

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference GILB-014-BE-WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IB2019/060390	International filing date (<i>day/month/year</i>) 3 December 2019 (03-12-2019)	(Earliest) Priority Date (<i>day/month/year</i>) 3 December 2018 (03-12-2018)
Applicant GILBOS NV		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

METHOD AND SENSOR FOR ROTATION MEASUREMENT OF AN ELONGATED OBJECT

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
 as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention
- b. none of the figures is to be published with the abstract

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)**METHOD AND SENSOR FOR ROTATION MEASUREMENT**

The present invention relates to a sensor for contactless measurement of local rotation on an elongated object, preferably a yarn, the sensor being composed of a first circular pattern (A) of electrodes around the longitudinal axis of the object and a second circular pattern (B) of grounding electrodes arranged around the longitudinal axis of the object, where the second pattern is interdigitated with the first pattern such that the grounding electrodes function as a screen between any two consecutive electrodes of the first pattern and further a method therefor, as well as improved methods and systems for twisting yarns based on the data obtained from this sensor and the aforementioned methods.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2019/060390

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01M5/00 D07B7/02 G01L1/14 G01L5/10 G01N33/36
ADD.
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)
G01M D07B G01L D01H G01N 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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 349 784 A (LOEPFE ERICH) 14 September 1982 (1982-09-14) column 1, line 46 - column 6, line 11; figures 3a,3b,7	1-22
A	----- EP 0 610 147 A1 (SUPERBA SA [FR]) 10 August 1994 (1994-08-10) page 5, lines 34-42; figures 13,14 page 8, lines 6-29 page 9, lines 37-39	1-22
X	----- US 4 399 648 A (KATO HISAAKI [JP]) 23 August 1983 (1983-08-23) column 2, lines 30-39; figures 1,3,9,13,14 column 3, lines 3-65 column 4, line 23 - column 6, line 38	17,18, 20,21 1-16,19, 22
A	----- -/--	

Further documents are listed in the continuation of Box C.

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 application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"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 19 March 2020	Date of mailing of the international search report 01/04/2020
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Haenssler, Thedda
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INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2019/060390

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 033 579 A2 (UNIV DRESDEN TECH [DE]) 6 September 2000 (2000-09-06) cited in the application figures 7,8,10	1-22
A	----- WO 2010/028642 A1 (NEUMANN ELEKTRONIK GMBH [DE]; SCHAEFER WOLFGANG [DE] ET AL.) 18 March 2010 (2010-03-18) page 3 - page 5; figures 1,2 -----	1-22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2019/060390

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 4349784	A	14-09-1982	CH 625484 A5	30-09-1981
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			JP S5459434 A	14-05-1979
			JP S5758450 B2	09-12-1982
			US 4256247 A	17-03-1981
			US 4349784 A	14-09-1982

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			DE 69400015 D1	19-10-1995
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			JP S5940926 B2	03-10-1984
			US 4399648 A	23-08-1983

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			EP 1033579 A2	06-09-2000

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			EP 2331906 A1	15-06-2011
			WO 2010028642 A1	18-03-2010
