US 20220361312A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0361312 A1**

Perricone et al. (43) **Pub. Date: Nov. 10, 2022**

(54) **PLASMA ENGINE USING REACTIVE SPECIES**

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(21) Appl. No.: **17/739,124**

(22) Filed: **May 8, 2022**

Related U.S. Application Data

(60) Provisional application No. 63/186,095, filed on May 8, 2021, provisional application No. 63/215,482, filed on Jun. 27, 2021.

Publication Classification

(51) **Int. Cl.**
H05H 1/24 (2006.01)
B64D 27/24 (2006.01)

(52) **U.S. Cl.**
CPC ***H05H 1/2406*** (2013.01); ***B64D 27/24*** (2013.01)

(57) **ABSTRACT**

A plasma engine includes a plasma source that generates ions from molecular gas species received at a gas input where at least some of the ions generated are atomic species ions. An ion extractor is configured to extract ions from the plasma source with an electric field. A housing comprising a recombination region receives ions extracted from the ion extractor. At least some of the atomic species ions recombine into molecular species in the housing, thereby releasing energy for thrust.