

EUROPEAN PATENT APPLICATION

Application number: **84107739.9**

Int. Cl.⁴: **B 21 F 35/00**
B 21 F 3/12

Date of filing: **04.07.84**

Priority: **04.07.83 JP 120342/83**
14.05.84 JP 94728/84

Date of publication of application:
09.01.85 Bulletin 85/2

Date of deferred publication of search report: **14.01.87**

Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

Applicant: **FRANCE BED COMPANY, LIMITED**
31-15 Sakuragaoka-cho
Shibuya-ku Tokyo(JP)

Inventor: **Sasaki, Noboru**
15 Jokawara-cho
Akishima-shi Tokyo(JP)

Inventor: **Iwata, Yasuji**
1840-91, Sunagawa-cho
Tachikawa-shi Tokyo(JP)

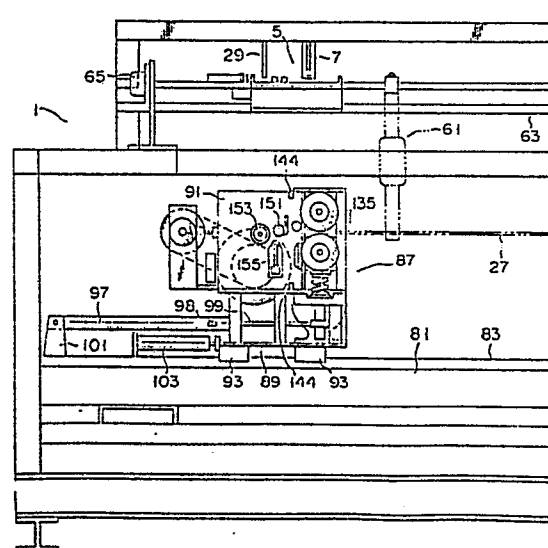
Inventor: **Mukai, Teruo**
2261 Ogawanishimachi
Kodaira-shi Tokyo(JP)

Representative: **Kuhnen, Wacker & Partner**
Schneggstrasse 3-5 Postfach 1729
D-8050 Freising(DE)

Apparatus for manufacturing spring units.

In an apparatus for manufacturing springs, a frame body (1) has guide rails (83) on which a pair of movable bodies (87) are mounted to be movable. Each of the movable bodies (87) has rotatable holding rollers (135) between which a wire (27) which is to be processed is held, and each body also has a shaping roller (153) for bending the end of the wire in a coil. Arranged between the shaping roller (153) and the holding rollers (135) are a guide member (151) for defining the supply passage for the wire, and a pitch rod for determining the pitch of the coil formed. When the holding rollers (135) are rotated, while holding the wire (27), the movable bodies (87) are moved toward each other by the pulling force exerted to the wire (27), and the wire (27) is supplied from between the paired holding rollers (135) to the shaping roller (153) through the guide member (151). The pitch rod (155) is reciprocated as the movable bodies run, and as one turn of the wire coil strikes against the pitch rod (155), making it possible to form spiral springs at both ends of the wire (27).

FIG. 2A





European Patent
Office

EUROPEAN SEARCH REPORT

0130616
Application number

EP 84 10 7739

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)
X	DE-A-1 602 637 (P.A. RENTROP) * Page 4, line 16 - page 9, line 5; claims; figures 1-10 *	1-6, 9, 10	B 21 F 35/00 B 21 F 3/12
Y	--- US-A-3 993 106 (YOKOTA) * Claims 11,12; column 9, line 22 - column 10, line 65; figures *	1, 8, 11, 13-15	
A	--- US-A-3 245 433 (TAYLOR) * Column 1, lines 11-65; column 10, lines 8-37; figures 1-3, 21, 22 *	1, 8, 11, 13-15	
A	--- US-A-4 387 585 (CAVAGNERO) * Column 3, line 52 - column 4, line 17; figures 3, 4 *	5	TECHNICAL FIELDS SEARCHED (Int. Cl. 4) B 21 F A 47 C
P, A	--- DE-A-3 236 663 (TOYOTA) -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14-10-1986	Examiner THE K.H.
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	