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Brand et al.

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(54) **RAM BOOSTER**

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(73) Assignee: **The United States of America as represented by the Administrator of the National Aeronautics and Space Administration**, Washington, DC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 612 days.

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Related U.S. Application Data

(63) Continuation-in-part of application No. 11/422,554, filed on Jun. 6, 2006, now abandoned.

(51) **Int. Cl.**
B64G 1/00 (2006.01)

(52) **U.S. Cl.** **244/158.9**; 244/158.1; 244/171.1; 244/171.3

(58) **Field of Classification Search** 244/158.1, 244/158.9, 159.1, 159.3, 171.1, 171.3, 171.4
See application file for complete search history.

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Primary Examiner — Joshua Michener

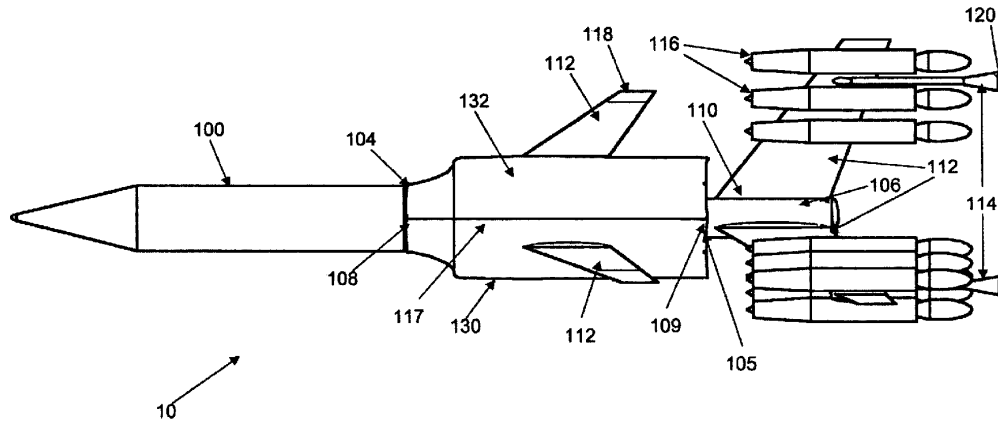
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(57) **ABSTRACT**

The present invention is a space launch system and method to propel a payload bearing craft into earth orbit. The invention has two, or preferably, three stages. The upper stage has rocket engines capable of carrying a payload to orbit and provides the capability of releasably attaching to the lower, or preferably, middle stage. Similar to the lower stage, the middle stage is a reusable booster stage that employs all air breathing engines, is recoverable, and can be turned-around in a short time between missions.

7 Claims, 6 Drawing Sheets



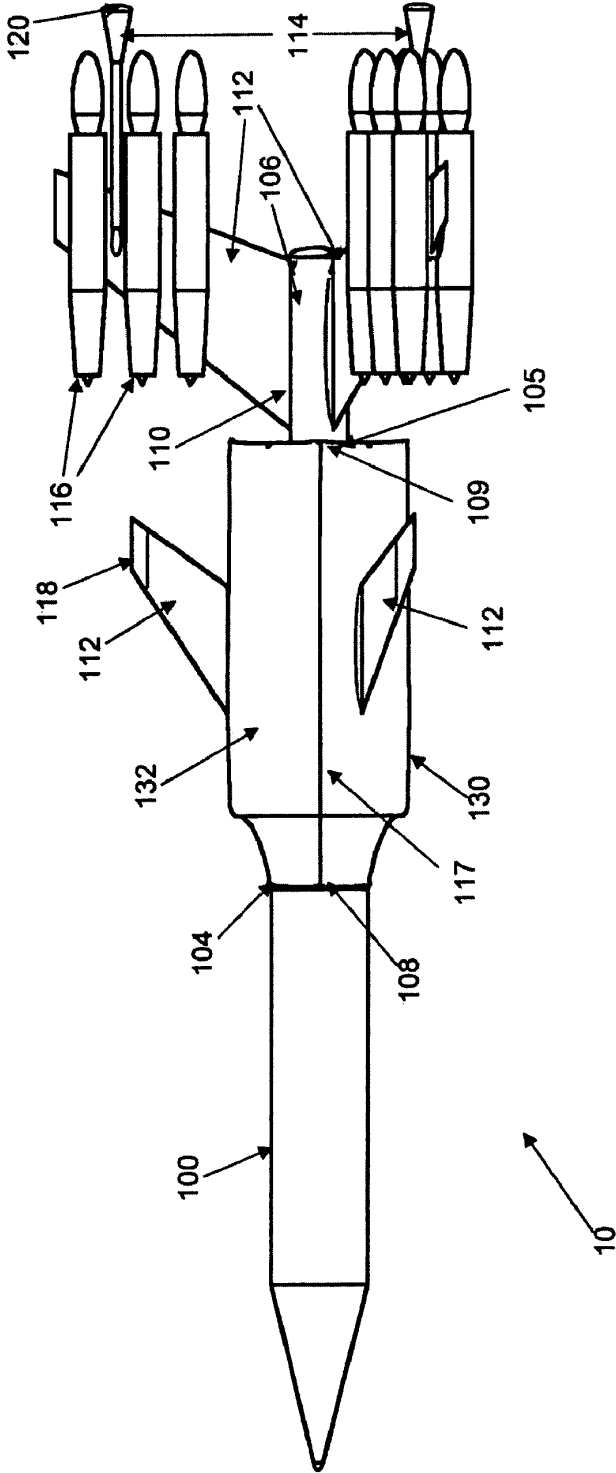
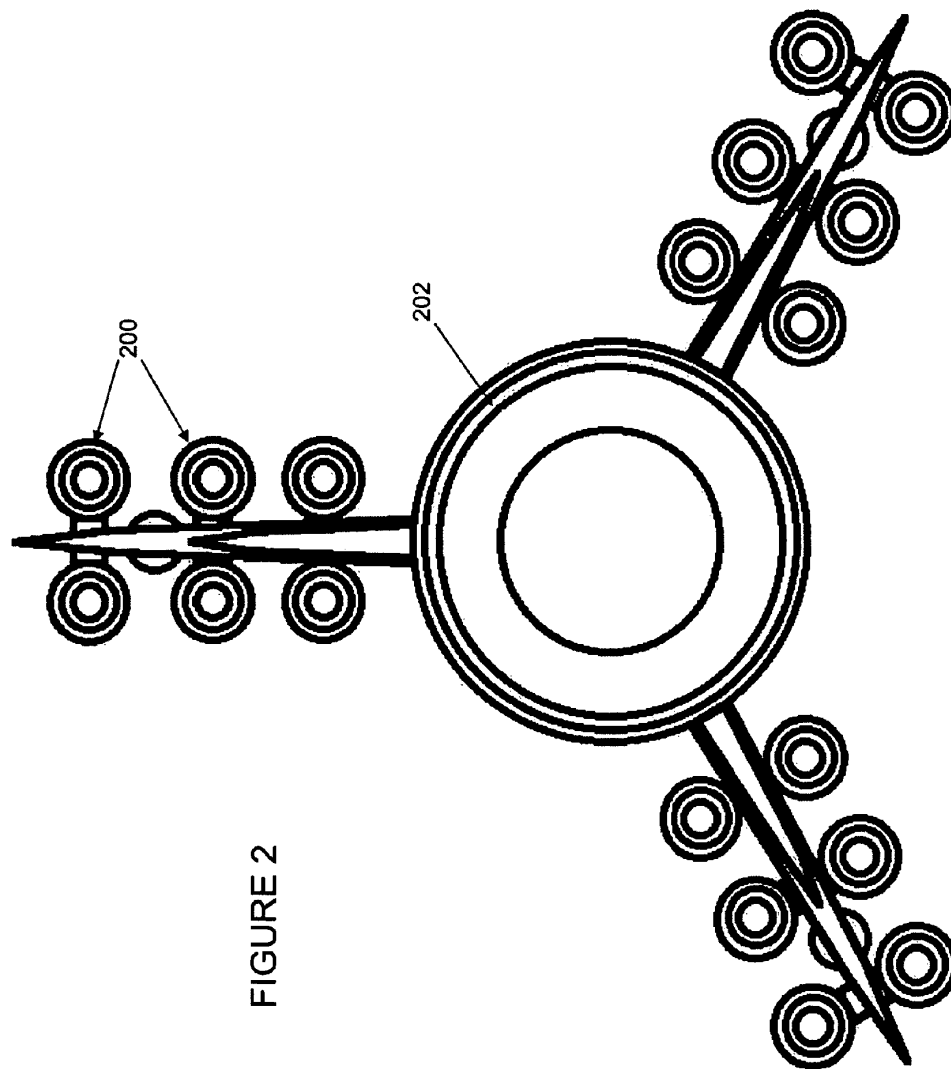


FIGURE 1



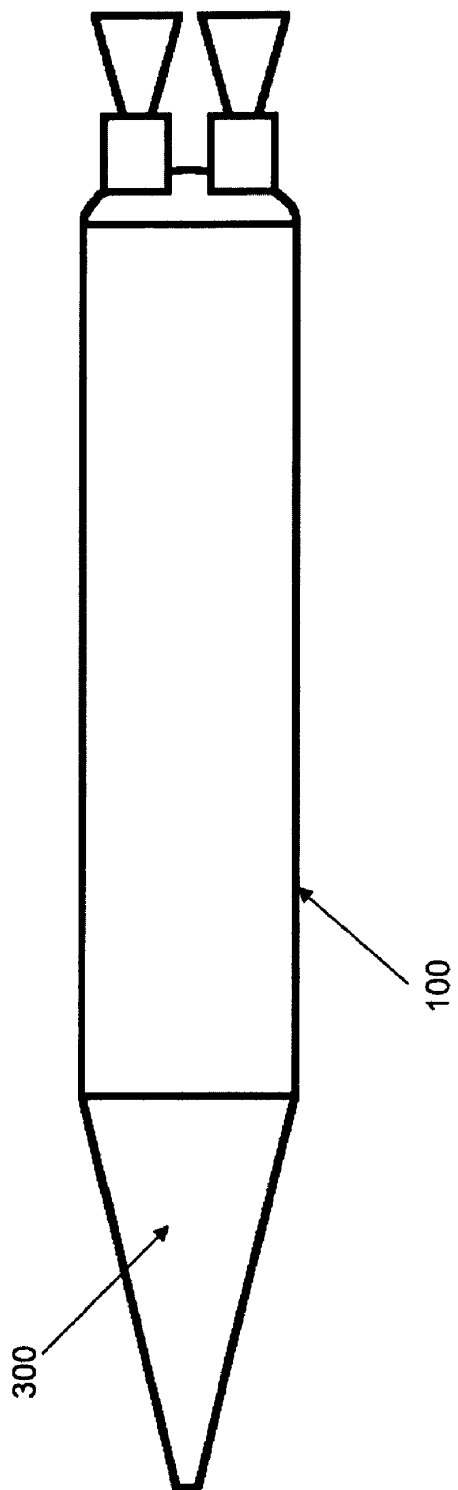


FIGURE 3

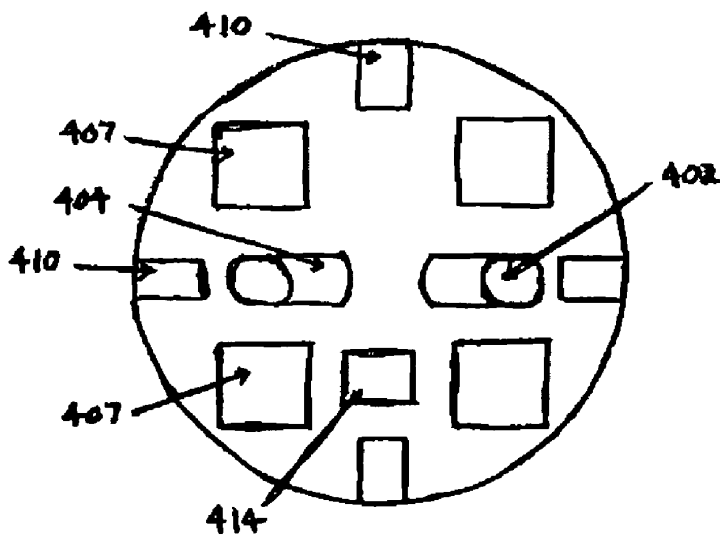


FIGURE 4a

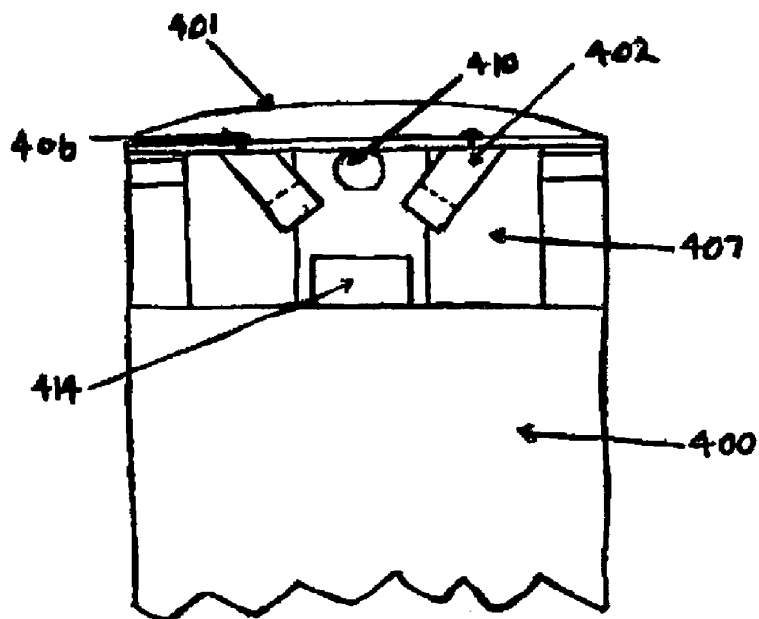


FIGURE 4b

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