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(54) **REMOTE CONTROLLED PAYLOAD DELIVERY**

(75) Inventors: **Anthony P. Quebral**, Greenbelt, MD (US); **Phillip R. Sturgill**, Alexandria; **Mindy W. Morack**, Herndon, both of VA (US); **David A. Culhane**, Columbia; **Chris Batchelor**, White Plains, both of MD (US)

(73) Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, DC (US)

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(58) Field of Search **102/357; 89/1.55; 89/1.56; 244/136, 137.4**

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,021,758	*	2/1962	Sholtz	89/1.56
3,243,084		3/1966	Stegner	
3,779,129	*	12/1973	Lauro	89/1.56
4,164,887	*	8/1979	Ouellette	102/357 X
4,621,579	*	11/1986	Badura et al.	102/357 X
4,825,151	*	4/1989	Aspelin	89/1.56 X
5,016,789		5/1991	Singh	
5,154,314		10/1992	Van Wormer	
5,229,538	*	7/1993	McGlynn et al.	89/1.56 X
5,602,362	*	2/1997	Billard et al.	102/357
5,614,896	*	3/1997	Monk et al.	89/1.56 X
5,623,113	*	4/1997	Valembois	244/137.4 X

* cited by examiner

Primary Examiner—Peter A. Nelson

(74) Attorney, Agent, or Firm—Mark Homer

(57) **ABSTRACT**

A radio frequency receiver, in response to input command signals from some remote source, initiates electrical powering of an electronic firing circuit through which electric pulses are generated and fed through a power cable to impulse cartridges at the upper ends of storage tubes within a payload dispenser. The impulse cartridges in response to such pulses ignites the payloads stored therebelow within the storage tubes closed by retention caps that are ejected with the payload from the dispenser during ignition.

8 Claims, 5 Drawing Sheets

