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(54) **Machine for cleaning firearms and firearm components, and detergent solutions to be used in machines for cleaning firearms**

(57) A machine for cleaning firearms and firearm components, comprising a box-like frame (11) that forms an open tank (12), at least one vibrating transducer (14) being associated with the bottom (13) of the tank (12) and being functionally connected to a corresponding ultrasound generator (16) associated with a management and control microprocessor that is interfaced with the user by a control panel (17). The tank (12) can be filled with detergent solution; at least one discharge path (18) being provided on the bottom of the tank (12) and being associated with flow control means (19); thermostat-controlled resistors and means (22) for supporting the firearm components to be cleaned are further associated with the tank (12); the components are immersed in the detergent solution during cleaning.

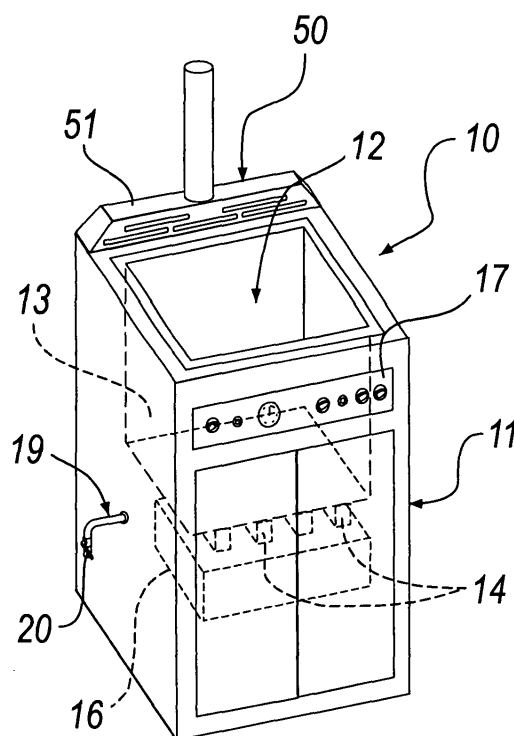


Fig. 1



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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 202 523 A (GROSSMAN ET AL) 13 April 1993 (1993-04-13) * claims 1,4,5; figure 1 *	1	F41A29/00 B08B3/12 C11D11/00
A	* abstract *	22	
X	----- US 5 113 881 A (LIN ET AL) 19 May 1992 (1992-05-19) * claims 1-5 *	1,2	
X	----- PATENT ABSTRACTS OF JAPAN vol. 1999, no. 10, 31 August 1999 (1999-08-31) & JP 11 127831 A (SND:KK), 18 May 1999 (1999-05-18) * abstract *	1,2	
X	----- US 2002/189653 A1 (HEIBERG ERIC ET AL) 19 December 2002 (2002-12-19) * claim 1; figure 1 *	2,3	
A	* claim 26; figure 11 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F41A B08B C11D
-The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		25 May 2005	Devillers, E
<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</p> <p>& : member of the same patent family, corresponding document</p>			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-16,22



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**LACK OF UNITY OF INVENTION
SHEET B**

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-16,22

a machine suitable for cleaning firearms and firearms
components

2. claims: 17-21

a detergent solution

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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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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25-05-2005

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82