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(54) Method and apparatus for dispensing a liquid with a pipetting needle

(57) A method and a micropipetting apparatus for dispensing a liquid volume into a vessel by means of a pipetting needle and without any contact between said needle and a liquid contained in said vessel. The method comprises forming a drop (17) at the delivery tip (22) of the pipetting needle (11), said drop being retained at the tip by adhesion forces, and ejecting said drop (17) from said tip (22) by focusing at the tip of the pipetting needle (11) a mechanical excitation wave applied to an excitation point at some distance from said needle. The apparatus comprises a pipetting needle (11), an electromechanical transducer (32) mechanically connected with said pipetting needle (11), electrical signal generating means (33) for generating an excitation pulse (26) signal and for applying this signal to said electromechanical transducer (32) for mechanically exciting said pipetting needle (11) with a pulse of mechanical waves that propagate through said needle.

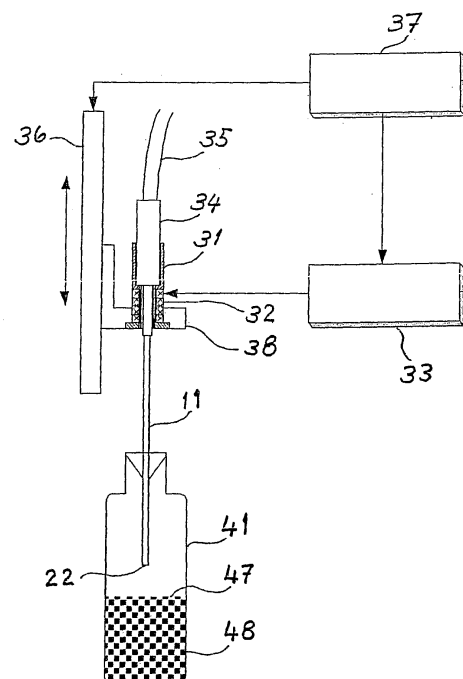


Fig. 13



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X	US 2004/071601 A1 (LAGALLY MAX G ET AL) 15 April 2004 (2004-04-15) * paragraph [0004] * -----	1-10	
A	US 6 296 811 B1 (SASAKI GLENN C) 2 October 2001 (2001-10-02) * column 4, line 65 - column 6, line 15; figures; examples * -----	1-10	
A	US 6 232 129 B1 (WIKTOR PETER) 15 May 2001 (2001-05-15) * abstract; claims * -----	1-10	TECHNICAL FIELDS SEARCHED (IPC)
A	DRAFTS B: "ACOUSTIC WAVE TECHNOLOGY SENSORS" IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 49, no. 4, PART 2, April 2001 (2001-04), pages 795-802, XP001093469 ISSN: 0018-9480 * the whole document * -----	1-10	B01L
-The present search report has been drawn up for all claims-			
4	Place of search Munich	Date of completion of the search 18 January 2006	Examiner Smith-Hewitt, L
CATEGORY OF CITED DOCUMENTS 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		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	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 05 07 5977

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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