



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
06.09.2000 Bulletin 2000/36

(51) Int. Cl.⁷: **D01H 1/244**

(43) Date of publication A2:
24.05.2000 Bulletin 2000/21

(21) Application number: **99116740.4**

(22) Date of filing: **27.08.1999**

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

(30) Priority: **20.11.1998 JP 33063798**

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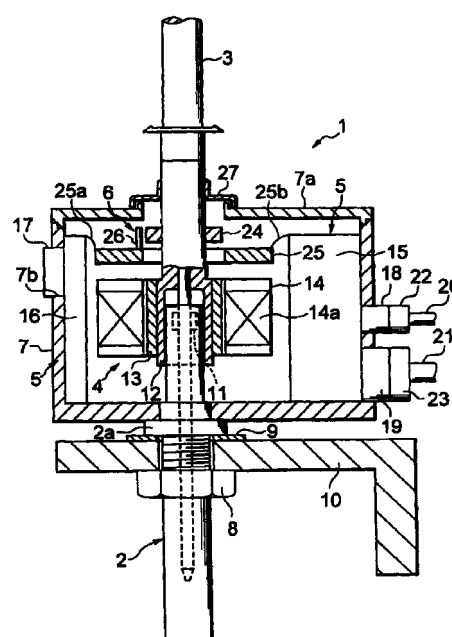
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(54) **Unitary spindle driving apparatus for spinning machine**

(57) A unitary spindle driving apparatus for a spinning machine of a structure which facilitates mounting of the unitary spindle driving apparatus for a spinning machine on a spinning machine frame as in the case of a conventional spindle apparatus while suppressing problems such as breakage of wire interconnecting an electric drive motor and a control unit. The unitary spindle driving apparatus 1 includes a bolster (2), a spindle (3) supported rotatably on the bolster (2), an electric motor (4) for driving the spindle (3), a control unit (5) for controlling the driving motor (4) and a rotation speed monitoring unit (6) for monitoring the rotation of the spindle (3). The motor (4), the control unit (5) and the rotation speed monitoring unit (6) are disposed within a single housing (7). A rotor (13) of the motor (4) is secured to the spindle (3) so as to rotate together therewith. A stator (14) of the motor (4) is fixedly mounted on the housing (7) at a position opposite to the rotor (13). Disposed at a rear side within the housing (7) is a driver circuit substrate (15) on which a driving circuit module is packaged, while disposed within the housing (7) at a front side thereof is a CPU substrate (16) on which a CPU module is packaged. The control unit (5) is constituted by the driver circuit substrate (15) and the CPU substrate (16).

FIG. 1





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EUROPEAN SEARCH REPORT

Application Number
EP 99 11 6740

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.7)
X	US 5 161 361 A (TALLEY PERRY E ET AL) 10 November 1992 (1992-11-10) * column 3, line 66 - column 4, line 6 * * column 4, line 51 - column 5, line 7 * * column 5, line 45 - column 6, line 18; figures 1-10 *	1-7	D01H1/244
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) D01H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17 July 2000	Examiner Henningsen, 0
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 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 99 11 6740

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17-07-2000

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EPO FORM P0459

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