US006932016B1

(12) **United States Patent**
Gieseke

(10) **Patent No.: US 6,932,016 B1**
(45) **Date of Patent: Aug. 23, 2005**

(54) **VORTEX-ASSISTED PRESSURE CONTROL AT INLET OF UNDERWATER LAUNCH SYSTEM**

(76) Inventor: **Thomas J. Gieseke**, 60 Division St., Newport, RI (US) 02840

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 147 days.

(21) Appl. No.: **10/695,497**

(22) Filed: **Oct. 29, 2003**

(51) **Int. Cl.**[7] **B63B 3/13**
(52) **U.S. Cl.** **114/238**; 114/316; 114/320
(58) **Field of Search** 244/199; 114/20.1, 114/20.2, 238, 239, 312, 313, 318, 319, 337, 382, 320

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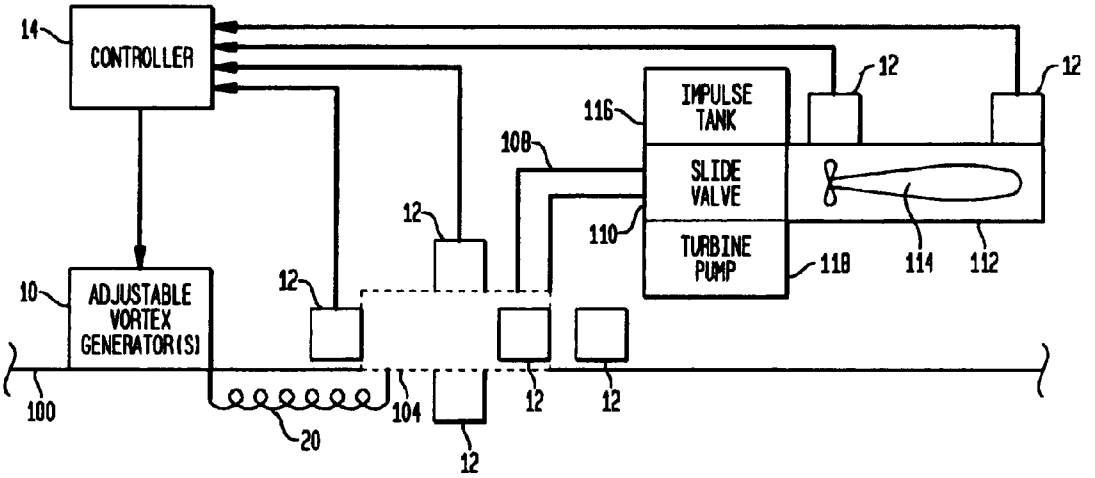
Primary Examiner—Michael J. Carone
Assistant Examiner—John Richardson
(74) *Attorney, Agent, or Firm*—James M. Kasischke; Michael P. Stanley; Jean-Paul A. Nasser

(57) **ABSTRACT**

A vortex-assisted pressure control system is provided for controlling fluid flow into an inlet formed in a vehicle where such fluid flow into the inlet occurs during vehicle movement. Vortex generator(s) is (are) positioned forward of the inlet with respect to forward movement of the vehicle to generate streamwise vortices in the fluid as the vehicle moves through the fluid. Each vortex generator is controllable to adjust strength of the streamwise vortices and a lateral position of the streamwise vortices relative to the inlet. Sensors are used to i) detect the lateral position of the streamwise vortices relative to the inlet, and ii) pressure of the fluid that has entered the inlet. A controller adjusts the vortex generator(s) based on sensor measurements in order to control the lateral position of the streamwise vortices and the pressure of the fluid entering the vehicle via the inlet.

5 Claims, 2 Drawing Sheets