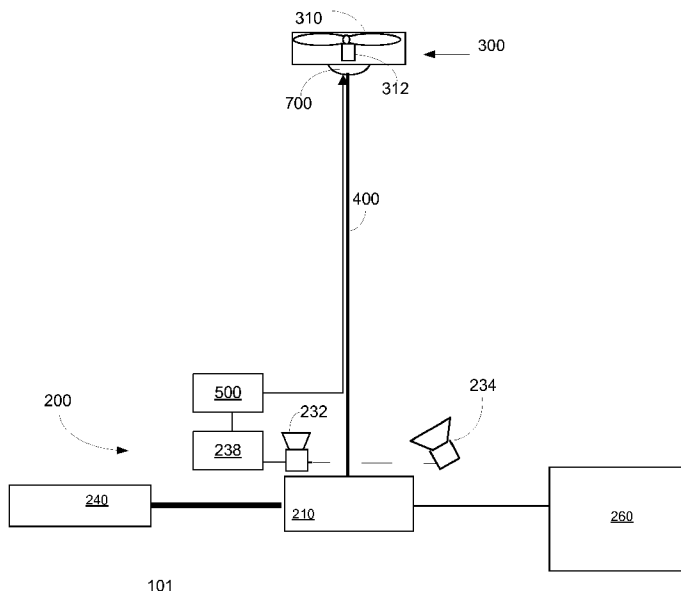


FIG. 2

(57) Abstract: An aerial unit includes a connecting element arranged to connect a ground unit to the aerial unit. The ground unit may include a connecting element manipulator, for altering an effective length of the connecting element and a ground unit controller for controlling the connecting element manipulator. A positioning unit is arranged to image the aerial unit and to generate metadata about a location of the aerial unit. An interfacing module is provided for coupling a payload to the aerial unit. At least one of the ground unit and the aerial unit may include a controller that is arranged to control, at least in response to the metadata, at least one of a first propeller motor and at least one steering element to affect at least one of the location of the aerial unit and the orientation of the aerial unit.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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USPC - 244/17.17

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)
USPC 244/17.17Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC 244/158.2, 6, 8, 12.2, 17.11, 17.17, 17.23, 17.25, 75.1, 23R, 23A, 23C, 24, 26, 110C, 139, 153A; 356/3, 4.01; 340/933, 937, 945, 946, 988, 989Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWest - UAV, aerial, hover, hovering, airship, flight, VTOL, airborne, helicopter, cable, retrieve, retrieval, tension, line, recover, recovery, tether, rope, propeller, rotor, rotating wing, video, visual, sight, control, feedback
Google - video feedback control of tethered aerial helicopter

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"Control of a Quadrotor Helicopter Using Dual Camera Visual Feedback", Altug, Erdinc et al., The International Journal of Robotics Research, Vol. 24, No. 5, May 2005, pp. 329-341,	44
---	abstract, figs. 11, 13 and 15, and sections 1, 2 and 4	----
Y	US 4,058,277 A (Kozakiewicz et al.) 15 November 1977 (15.11.1977), figs. 1-3, col. 2, ln 24-50 and col. 3, ln 62-68	1-43 and 45
Y	US 4,058,277 A (Kozakiewicz et al.) 15 November 1977 (15.11.1977), figs. 1-3, col. 2, ln 24-50 and col. 3, ln 62-68	1-28
Y	US 2005/0082421 A1 (Perlo et al.) 21 April 2005 (21.04.2005), figs. 1 and 12, and para [0033 and 0069]	29-43 and 45
Y	US 5,026,003 A (Smith) 25 June 1991 (25.06.1991), fig. 8 and col. 5, ln 33-36	9
Y	US 5,152,478 A (Cycon et al.) 06 October 1992 (06.10.1992), fig. 1 and col. 4, ln 8-35	11-24, 27, 28, 38, 39, 42 and 43
Y	US 2,330,204 A (Campbell et al.) 28 September 1943 (28.09.1943), figs. 1-3 and page 1, col. 2, ln 3-23	15 and 31
Y	US 5,368,256 A (Kalisz et al.) 29 November 1994 (22.11.1994), fig. 2 and col. 5, ln 56-col.6, ln 26	27, 28, 42 and 43
A	US 3,217,097 A (Pauli et al.) 09 November 1965 (09.11.1965), col. 1, ln 10-30 and figs. 1 and 2	1-45
A	US 6,955,324 B2 (Tanielian) 18 October 2005 (18.10.2005), abstract and figs. 1 and 2	1-45

 Further documents are listed in the continuation of Box C.

* 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 application or patent but published on or after the international filing date

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

"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

"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

"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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