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(54) **Self-centring expanding shaft**

(57) A composite expanding shaft comprising a pneumatic expanding blocking system of a bobbin and a pneumatic centering system is disclosed, wherein the pneumatic system comprises at least a movable thrust element (3ai) operated by a fluid under pressure supplied into an expansion chamber (4), a first passage

way (8a) being apt to connect said expansion chamber (4) to an inflation duct (11) of the pneumatic system, and comprising further an obstructing means (9a) of said first passage way (8a), jointly movable with said thrust element (3ai) of the centering system, apt to keep closed said first passage way (8a) for at least a predetermined portion of the thrust element stroke.

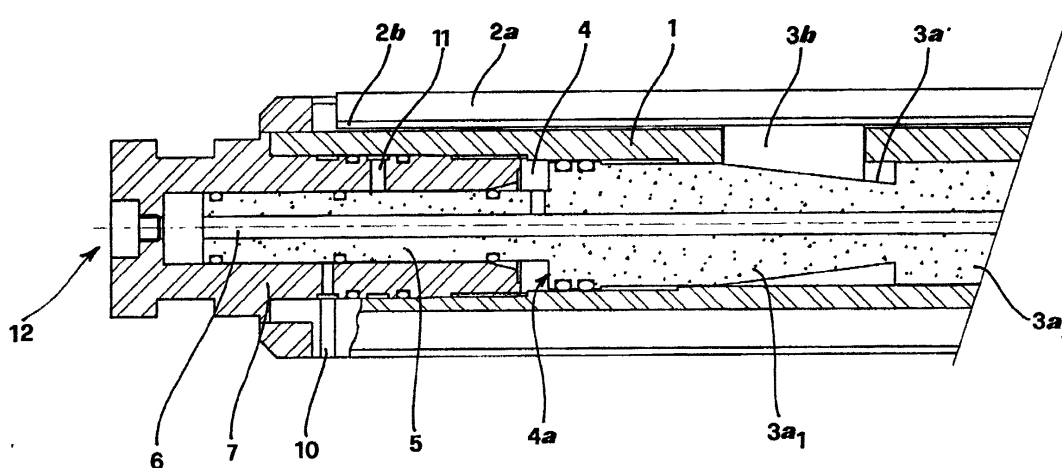


FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	FR 2 632 294 A (J. ACHARD-PICARD) 8 December 1989 (1989-12-08) * claims 1,2; figure 1 *	1,11	B65H75/24
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 March 2001	Examiner Goodall, C
CATEGORY OF CITED DOCUMENTS		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
ON EUROPEAN PATENT APPLICATION NO.**

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23-03-2001

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