

12

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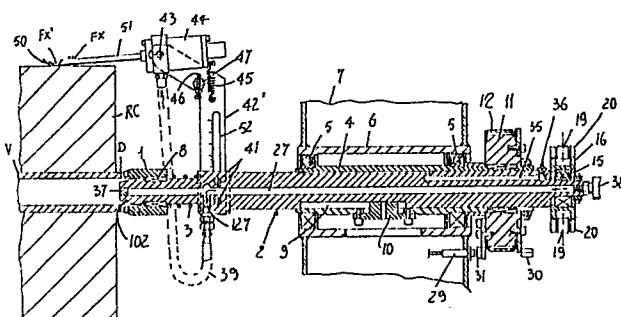
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Apparatus and method for the automatic discharge and restart of a cross-winding machine.

The apparatus comprises a spindle (V) on which the bobbin (RC) is formed, and which is axially shiftable from a retracted discharge position to an expanded working position, so as to cooperate with a fixed extractor (E) whereby when the spindle carrying the formed bobbin is retracted, the bobbin abuts against the extractor and is discharged. The spindle is provided on its free end with a frontally toothed portion (D). The spindle can be moved from a bobbin forming station (K) to a tie-in and discharge station (K'), while the yarn (F) is maintained under tension. On the side surface of the formed bobbin at the tie-in and discharge station, at one end of the bobbin, there is positioned a needle (50) having a hook (150). A winding rotation is imparted to said bobbin and to said needle so that the body of the needle will be enfolded by a suitable number of turns (FX) of yarn. The yarn is then displaced to form one turn (FX') engaging the hook of the needle, which is then stopped together with the bobbin. The needle is retracted so that it will cause the tail end of the yarn to be bent into a U-shape and to be passed beneath the turns. Means (54) are provided for cutting the yarn and for retaining the leading end of said yarn. At this point, the bobbin is discharged by retracting the spindle and subsequently the spindle is moved again to the bobbin forming station where it is extended to its working position so that its toothed end will

engage the leading end of the yarn retained by the cutting and retaining means and a new cycle of the winding machine can be resumed upon re-starting the rotary motion of the spindle.





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EUROPEAN SEARCH REPORT

0200121

Application number

EP 86 10 5410

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	FR-A-2 283 848 (HACOBA-TEXTILMASCHINEN) * Whole document *	9	B 65 H 65/00 B 65 H 67/04
Y		1-4, 6	
A		5, 7, 8	
Y	DE-A-2 322 640 (JAMES MACKIE & SONS) * Figures; claims *	1-4, 6	
Y	US-A-2 985 401 (M.B. GAZET) * Column 1, lines 35-37; figures *	1-4, 6	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 65 H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10-07-1987	Examiner RAYBOULD B.D.J.
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			