

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 258 301 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
22.10.2003 Bulletin 2003/43

(51) Int Cl.7: **B21D 39/02**

(43) Date of publication A2:
20.11.2002 Bulletin 2002/47

(21) Application number: **02253408.5**

(22) Date of filing: **15.05.2002**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

- **Cote, Ray**
Windsor, Ontario N8N 2M1 (CA)
- **Raffin, Louis**
Windsor, Ontario N8W 5P8 (CA)
- **Harrison, Lee**
Windsor, Ontario N8R 2B7 (CA)

(30) Priority: **18.05.2001 US 861067**
24.10.2001 US 999881

(74) Representative: **Shelley, Mark Raymond et al**
K R Bryer & Co.,
7 Gay Street
Bath BA1 2PH (GB)

(71) Applicant: **VALIANT CORPORATION**
Windsor, Ontario N8N 5A8 (CA)

(72) Inventors:
• **Denis, Keith Saint**
Tecumseh, Ontario N8N 2M1 (CA)

(54) **Hemming machine with movable die cartridges**

(57) A hemming machine having a stationary base (22) and defining a work station (24). A lifting beam (26) is vertically movably mounted to the base at the work station while a motor assembly (32) moves the lifting beam between a raised and a lowered position. Two die cartridges (70, 72), each having hemming tooling (76, 78) and a nest (80, 82) vertically movably mounted to the die cartridge, are horizontally movable relative to the base by a conveyor assembly (54). A conveyor motor

(90) selectively moves the die cartridges between a position laterally spaced from the work station and the work station. With the die cartridge positioned at the work station, a first clamp releasably (106) secures the nest to the lifting beam while a second clamp assembly (110) releasably secures the die cartridge to the base. With the nest secured to the lifting beam and the die cartridge secured to the base, hemming operations are performed at the work station in the conventional fashion.

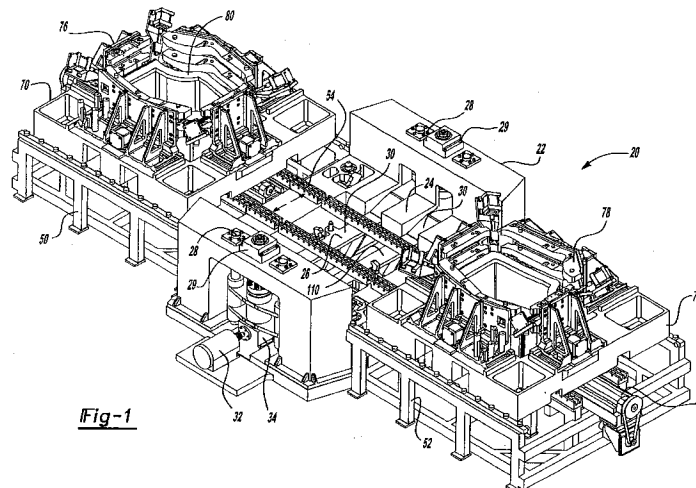


Fig-1

EP 1 258 301 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 25 3408

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
A	US 5 454 261 A (CAMPION JON R) 3 October 1995 (1995-10-03) * the whole document * ---	1,18	B21D39/02
A	US 6 182 492 B1 (BAULIER DOMINIQUE R M ET AL) 6 February 2001 (2001-02-06) * the whole document * -----	1,18	
			TECHNICAL FIELDS SEARCHED (Int.CI.7)
			B21D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 August 2003	Examiner Peeters, L
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	

EPO FORM 1503 03 B2 (PC/AC01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 25 3408

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-08-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5454261	A	03-10-1995	NONE	
US 6182492	B1	06-02-2001	CA 2323392 A1	01-05-2001

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82