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(54) **METHOD FOR CREATING AN AERONAUTIC SOUND SHIELD HAVING GAS DISTRIBUTORS ARRANGED ON THE ENGINES, WINGS, AND NOSE OF AN AIRCRAFT**

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See application file for complete search history.

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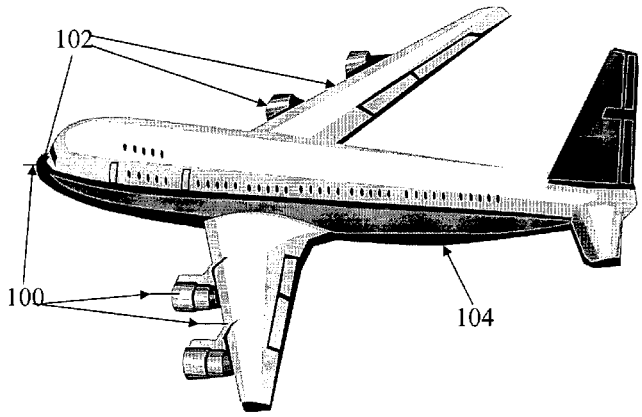
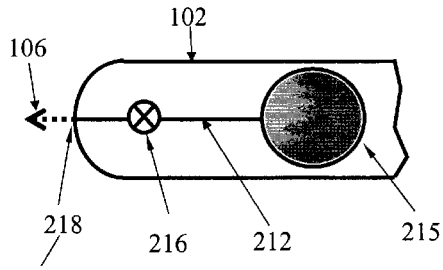
(57) **ABSTRACT**

The present invention blocks and/or attenuates the upstream travel of acoustic disturbances or sound waves from a flight vehicle or components of a flight vehicle traveling at subsonic speed using a local injection of a high molecular weight gas. Additional benefit may also be obtained by lowering the temperature of the gas. Preferably, the invention has a means of distributing the high molecular weight gas from the nose, wing, component, or other structure of the flight vehicle into the upstream or surrounding air flow. Two techniques for distribution are direct gas injection and sublimation of the high molecular weight solid material from the vehicle surface. The high molecular weight and low temperature of the gas significantly decreases the local speed of sound such that a localized region of supersonic flow and possibly shock waves are formed, preventing the upstream travel of sound waves from the flight vehicle.

7 Claims, 7 Drawing Sheets