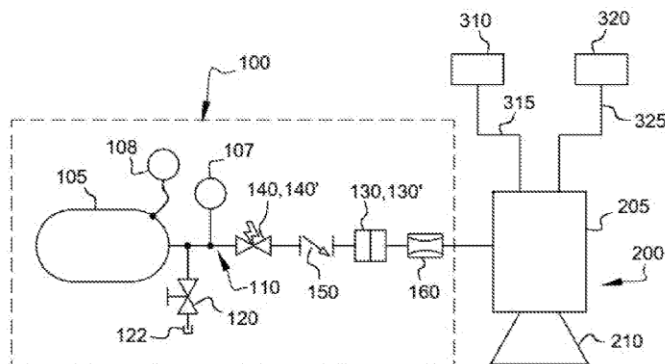


IGNITION DEVICE FOR ROCKET ENGINES

Technological advantages

Efficient system :

- No use of active component (spark plugs, lasers, converters...).
- Reduced recurring costs.
- Fewer operational constraints.
- Compatible with ground and space ignition.



Schematic view of the invention :

- (100) Passive ignition device
- (105) Pressurized gas tank
- (110) Feeding lines
- (130) Rupture component
- (200) Propulsive set
- (205) Combustion chamber
- (210) Nozzle
- (310, 320) Primary and secondary liquid propellant tanks
- (315, 325) Circulation lines

Invention synthesis

The invention deals with a passive system for rocket engines ignition.

Regular methods for rocket engine ignition involve active systems using an activation energy such as spark plugs, pyrotechnic blasts, hot surfaces, lasers...

The invention presents a passive system based on an auxiliary tank filled with high pressure gaseous hydrogen (min. 50 bars). The device uses a feeding line with a double check valve and a rupture component (eg. a tared membrane, disk) breaking under pressure. A self-ignition phenomena takes place with the gas present in the combustion chamber to initiate the rocket engine ignition.

Commercial benefits

- Simple configuration, reduced costs.
- Passive system limiting risks of malfunctions and breakdown.

Potential applications

- Rocket engines.

Patented invention - under license.