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(54) Pneumatic needle gun

(57) A pneumatic needle gun 10 comprises a housing 12, a hollow cylinder 24 in the housing 12 having a piston 30 arranged for sliding reciprocal movement therein. The piston 30 is actuated by gas pressure. The

cylinder 24 has a gas inlet for the passage of actuating gas, the gas inlet comprising a bore 36 in the wall of the cylinder 24. The bore 36 has a curved concave mouth 34 to reduce turbulence on entry of gas into the cylinder 24.

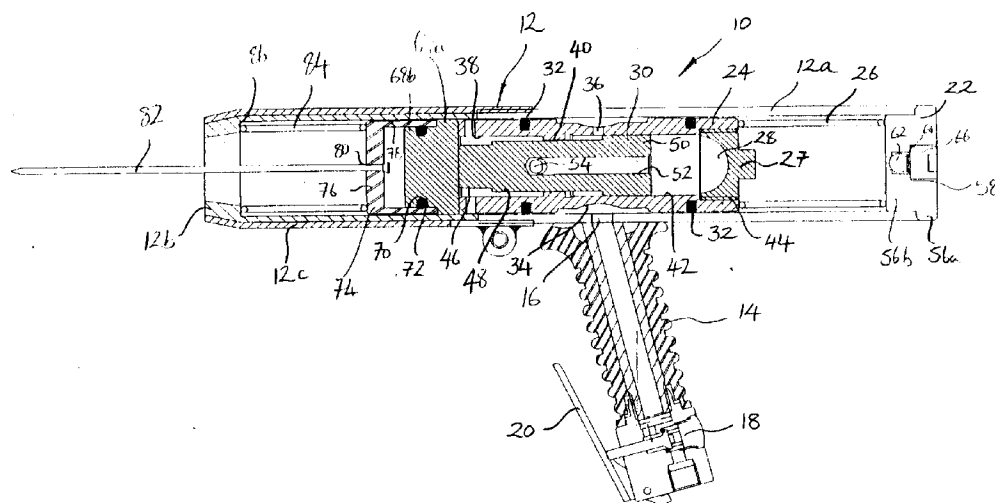


Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 98 30 0076

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.6)
A	CH 600 993 A (ARX AG) * column 2, line 17 - line 45 * * figure *	1-3, 14, 15	B08B7/02 B25D9/14 B25D17/02
A	FR 2 622 826 A (MAX CO LTD) * page 10, line 22 - line 29 * * figures 1,2 *	1-3	
A	GB 2 138 347 A (MIKIYA TOSHIO) * abstract; figures *	1-3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B08B B25D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 April 1998	Examiner HAEGEMAN M.
<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

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees 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 claims:
- ☐ 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.
- ☐ 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- 3,14,15



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 98 30 0076

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: 1-3 14 15

Pneumatic needle gun with hollow cylinder having a gas inlet bore with a broadening mouth to reduce turbulence.

2. Claims: 4-6

Pneumatic needle gun having a pressure regulating valve to limit maximum pressure in the housing

3. Claims: 7-11

Pneumatic needle gun having a piston with a rearwardly angled gas entry opening extending from the outer side surface into the longitudinal bore.

4. Claims: 12-13

Needle gun having a ring of resilient material for locating the cup on the slug by means of frictional fit.