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**Datasheet for the decision
of 22 January 2020**

Case Number: T 1114/17 - 3.2.01

Application Number: 13888136.2

Publication Number: 2884225

IPC: B23Q16/10, G01B11/00,
G01B11/24, G01S17/02

Language of the proceedings: EN

Title of invention:

LASER SENSOR WITH A BUILT-IN ROTARY MECHANISM

Applicant:

Unimetrik, S.A.

Headword:

Relevant legal provisions:

EPC Art. 52(1), 56

Keyword:

Inventive step - non-obvious alternative - ex post facto analysis

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1114/17 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 22 January 2020

Appellant: Unimetrik, S.A.
(Applicant) C/ San Blas 11
Poligono Industrial de Gojain
01170 Legutiano (Álava) (ES)

Representative: Rebate Conde, Maria Fernanda
Eurosigno
C/ Txakursolo, 23
48992 Getxo (ES)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 3 January 2017
refusing European patent application No.
13888136.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman G. Pricolo
Members: V. Vinci
O. Loizou

Summary of Facts and Submissions

I. The appeal was filed by the appellant (applicant) against the decision of the examining division to refuse the patent application in suit.

II. In the decision under appeal the examining division concluded that the subject-matter of independent claim 1 of the sole request on file did not involve an inventive step pursuant to Articles 52(1) and 56 EPC in view of the teaching of documents: .

D1: US2012/105867 A1, representing the closest prior art, and

D2: GB 2 335 274 A.

III. With the statement of the grounds of appeal the appellant requested that the contested decision be set aside and that a patent be granted on the basis of the set of claims 1 to 6 underlying the decision.

IV. Following a telephone conversation with the rapporteur of the Board, the appellant filed the set of claims 1 to 6 with an amended claim 3 aiming to overcome a minor inconsistency found in it and requested that the decision be set aside and a patent be granted on the basis of this amended set of claims filed with letter dated 9 January 2010.

V. Claim 1 at stake reads as follows:

Laser sensor with integrated rotating mechanism which comprises: a camera (1); a laser (2); and a chassis (3) configured to rotate on its own axis (4); characterised in that it comprises an indexed rotating mechanism

which comprises, in turn: a first motorised set (14), which consists of a first rotating motor (5) positioned on an axis parallel to the rotating axis (4), and connected to said rotating axis (4) by a set of gears (11); and a second motorised set (6) which consists of a second locking motor (8) coupled onto the rotation axis (4) in a first support (9) of the laser sensor; and where the first support (9) comprises at the bottom locking rollers (10) and a spindle (13) coupled to the aforementioned first support (9) in such a way that locking occurs as a result of contact between balls housed in the chassis (3) and the rollers (10) adjacent to the lower part of the support (9).

Reasons for the Decision

1. The Board cannot follow the conclusion of the examining division that the subject-matter of claim 1 does not involve an inventive step in view of D1 in combination with D2 for the following reasons:

Interpretation of claim 1

2. In its feature analysis (see point 9.1 of the appealed decision) the examining division apparently identifies 2 parallel "rotating axes" in the indexed rotating mechanism of the laser sensor of D1, namely (see embodiment in figure 5) the axis of the rotating shaft (42a) driven by the step motor (142) and the central rotating axis (C1) of the chassis (2). These axes are

thus coincident and in the view of the examining division they correspond to the 2 parallel axes recited in claim 1, namely the rotating axis (4) of the chassis (3) and the axis of the rotating motor (5) of the first motorised set (14).

2.1 In the Board's judgment, the feature analysis of the examining division is based on a formalistic interpretation of the term "parallel" in the expression "...positioned on an axis parallel to the rotating axis (of the chassis) ..." according to which the terms "parallel" would also mean and include "coincident".

2.2 Although the interpretation of the examining division might be considered correct from a theoretical point of view, the Board points out that, in order to determine the scope of the protection effectively afforded, a claim should be read as a whole and interpreted by the person skilled in the art in the light of the particular technical contest therein defined. In this respect it is observed that in claim 1 two parallel axes "connected by a set of gears" are defined. This is a first indication for the skilled reader that the axes in question must be parallel but not coincident because otherwise no gear connection between the axes would be required. The Board is aware that it is theoretically imaginable to connect 2 coincident rotation axes for example by an interposed epicycloidal gear box. However the use of such an epicycloidal gear box would make no technical sense in technical and functional contest in which the claim has to be read and understood. Furthermore, as the claim clearly states that 2 rotating motors are provided, namely the first rotating motor (5) positioned on the axis parallel to the rotating axis (4) on which the second motor (8) is coupled, the person skilled in the

art would clearly and unambiguously understand that the parallel axes of claim 1 are not coincident because, in view of the functionality to be achieved, the provision of 2 motors driving 2 axes parallel and coincident would technically make no sense.

- 2.3 For the reasons presented above the Board considers it appropriate to adopt in the present case a "technical" interpretation of the term "parallel axes" and to exclude a "theoretical" interpretation of claim 1 according to which the axes of the indexed rotating mechanism may also be coincident.

Assessment of Novelty and Inventive Step

3. Novelty has not been questioned by the examining division in the decision under appeal.

- 3.1 As a result of the interpretation of claim 1 presented above the subject-matter of claim 1 differs from the laser sensor of D1 not only due to the fact that a different kind of indexing/locking mechanism is provided, as correctly stated by the examining division, but also because of the provision of 2 parallel and distinct rotating axes connected by a set of gears, each axis being provided with a rotating motor. In particular the (first) rotating motor (142) of D1 (which functionally corresponds to the motor (5) of the invention) is not positioned on an axis parallel to the rotating axis (C1) of the chassis, as opposed to the definition in claim 1.

- 3.2 The Board fully concurs with the technical problem as proposed by the examining division, namely to provide a reliable alternative to the indexed rotating mechanism

integrated in the laser sensor of D1.

- 3.3 The Board further supports the view of the examining division that the person skilled in the art, looking for a more reliable and precise indexed rotating mechanism for the laser sensor of D1, would consider, among others possibilities, also the solution disclosed in D2.
- 3.4 However the reasoning of the examining division leading to the conclusion that it would be obvious for the person skilled in the art to solve the technical problem underlying the invention by combining D1 with D2 thereby arriving without inventive step to the subject-matter of claim 1 is not convincing for the following reasons:
- 3.5 The person skilled in the art would promptly realize that the constructional solution of D1 implying only 1 rotating motor (142) disposed on the same rotating axis (C1) of the chassis (20) is conceptually very different from the constructional solution of D2 (see figures 1 and 2) implying 2 rotating motors mounted on 2 parallel and distinct rotating axes, namely the motor (RG) mounted on a first axis in turn connected by a set of gears to the second rotating axis on which the second motor (M) is mounted. These major structural differences would require major constructional modifications to the design of the laser sensor of D1 in order to integrate the indexed rotating mechanism of D2. Amongst other things it would be necessary to completely remove the "rotation restriction section (60)" and to move the rotating axis of the driving section (142) from the present position, coaxial with the axis of rotation (C1) of the chassis, to a position offset from said rotating axis in order to match the

arrangement of the indexed rotating mechanism of D2. These modification are rendered even more complex by the fact that the mechanism of D2 comprises a further rotating intermediate member (22) in addition to the main rotating member (10) corresponding to the chassis of D1.

- 3.6 The Board notes that in the decision under appeal the examining division fails to convincingly prove that the person skilled in the art aiming to provide an alternative to the indexed rotating mechanism of the laser sensor of D1 would be motivated, despite the major structural modifications required, to combine the teachings of D1 and D2. The Board considers that no obvious hint or motivation can be found in favour of this combination and that the person skilled in the art would be rather discouraged by the entity of the structural modifications required.
- 3.7 Finally the reasoning of the examining division appears to be based on a hindsight knowledge of the invention leading to the wrong conclusion that it would be obvious to modify the laser sensor of D1 by carrying out a series of apparently easy and obvious modifications which would result in the subject-matter of claim 1. According to established case law of the Boards of Appeal such a "post-facto" approach is not suitable for correctly assessing inventive step.
4. The Examining Division has not raised objections on patentability based on the other documents cited in the search report and the Board does not see the relevance of these documents to the issue of inventive step. Therefore, the subject-matter of claim 1 does involve an inventive step over the prior art (Art. 52(1) and 56

EPC).

5. From the above it follows that an European patent can be granted on the basis of the independent claim 1 with dependent claims 2 to 6 as filed on 09.01.2020.

5.1 However the Board notes that document D1, which represents the closest prior art for the subject-matter of independent claim 1, is not cited in the description (Rule 42(1) b) EPC) and that the claim is not correctly drafted in the two-part form according to Rule 43(1) EPC with respect to this document (see point 3.1 above). Furthermore the description is not adapted to the invention as defined in the claims and contains statements which lead to doubt concerning the scope of the protection afforded by the claims (see for example page 3, lines 26-32). Under the present circumstances the Board considers it appropriate that these minor amendments be carried out in the written procedure in front of the the examining division.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution.

The Registrar:

The Chairman:



D. Magliano

G. Pricolo

Decision electronically authenticated