Ultrasonic Atomizer

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New nozzle occupies the niche between hydraulic and pneumatic injectors. Hydraulic nozzles energy to fuel atomization is applied to liquid, and pneumatic energy is supplied to gas. Proposed to produce jets, in which energy to atomize the fuel is fed directly to the design, not to the working bodies. Energy is supplied to the structure of ultrasonic oscillations. Effect of nozzle is based on magnetostrictive oscillations of a rod. Fluctuations occur with ultrasonic frequency. The liquid is sprayed if gets on the end face of the rod. A new way of spraying uses double resonance. It is a interference ultrasound. The rod is in the flask. The first resonance is observed in magnetostrictive terminal. The second resonance observed inside the bulb. Crests of two standing waves stronger sprayed liquid stronger. Ultrasonic nozzle can be mounted on the input pipe of the engine. The fuel will be better to stay focused and better to burn. Emissions reduced. Spray the terminal can be placed in the spark plug. The fuel will not fill the spark plug even during the cold start of the engine. Using resonance fuel can spray in the working volume of the cylinder. Ultrasonic nozzle can be used in spray guns. The paint particles are small. Appearance of the coating will be better. Protective properties of paint will improve. Layout ultrasonic nozzles are made and tested.

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