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(54) **Liquid injection apparatus**

(57) A liquid injection apparatus is provided which is capable of uniformly atomizing and injecting liquid such as fuel even if the surrounding environment changes significantly.

A liquid injection apparatus (10) comprises an injection unit (14) fixed to a liquid injection space (21) defined by, e.g., a suction pipe (20) of an internal combustion engine, and a pressurizing pump (11) for pressurizing liquid from a liquid storage tank (22) up to a pressure to supply the liquid to the injection unit and to inject the liquid into the space. The injection unit comprises, in or-

der to atomize the liquid supplied by the pressurizing pump, a plurality of chambers in which a piezoelectric/electrostrictive element is formed at least on its wall surface, and a plurality of liquid ejection nozzles. Vibration energy induced by the piezoelectric/electrostrictive element is given to the pressurized liquid in the chamber of the injection unit. and the liquid is atomized and injected into the liquid injection space from the extremity of the liquid ejection nozzle.

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 October 2003	Examiner Blanc, S
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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