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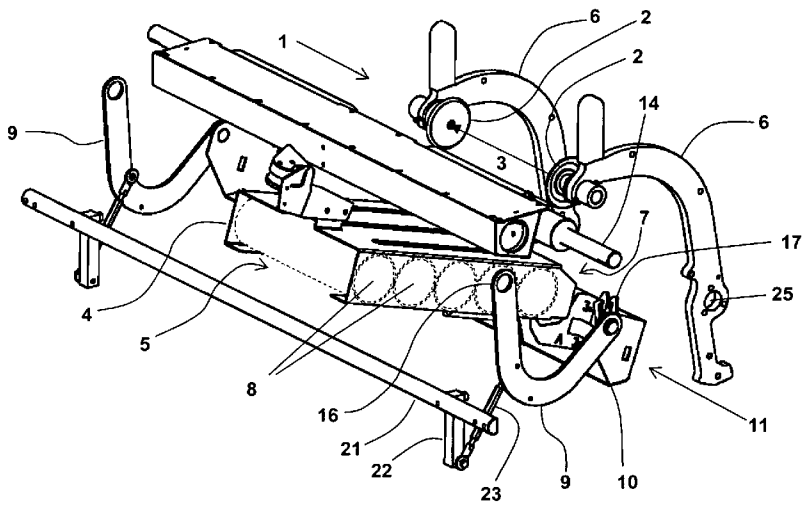
Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*

(88) Date of publication of the international search report:
12 April 2007

[Continued on next page]

(54) Title: WINDING STATION WITH MAGAZINE FOR EMPTY TUBES LOCATED UNDER THE WINDING MECHANISM



(57) Abstract: The present invention relates to a winding station for winding textile yarn onto empty tubes, comprising: - a winding mechanism (1) comprising two flanges (2) for gripping the ends of said tube (8), each flange mounted on a pivoted winding arm (6) , which arms position the empty tube in contact with a driving roller (14) , such that the longitudinal axis of the empty tube is above the longitudinal axis of the driving roller (14) , - a stationary, linear magazine (4) with a filling end (5) and a feeding end (7) , wherein - the filling end (5) and the feeding end of the magazine (4) are below the level of the flanges (2) , and - the filling end is above feeding end such that magazine (4) is inclined at angle, alpha, of less than or equal to 45 deg, - a lifting mechanism (11) comprising a pivoted arm terminating in a tube carrier (10) , which tube carrier (10) is configured to bring an empty tube from the feeding end of the magazine (4) to a space between the flanges (2) by an arc movement of the arm (9) . It further relates to and a winding assembly.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/004102

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65H67/04 B65H67/08 B65H54/71

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 801 030 A (KOBATAKE T,JA ET AL) 2 April 1974 (1974-04-02) figures 5-10	1-3,5,10
X	GB 2 112 031 A (* SANT' ANDREA NOVARA OFFICINE MECCANICHE E FONDERIE SPA) 13 July 1983 (1983-07-13) figures 2,3	1-5,11, 14
Y	US 3 532 278 A (WAYNE CLIFFORD SPARLING) 6 October 1970 (1970-10-06) figures	1-3,5,6
Y	JP 51 084943 A (ASAHI CHEMICAL IND CO LTD) 24 July 1976 (1976-07-24) cited in the application figures	1-3,5,6

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 August 2006	01 12 2006

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lemmen, René

Form PCT/ISA/210 (second sheet) (April 2005)

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 25 03 545 A1 (FRIED.KRUPP GMBH) 5 August 1976 (1976-08-05) cited in the application page 5, line 13 - line 20 page 6, line 1 - line 4 page 8, line 6 - line 9 page 8, line 18 - line 22; figures	8,9
A	US 5 937 629 A (SPINDLER ET AL) 17 August 1999 (1999-08-17) column 12, line 11 - line 14	10
A	EP 0 839 748 A (MURATA KIKAI KABUSHIKI KAISHA) 6 May 1998 (1998-05-06) figures	11,12,14
A	FR 875 677 A (HALSTENBACH & CO) 30 September 1942 (1942-09-30) cited in the application page 1, line 4 - line 20 page 2, line 12 - line 86; figures	7
A	GB 12182 A A.D. 1911 (EDMUND NORBURY BAINES; JAMES WILLIAM SCHMIDT) 8 February 1912 (1912-02-08) cited in the application the whole document	1,6
A	DE 29 15 533 A1 (ELITEX,KONCERN TEXTILNIHO STROJIRENSTVI) 25 October 1979 (1979-10-25) cited in the application page 6, paragraph 2; figure	1,2
A	JP 51 043448 A (TOYODA JIDO SHOTSUKI SEISAKUSHO KK) 14 April 1976 (1976-04-14) cited in the application figures	1-3
A	US 4 154 411 A (KAMP, HEINZ ET AL) 15 May 1979 (1979-05-15) cited in the application figures 2,3	1
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A	US 3 901 456 A (PRADIER ET AL) 26 August 1975 (1975-08-26) cited in the application figure 2	1

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/004102

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 44 42 304 A1 (BARMAG AG, 42897 REMSCHEID, DE) 14 June 1995 (1995-06-14) figures ---	11,14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2006/004102

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-14

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

A winding station for winding textile yarn onto empty tubes

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2. claim: 15

A device to capture the trailing end of a package on a winding machine

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2006/004102

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