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(54) **PNEUMATIC TOOL**

(57) A pneumatic tool including a cylinder, a piston inside the cylinder and adapted to reciprocate, and a piston rod connected to the piston. The piston has a first seal ring and a second seal ring fixed thereto. The first seal ring and the second seal ring are spaced apart along the cylinder axial direction and a storage space for storing lubricating oil is defined between the first seal ring and the second seal ring. The pneumatic tool in the disclosure may effectively avoid the problems that the frictional force increases because of the lubricating oil depleting due to the use of the tool for a long time, and even worse the pneumatic tool does not work effectively.

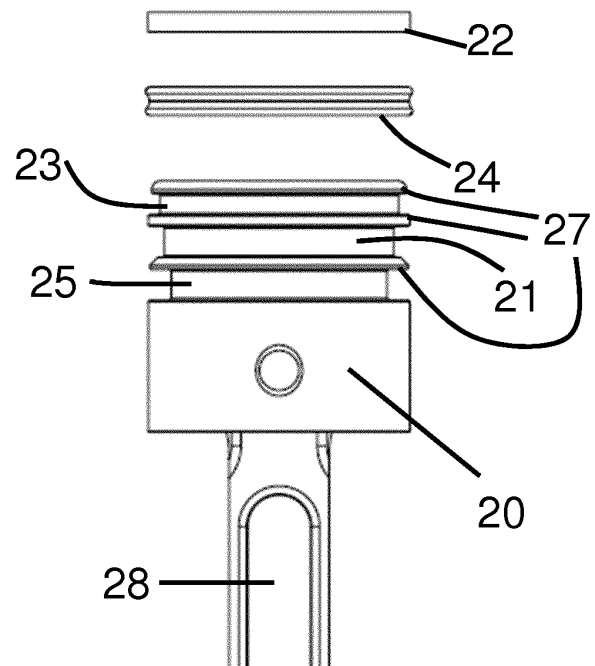


Fig. 1a



EUROPEAN SEARCH REPORT

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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 (IPC)
X	US 2009/090759 A1 (LEIMBACH RICHARD L [US] ET AL) 9 April 2009 (2009-04-09) * paragraphs [0009] - [0024], [0070] - [0082], [0112] - [0114], [0197] - [0201]; claims; figures *	1,2	INV. B25C1/04
X	US 3 160 075 A (POWERS RICHARD E) 8 December 1964 (1964-12-08) * columns 1,5,7; figures *	1,2	
X	US 3 572 211 A (DOYLE RICHARD H) 23 March 1971 (1971-03-23) * columns 2-5; figures *	1,2	
A	US 2015/136826 A1 (MASSLER ORLAW [LI] ET AL) 21 May 2015 (2015-05-21) * the whole document *	1,2	
A	US 6 016 946 A (PHILLIPS ALAN [US] ET AL) 25 January 2000 (2000-01-25) * columns 10-12; claims; figures *	1,2	
A	US 4 523 646 A (DOYLE RICHARD H [US] ET AL) 18 June 1985 (1985-06-18) * columns 1,2; figures *	1	
<p>The present search report has been drawn up for all claims</p>			<p>TECHNICAL FIELDS SEARCHED (IPC)</p> <p>B25C</p>
Place of search		Date of completion of the search	Examiner
The Hague		5 April 2018	David, Radu
<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>			

EPO FORM 1503 03.82 (P04C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due 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 those claims for which no payment was due.

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, 2

☐ The present supplementary 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 (Rule 164 (1) EPC).



**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, 2

pneumatic tool with seal rings on piston, for improved lubrication

2. claims: 3-7

pneumatic tool with a door member on ejection passage, for improved access when jams occur

3. claims: 8-11

pneumatic tool with an air hole device linked to the pressure chamber, for improved power control

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

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5 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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2018

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