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EUROPEAN PATENT APPLICATION

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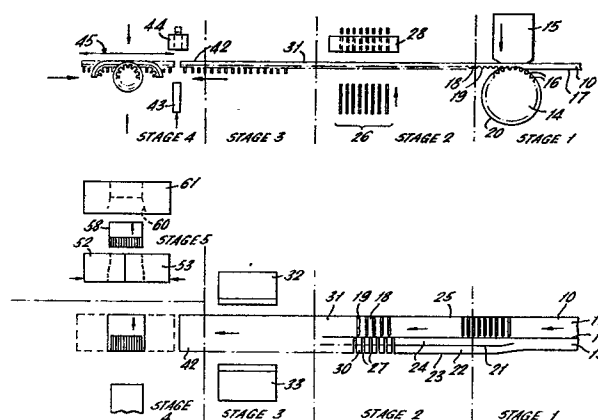
⑭ Designated Contracting States: **AT BE CH DE FR IT LI**
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report: **07.01.81 Bulletin 81/1**

⑤ **Method and apparatus for making commutator shells, commutator shells made thereby, and commutators and rotating electric machines incorporating such shells.**

⑤ Shells for commutators are made by performing a number of forming operations on stock metal strip before the strip is cut into lengths and rolled into a cylinder. A roller (14) forms parallel transverse grooves (18) and ribs (19) in one side of the strip. Punches (26) cut slots (27) in alignment with the grooves (18) to form fingers along one edge of the strip. Knives (32) skive under the ribs (19) to form anchors. Then the strip is cropped into lengths by a punch, bent into a cylinder by a two-stage press and forced through a tapered sizing die (61). All operations are performed in automatic sequence on a multi-stage slide press machine.





European Patent
Office

EUROPEAN SEARCH REPORT

0019472
Application number

EP 80 30 1610.4

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
P,X	<u>EP - A1 - 0 007 186 (QUALTEX)</u> * claims 3 to 6, 10; page 4, line 1 to page 7, line 2; fig. 1 to 8; claim 7; claim 11 *	1,2,5 7,11 8,9	H 01 R 43/08 H 01 R 43/06 H 01 R 39/04
X	<u>DE - A - 1 955 122 (KAUTT & BUX)</u> * page 1, lines 10 to 19; page 2, line 20 to page 5, line 12; fig. 1 to 4; page 4, lines 9 to 16; fig. 1 *	1,2,5, 6,11 3,4	TECHNICAL FIELDS SEARCHED (Int. Cl.) H 01 R 39/04 H 01 R 43/06 H 01 R 43/08
A	<u>US - A - 1 511 277 (FROHNE)</u> * page 2, lines 50 to 86; fig. 2, 3, 4, 6 *	1,11	CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
D,A	<u>GB - A - 1 428 054 (KAUTT & BUX)</u> * complete document *		&: member of the same patent family, corresponding document
<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
Berlin	09-10-1980	HAHN	