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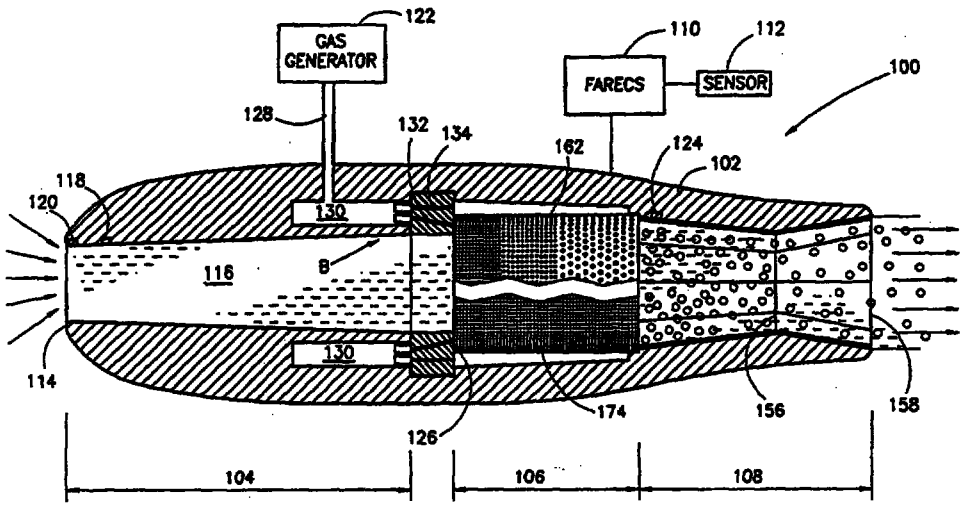
(54) Title: UNDERWATER TWO PHASE RAMJET ENGINE



(57) Abstract

An underwater two-phase ramjet propulsion unit includes an inlet (104) for receiving a flow of water, a compressed gas injector (132, 134) for injecting compressed gas into the flow of water, a mixing chamber (106) for mixing the compressed gas with the water to provide a two-phase flow of working fluid, and a nozzle (108) for accelerating the two-phase working fluid to generate a two-phase jet. The propulsion unit can be implemented with fixed geometry or variable geometry. The propulsion unit includes a supersonic gas injector (132) as well as a subsonic gas injector (134). The propulsion unit includes a control system (110) for controlling the compressor (122), supersonic gas injector (132), subsonic gas injector (134), the geometry of the unit, and the direction of the thrust vector.