



(11)

EP 4 253 658 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
06.12.2023 Bulletin 2023/49

(51) International Patent Classification (IPC):
E01C 23/01 ^(2006.01)

(43) Date of publication A2:
04.10.2023 Bulletin 2023/40

(52) Cooperative Patent Classification (CPC):
E01C 23/01

(21) Application number: **23159879.8**

(22) Date of filing: **03.03.2023**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(71) Applicant: **Finnish Construction Support Oy**
53100 Lappeenranta (FI)

(72) Inventors:
• **Niiranen, Jukka**
53900 Lappeenranta (FI)
• **Pellinen, Antti**
55300 Rauha (FI)

(30) Priority: **29.03.2022 FI 20225266**

(74) Representative: **Moosedog Oy**
Vähäheikkiläntie 56C
20810 Turku (FI)

(54) **SYSTEM AND METHOD FOR MONITORING CONDITION OF ROAD USING INDICATOR ELEMENT**

(57) Disclosed is an indicator element (100, 202, 204, 206, 208, 302, 400A, 400B, 500A, 500B) associated with a road (210, 304, 508, 602) for monitoring a condition of the road. Moreover, the indicator element comprises a measurable property (402, 404, 406) associated therewith, wherein a change in the measurable property over a period of time is indicative of the wear of the indicator element. Disclosed also is a system (600) for monitoring a condition of a road. Disclosed also is a method for monitoring a condition of a road.

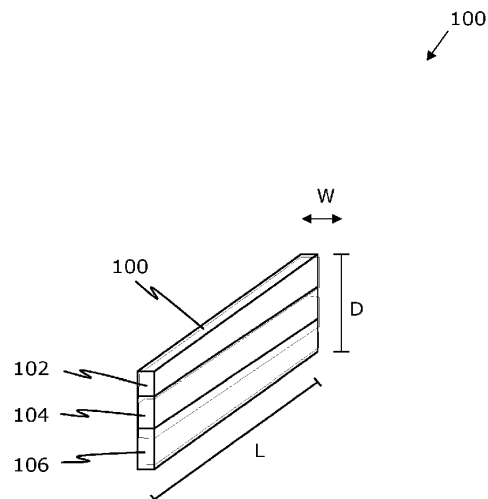


FIG. 1



EUROPEAN SEARCH REPORT

Application Number

EP 23 15 9879

5

10

15

20

25

30

35

40

45

50

55

2

EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 20 2010 015179 U1 (LEIMER HANS JOACHIM [DE]) 27 January 2011 (2011-01-27)	1-7	INV. E01C23/01
A	* the whole document *	8, 9	
A	RU 2 719 899 C1 (FEDERALNOE GUP [RU]) 23 April 2020 (2020-04-23)	1-7	
A	* the whole document *		
A	GB 2 510 833 A (WDM LTD [GB]) 20 August 2014 (2014-08-20)	8, 9	
A	* abstract; figures 1-9 *		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E01C E01F
Place of search		Date of completion of the search	Examiner
The Hague		20 July 2023	Flores Hokkanen, P
CATEGORY OF CITED DOCUMENTS		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	
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			



Application Number

EP 23 15 9879

5

10

15

20

25

30

35

40

45

50

55

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:

1–9

☐ 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 23 15 9879

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: 1-9

Indicator element associated with a road for monitoring its condition, the indicator comprising a measurable property being at least one of a colour, a colour gradient and a fluorescence along its depth

2. claims: 10-13

Method for monitoring a road condition by arranging indicator elements associated with the road and a measuring arrangement to measure a property of the indicator elements, processing measured data and generating a notification based on a change of the measurable property

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

EP 23 15 9879

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

20-07-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202010015179 U1	27-01-2011	NONE	
RU 2719899 C1	23-04-2020	NONE	
GB 2510833 A	20-08-2014	EP 2956889 A1	23-12-2015
		GB 2510833 A	20-08-2014
		GB 2511612 A	10-09-2014
		US 2015371094 A1	24-12-2015
		WO 2014125248 A1	21-08-2014