(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 413 445 A3**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: **90308066.1**

(51) Int. Cl.5: **A43D 8/40**

(22) Date of filing: **24.07.90**

(30) Priority: **12.08.89 GB 8918441**
09.10.89 GB 8922711

(43) Date of publication of application:
20.02.91 Bulletin 91/08

(84) Designated Contracting States:
DE FR GB IT

(88) Date of deferred publication of the search report:
08.04.92 Bulletin 92/15

(71) Applicant: **BRITISH UNITED SHOE MACHINERY LIMITED**
PO Box 88 Ross Walk
Belgrave Leicester LE4 5BX(GB)

(72) Inventor: **Cameron, Ewen Rothnie**
17, Granville Avenue
Oadby, Leicester LE2 5FL(GB)
Inventor: **Mansfield, Graham John**
'Bhakti' The Square
Newton Harcourt, Leicester LE8 0FO(GB)
Inventor: **Smith, Andrew**
65 Sycamore Way
Littlethorpe, Leicester LE9 5HW(GB)

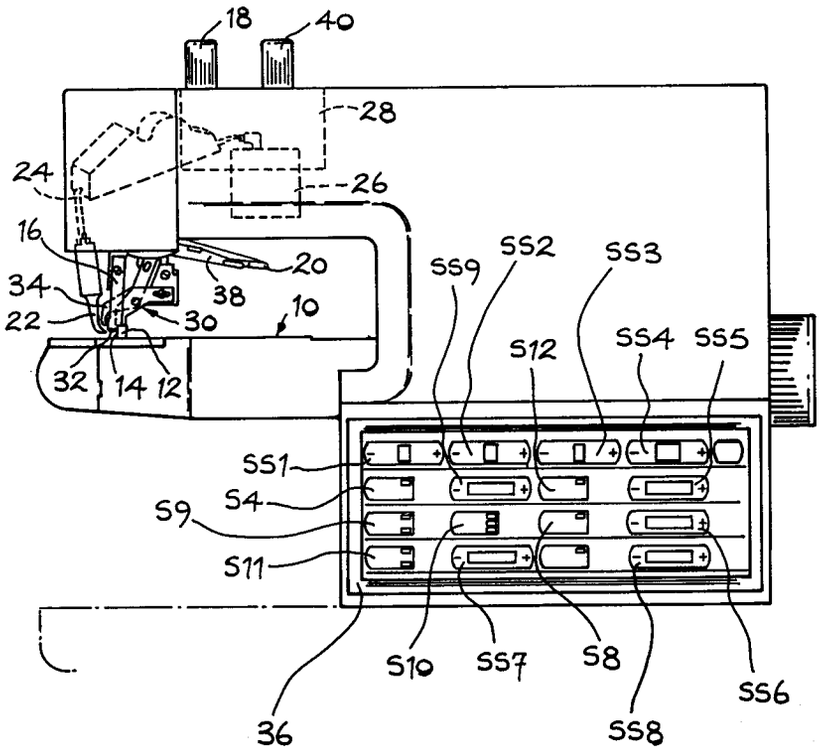
(74) Representative: **Atkinson, Eric**
c/o British United Shoe Machinery Limited
P.O. Box 88 Ross Walk
Belgrave Leicester LE4 5BX(GB)

(54) **Folding machines.**

(57) The workpiece feeding means is operated from a main drive shaft which is driven by a motor (M1) in response to drive signals supplied by computer control means, the value of which signals depends upon the value of a signal supplied to a computer control means by a transducer (T) incorporated in a foot treadle. Moreover, in order to ensure that the actual speed matches the desired speed, the rotation of the drive shaft is monitored and any appropriate compensation then made by the computer control means. Provision is also made for varying the range of speeds within which the machine will operate, such variation also being achieved by the computer control means such that, for any given setting of the transducer, the particular feed speed will be varied proportionally; this means that the overall travel of the treadle will be constant regardless of the width of the speed band. Provision is further made for setting, through the computer control means, feed lengths for "normal", "snipping" and "pleating" operations and for storing a combination of selected feeds lengths as a style pattern for subsequent recall. In addition, for varying the feed length during a cycle of operation a stepping motor (SM1) is provided and the computer control means is effective to "phase in" any feed length over a pre-determined number of rotations of the main drive shaft. Any variation of the feed length from the "normal" setting, furthermore, serves to vary the adhesive supply rate by a proportion determined by the relationship between the selected feed length and the "normal" feed length as set.

EP 0 413 445 A3

Fig_1


18
40
28
24
26
16
20
34
38
22
30
10
32
14
12
SS9
SS2
SS3
S12
SS4
SS5
SS1
S4
S9
S11
S10
SS7
S8
SS6
36
SS8

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 30 8066

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.5)
D,Y	GB-A-2 141 968 (THE BRITISH UNITED SHOE MACHINERY COMPANY LIMITED) * the whole document * *	1-3,6-11	A 43 D 8/40
Y	EP-A-0 028 138 (MATSUSHITA ELECTRIC INDUSTRIAL CO. LTD.) * abstract; claims 1-8; figure 1 * *	1-3,6-11	
A	IEEE Transactions on Industry Applications IA-21 (1985) July/Aug., No. 4, New York, USA * pages 1001-1008, A Fully Digitalized Speed Regulator * *	2,3	
D,A	EP-A-0 154 441 (USM CORPORATION) * abstract; claims 1-8; figure 2 * *	7-9	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A 43 D
H 02 P
G 05 D

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	05 February 92	SUENDERMANN R.O.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same catagory
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