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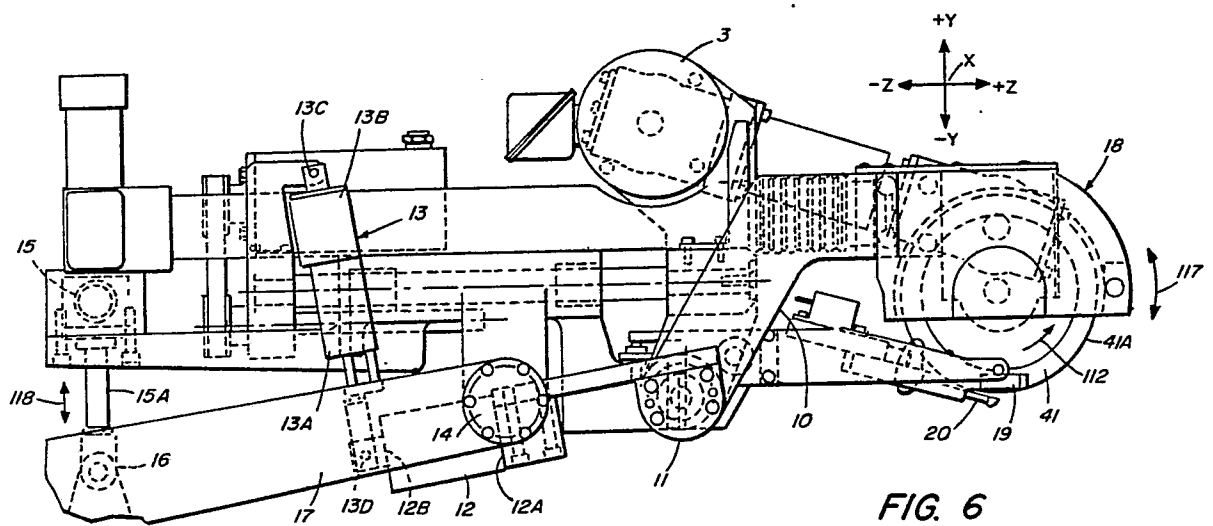
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15.11.89 Bulletin 89/46(71) Applicant: **INTERNATIONAL SHOE MACHINE
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BROOKES, MARTIN & WILSON Prudential
Buildings 5 St. Philip's Place
Birmingham B3 2AF(GB)(54) **Machine for automatically roughing the cement margin of a footwear upper assembly.**

(57) Apparatus (and method) for automatically roughing the cement margin (103) of a shoe or other footwear assembly (104), which footwear upper assembly includes an upper mounted on a last and an inner sole disposed upon the bottom of the last and connected to the upper. The apparatus (i.e. a roughing machine) typically includes a disc-shaped wire wheel (or other roughing tool) (41) positioned with the plane of the brush approximately perpendicular to the cement margin at the region of contact between the two. The roughing machine includes a mechanism (1) to receive the upper assembly and provide some combination of movements between the upper assembly and the periphery of the wire wheel to achieve a constant region (or area) of contact between the two as the cement margin moves with respect to the wire wheel in the course of roughing. The wire wheel is supported at one end of an intermediately pivoted action arm (10); a load measuring beam (12) is connected to the other end of the action arm to provide electrical signals proportional to or representative of the pressure force between the wire wheel and the cement margin at the region of contact. A servo-valve actuated air cylinder (13) drives the action arm to load the wire wheel upon the cement margin, the amount of loading

being closely controllable (e.g. $\pm 2.25 \times 10^{-1}$ kgf [about one-half \pm lb.f]) in response to the electrical signals which are connected as input to the servo-valve as control signals.

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EP 87 30 5351

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. 4)
Y, D	EP-A-0 150 116 (ISMC) * Whole document *	1-9	A 43 D 37/00
A	---	10, 15	
Y	US-A-2 733 588 (USMC) * Column 2, lines 62-67 *	1, 2, 6-8	
A	---	10, 15	
Y	EP-A-0 043 645 (USMC) * Page 4, lines 20-27; page 14, lines 18-32 *	3-5, 9	
A	DE-A-2 738 182 (USMC) ---	4	
A	US-A-3 992 743 (ISMC) ---	10, 15	
A	FR-A-2 529 763 (ANVER) ---		
A	FR-A-2 500 279 (ANVER) -----		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			A 43 D
Place of search		Date of completion of the search	Examiner
THE HAGUE		24-08-1989	RIS M.
CATEGORY OF CITED DOCUMENTS			
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 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			