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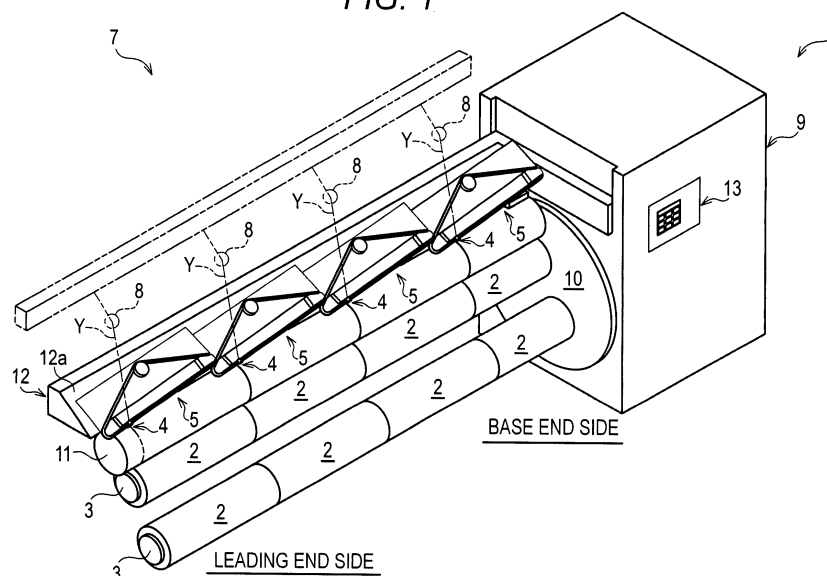
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(54) **Yarn winding apparatus and spinning machine**

(57) The present invention provides a yarn winding apparatus which, even when the relative positional relationship between each take-up tube and the corresponding traverse device is deteriorated, enables a package to be formed at the desired position with respect to the corresponding take-up tube. A yarn winding apparatus 1 includes a bobbin holder 3 on which a plurality of take-

up tubes 2 are installed and supported on the same shaft, and a plurality of traverse devices 5 each including a yarn guide 4 and configured to reciprocate the yarn guide 4 to traverse a yarn Y with respect to a corresponding take-up tube 2. Each of the traverse devices 5 allows a reciprocating range of reciprocation of the yarn guide 4 to be varied and is located in association with the corresponding take-up tube 2.

**FIG. 1**





## EUROPEAN SEARCH REPORT

Application Number  
EP 09 01 5548

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 September 2013	Examiner Guisan, Thierry
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			

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EPO FORM 1503 03.82 (F04C01)



## EUROPEAN SEARCH REPORT

Application Number  
EP 09 01 5548

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<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)



Application Number

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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number

EP 09 01 5548

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

**1. claims: 1-8**

A yarn winding apparatus including a bobbin holder with a plurality of take-up tubes and a plurality of traverse devices each including an endless belt supporting a yarn guide allowing a reciprocating range of reciprocation of the yarn to be varied.

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**2. claims: 9-11**

A traverse device in a winding apparatus device including a yarn guide configured to be able to catch a yarn utilizing tension of the yarn and enabling the yarn guide to reciprocate, a traverse control section and a yarn tension varying means.

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

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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25-09-2013

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

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