

# United States Patent [19]

Hodgkins et al.

[11]

[45]

(NAVJORDSTA)

63/6)

4,452,039

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[54] EXPENDABLE INFRARED SOURCE AND METHOD THEREFOR

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### [57] ABSTRACT

An IR source and method for generating IR radiation whereby a propellant is burned in a first chamber to produce a product gas which is exited through a critical exit, is accelerated to a supersonic velocity by expanding into a second chamber, is passed through a standing shock wave in the chamber to reduce the gas velocity to a subsonic level, is exited through radial orifices into a larger third chamber where the gas is mixed to obtain a substantial uniformity in temperature and specie, is accelerated by expansion to a chosen subsonic velocity, and is exhausted to the atmosphere.

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[51] Int. Cl.<sup>3</sup> ..... C06D 5/00

[52] U.S. Cl. .... 60/207; 60/253; 102/336; 102/505

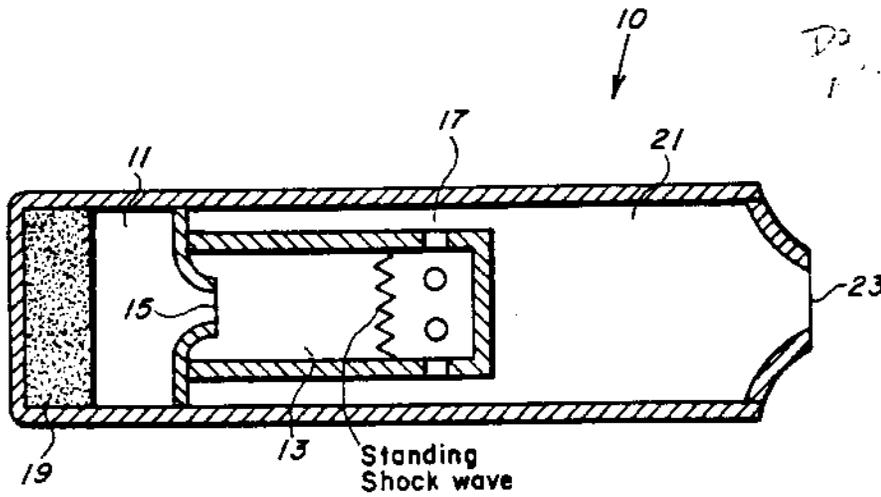
[58] Field of Search ..... 89/1 A; 102/336, 505; 60/207, 219, 253, 254

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16 Claims, 2 Drawing Figures



Revised 7/10/80  
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