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D E C I S I O N
of 11 December 2002

Case Number: T 1279/01 - 3.4.2

Application Number: 95305035.8

Publication Number: 0695926

IPC: G01B 7/012, G01B 7/00

Language of the proceedings: EN

Title of invention:
Trigger probe circuit

Applicant:
Renishaw plc

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 84

Keyword:
"Claims - functional features"
"Claims - essential features"

Decisions cited:
T 0068/85, T 0630/93

Catchword:
-



Case Number: T 1279/01 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 11 December 2002

Appellant: Renishaw plc
New Mills
Wotton-Under-Edge
Gloucestershire GL12 8JR (GB)

Representative: Jackson, John Timothy
Renishaw plc
Patent Department
New Mills
Wotton-under-Edge
Gloucestershire GL12 8JR (GB)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 3 July 2001
refusing European patent application
No. 95 305 035.8 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: A. G. M. Maaswinkel
B. J. Schachenmann

Summary of Facts and Submissions

I. The appellant lodged an appeal, received on 29 August 2001, against the decision of the examining division, dispatched on 3 July 2001, refusing the European patent application 95 305 035.8. The fee for the appeal was paid on 29 August 2001 and the statement setting out the grounds of appeal was received on 12 November 2001.

The examining division objected that the subject-matter of claim 1 of the main request was not clear in the sense of Article 84 EPC. Previously the examining division had issued a Communication under Rule 51(4) EPC on the basis of the set of claims according to an auxiliary request of the applicant. The applicant had not approved the text set out in the Rule 51(4) Communication and had instead requested a formal decision against its main request.

II. The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims: 1 to 7 (main request) as received with letter of 26 November 1999;
8 as originally filed;

Description: pages 1, 3 to 7 as originally filed;
page 2 (main request) as received with letter of 26 November 1999;
page 2a as received on 26 March 1999 with letter of 22 March 1999;

Drawings: sheet 1/1 as originally filed.

In case this request was not allowed the appellant requested oral proceedings. Furthermore he maintained as an auxiliary request the set of claims on the basis of which the examining division had issued the Communication under Rule 51(4) EPC.

III. Claim 1 according to the main request reads as follows:

"A trigger probe circuit (12) for a trigger probe (10) for position determining apparatus, comprising two input terminals (14, 0v) for connection to an output of the probe; and a capacitor (C1) connected across the input terminals, whereby the capacitor filters out momentary, spurious changes in the probe output signal; characterised in that a discharge circuit (TH1, TR1) is provided in parallel with the capacitor (C1), the arrangement being such that the capacitor discharges substantially through said discharge circuit rather than into the probe output when the probe output presents a short circuit."

Claims 2 to 8 are dependent on claim 1.

IV. The appellant's arguments may be summarised as follows:

1. The patent application relates to a trigger probe circuit for a position determining apparatus. The circuit uses a comparator to detect the opening of the contacts on the probe when the workpiece is contacted. Since spurious signals may be generated at the probe contacts, e.g. by machine vibrations, in a prior art document by the same applicant it was disclosed to connect a capacitor across the input terminals of the

probe to filter out such momentary spurious signals. By further research the applicant has found that in a circuit consisting only of a capacitor across the probe contacts a problem may arise because when the contacts of the probe close again the capacitor discharges over the probe contacts which is detrimental for them. This problem is not apparent from the prior art. In the patent application this problem is solved by providing a discharge circuit parallel to the capacitor in order that the capacitor discharges through this circuit rather than through the probe contacts when they close. The solution to the technical problem resides therefore in the discharge circuit as such.

In the decision under appeal the examining division had objected against claim 1 on the grounds that the claim wording was a definition of subject matter in terms of the result to be achieved; and that the application as filed disclosed only a single solution enabling the capacitor to discharge through the discharge circuit rather than through the probe output when it presents a short circuit, namely by means of the resistor R_2 placed in series with the capacitor. Hence the definition of this resistor was necessary in the independent claim in order to solve the problem of the invention.

In the present case, the result to be achieved is the prevention of damage of the probe contacts. Claim 1 does not define this result to be achieved, it claims the technical features which achieve this result. Furthermore, paragraph C-III, 4.7 of the Guidelines for Examination states that it is permissible to define the invention in such terms if it otherwise

cannot be defined more precisely without unduly restricting the scope of the claims and if the result is one which can be directly and positively verified by tests or procedure adequately specified in the description or known to the person skilled in the art and which do not require undue experimentation. Reference is also made to the decision T 68/85.

With respect to the resistor R_2 , this is not an essential part of the discharge circuit: in the application as filed there is no disclosure that this resistor R_2 would be essential. The resistor is included in the preferred embodiments in Figures 2 and 3. Its function is described on page 4, lines 11 to 14; and page 5, lines 12 to 16 as a switching means for the discharge circuit. However, the switching function may equally be fulfilled by other components monitoring the discharge current and triggering the discharge circuit, such as a diode or a step transformer. Therefore in the present case it is not the resistor but the discharge circuit which is essential within the meaning of "essential" as discussed in the decision T 630/93, point 3.2 of the Reasons, wherein it was stated that *"the main purpose of a claim is to set out the scope of protection sought for an invention... Therefore, the function of the essential features, although they normally are expressed in technical terms, is often to define the borders of an invention rather than to define the invention within the borders.... Essential features often can be of a very general character, in extreme cases they could indicate only principles of a new idea"*.

Finally Section CIII 6.2 of the Guidelines states that

a fair statement of claim is not so narrow as to deprive the applicant of a just reward for the disclosure of his invention; and that the applicant should be allowed to cover all obvious modifications, equivalents to and uses of that which he has described. Therefore a limitation of the claim to one component in a preferred embodiment would be unjustified, the more because the skilled person is immediately aware of equivalent components.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 Article 123(2) EPC

Claim 1 is a combination of claims 1 and 2 as originally filed. The further claims equally find their support in the claims as originally filed. The description has been adapted to acknowledge the closest prior art (document D1, EP-A-0 420 305). Therefore the documents forming the main request are not objectionable under Article 123 EPC.

2.2 Article 84 EPC

2.2.1 The examining division had objected that the mere definition of the discharge circuit in claim 1 and its characterization by the wording "*the arrangement being such that the capacitor discharges substantially through said discharge circuit rather than into the probe output when the probe output presents a short*

circuit" was merely a definition of the subject-matter in terms of the result to be achieved. With respect to this issue the appellant has referred to the passage in the Guidelines CIII 4.7 and to the Decision T 68/85 which is also cited in this passage.

2.2.2 According to the above passage in the Guidelines, "*...claims, which attempt to define the invention by a result to be achieved should not be allowed, in particular if they only amount to claiming the technical problem*". In the present case, the technical problem over the appellant's own prior art document D1 is described on page 3, lines 17 to 22 of the application as filed, namely that the energy stored in the capacitor is dissipated through the probe contacts if these reclose. Therefore a claim merely defining this problem could indeed be objectionable.

2.2.3 Article 84 EPC taken together with Rule 29(1) EPC requires *inter alia* that the claims shall define the matter for which protection is sought in terms of the technical features of the invention. From the wording of Rule 29(3) EPC it may be deduced that this requirement can also be expressed as the "essential features of the invention". However, from Rule 29(3) EPC it may be implicitly understood that the "essential features of the invention" are not necessarily identical to features concerning particular embodiments of the invention.

2.2.4 Furthermore, as explained in point 8.4.1 of the Reasons in Decision T 68/85, the concept of "technical feature" within the meaning of Rule 29(1) and (3) EPC includes those features "*...that can be read by a skilled person as an instruction to the technical*

procedure to be followed to achieve a given result". Depending on the nature of the invention such features may be *explicit* features or *functional* features. As discussed in points 8.4.2 and 8.4.3 of the above Decision, a definition of a feature in functional terms should not be allowed if it would jeopardise the clarity of the claims, on the other hand it should not be required to unjustifiably limit the scope of the invention.

2.2.5 The board follows the argumentation of the appellant that claim 1 of the main request defines the essential features of the invention, namely the discharge circuit in parallel to the capacitor (*explicit features*) together with the further instruction to the skilled person how these should be arranged (*in terms of functional features*).

2.2.6 Furthermore, it finds the arguments of the appellant in point 1.7 of the grounds of appeal credible, that the presence of the particular component/resistor R_2 in the circuit is not mandatory because the switching function may equally be fulfilled by other components monitoring the discharge current and triggering the discharge circuit, such as a diode or a step transformer.

2.2.7 Therefore claim 1 of the main request meets the requirements of Article 84 EPC.

2.3 Patentability

2.3.1 By expressing its intention to grant a European patent with the Communication under Rule 51(4) EPC of the auxiliary request then on file, the examining division

indicated the patentability of the set of claims of the auxiliary request. In the Annex to this Communication it stated that the only legal ground why it could not accept the set of claims of the main request was the objection under Article 84 EPC. The division repeated this view in the decision under appeal.

- 2.3.2 From the above it must be concluded that the patentability under Article 52(1) EPC of the claimed subject matter was not in doubt. After considering the prior art on file the board sees no reason to come to a different conclusion.
3. For the above reasons, the Board finds that the appellant's main request meets the requirements of the EPC and that a patent can be granted on the basis thereof.
4. Since the main request of the appellant is allowable, there is no need to address the auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following documents:

Claims: 1 to 7 (main request) as received with letter of 26 November 1999;

8 as originally filed;

Description: pages 1, 3 to 7 as originally filed;
page 2 (main request) as received with
letter of 26 November 1999;
page 2a as received on 26 March 1999
with letter of 22 March 1999;

Drawings: sheet 1/1 as originally filed.

The Registrar:

The Chairman:

P. Martorana

E. Turrini