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# D E C I S I O N
# of 13 October 1998

**Case Number:** T 0434/97 - 3.4.2

**Application Number:** 93200498.9

**Publication Number:** 0551165

**IPC:** G01B 5/00

**Language of the proceedings:** EN

**Title of invention:**
Touch probe

**Patentee:**
Renishaw plc

**Opponent:**
Marposs Societa Per Azioni

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 100(c), 76(1)

**Keyword:**
"Amendments - added subject-matter (main request, first and second auxiliary request - yes)"

**Decisions cited:**
T 0037/82, T 0292/90, T 0710/93

**Catchword:**
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**Case Number:** T 0434/97 - 3.4.2

# D E C I S I O N
## of the Technical Board of Appeal 3.4.2
## of 13 October 1998

**Appellant:** (Proprietor of the patent)
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**Respondent:** (Opponent)
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted 20 February 1997 revoking European patent No. 0 551 165 pursuant to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** E. Turrini
**Members:** R. Zottmann
V. Di Cerbo

## Summary of Facts and Submissions

I. The appellant (patentee) lodged an appeal against the decision of the Opposition Division revoking the patent No. 0 551 165 granted on the basis of the divisional application No. 93 200 498.9.

The opposition was based on the grounds of opposition laid down in paragraphs (a) and (c) of Article 100 EPC.

The Division held that the claims did not fulfil the requirements of Article 100(c) EPC.

II. The following documents were among others cited during the appeal procedure:

A7: "Concepts about constraint and freedom", a statement of the respondent (opponent) filed with his letter dated 29 April 1996;

D3: DE-A-3 715 698;

DI: US-A-4 153 998; and

DII: US-A-4 451 987.

III. The oral proceedings of the present case and case T 1221/97 were held on the same day, since the patents of both cases had been granted on the basis of divisional applications of the same parent application No. 91 301 477.5 (said application as originally filed is hereinafter called *parent application*), now patent EP-B-0 445 945.

IV. At the end of oral proceedings, which were held at the same day as those of case T 1221/97, the decision of the Boards has been announced.

The appellant requested that the decision under appeal be set aside, that the patent be maintained in amended form on the basis of a main request or two auxiliary requests and that the appeal fee be reimbursed.

The respondent requested:

(a) that the appeal be dismissed;

(b) apportionment of the costs of the oral proceedings.

V. Claim 1 of the main request reads as follows:

"1. A touch probe for position determining apparatus, comprising:

a fixed member (10) having an axis;

a movable member (12) for carrying a workpiece-contacting stylus (14);

bias means (24) for biasing the movable member into a rest position relative to the fixed member, the movable member being movable out of the rest position against the action of the bias means when a force is applied to the stylus;

a detector (42,44,46) for providing a signal when said stylus contacts a workpiece; and

a constraining device between the fixed and movable members for constraining movement of the movable member when it is biased into the rest position; the constraining device including:

an axial constraint including a pair of mutually engageable surfaces (20,22,114), one on the fixed member and one on the movable member, for constraining the movable member axially relative to the fixed member when it is biased into the rest position;

a planar spring (30,54) for preventing rotation of the movable member relative to the fixed member; characterised in that said constraining device further includes:

an intermediate member (32,54) which is movable relative to the fixed and movable members;

support means (32,36,56,58,106,110) additional to the axial constraint, the support means being provided between the intermediate member and the fixed member, and comprising elements on one of said fixed and intermediate members which are engageable with corresponding surfaces on the other one of said fixed and intermediate members, thereby to constrain movement of the intermediate member relative to the fixed member when said elements and surfaces are engaged, the fixed and intermediate members being relatively rotatable when said elements and surfaces are disengaged;

and in that said planar spring (30,54) is provided between the intermediate member and the movable member, for preventing relative rotation therebetween, but permitting axial and tilting movements therebetween while said elements and surfaces of the support means remain engaged."

Claim 1 of the first auxiliary request reads:

"1. A touch probe for position determining apparatus, comprising:

a fixed member (10) having an axis;

a movable member (12) for carrying a workpiece-contacting stylus (14);

bias means (24) for biasing the movable member into a rest position relative to the fixed member, the movable member being movable out of the rest position against the action of the bias means when a force is applied to the stylus;

a detector (42,44,46) for providing a signal when said stylus contacts a workpiece; and

a constraining device between the fixed and movable members for constraining movement of the movable member when it is biased into the rest position; the constraining device including:

an axial constraint including a pair of mutually engageable surfaces (20,22,114), one on the fixed member and one on the movable member, for constraining the movable member axially relative to the fixed member when it is biased into the rest position;

a planar spring (30,54) for preventing rotation of the movable member;

characterised in that said constraining device further includes:

an intermediate member (32,54) which is movable relative to the fixed and movable members;

support means (32,36,56,58,106,110) additional to the axial constraint, the support means being provided between the intermediate member and the fixed member, and comprising elements on one of said fixed and intermediate members which are engageable with corresponding surfaces on the other one of said fixed and intermediate members, thereby to constrain movement, including rotation, of the intermediate member relative to the fixed member when said elements and surfaces are engaged, the fixed and intermediate members being relatively rotatable when said elements and surfaces are disengaged;

and in that said planar spring (30,54) is provided between the intermediate member and the movable member, for preventing relative rotation therebetween, the planar spring thereby acting with the support means to prevent relative rotation of the movable member relative to the fixed member while said elements and surfaces of the support means remain engaged, but permitting axial and tilting movements between the intermediate member and the movable member while said elements and surfaces of the support means remain engaged."

Claim 1 of the second auxiliary request reads:

"1. A touch probe for position determining apparatus, comprising:

a fixed member (10) having an axis;

a movable member (12) for carrying a workpiece-contacting stylus (14);

bias means (24) for biasing the movable member into a rest position relative to the fixed member, the movable member being movable out of the rest position against the action of the bias means when a force is applied to the stylus;

a detector (42,44,46) for providing a signal when said stylus contacts a workpiece; and

a constraining device between the fixed and movable members for constraining movement of the movable member when it is biased into the rest position; the constraining device including:

an axial constraint including a pair of mutually engageable surfaces (20,22,114), one on the fixed member and one on the movable member, for constraining the movable member axially relative to the fixed member when it is biased into the rest position;

a prestressed planar spring (30,54) for preventing rotation of the movable member;

characterised in that said constraining device further includes:

an intermediate member (32,54) which is movable relative to the fixed and movable members;

support means (32,36,56,58,106,110) additional to the axial constraint, the support means being provided between the intermediate member and the fixed member, and comprising elements on one of said fixed and intermediate members which are engageable with corresponding surfaces on the other one of said fixed and intermediate members, thereby to constrain movement, including rotation, of the intermediate member relative to the fixed member when said elements

and surfaces are engaged, the fixed and intermediate members being relatively rotatable when said elements and surfaces are disengaged;

the elements and surfaces on the fixed and intermediate members being biased into engagement by the prestressed planar spring;

and in that said planar spring (30,54) is provided between the intermediate member and the movable member, for preventing relative rotation therebetween, the planar spring thereby acting with the support means to prevent relative rotation of the movable member relative to the fixed member while said elements and surfaces of the support means remain engaged, but permitting axial and tilting movements between the intermediate member and the movable member while said elements and surfaces of the support means remain engaged;

the mutually engageable elements of the axial constraint being biased into engagement with a lower force than the elements and surfaces on the fixed and intermediate members, whereby upon displacement of the movable member said mutually engageable elements disengage, against said lower bias force, and then subsequently the elements and surfaces on the fixed and intermediate members disengage."

Claims 2 to 8 of all requests are dependent on their respective claim 1.

VI. The arguments of the appellant with respect to the points on which the decision is based are summarized as follows:

The mere use of a planar spring as disclosed in the parent application inevitably leads to the prevention of the rotation of the movable member when the latter is biased into its rest position. Rotation-prevention is a natural property of a planar spring and is used

widely, for example in D3. As stated in decision T 37/82, it is sufficient for the disclosure of a technical feature that it can be deduced from the original application on the basis of normal expert considerations.

Furthermore, the probe of DII which is cited in the *parent application* comprises a planar spring; said probe, when manufactured in accordance with this document, shows rotation-prevention. A7, filed as part of the opponents' arguments, demonstrates (on page 3, at B) that a planar spring provides constraint $\bar{\gamma}$ against rotation about an axis (z-axis) perpendicular to the plane of the spring. The sketch of the planar spring with four small spokes which the respondent produced during the oral proceedings has been specially designed so that it does not prevent rotation completely, whereas the planar springs shown in the *parent application* do not have this special design.

Passages of the decision and of examination minutes of a US District Court in an infringement action against a US patent based on the *parent application* indicate that the planar spring of the embodiment as shown in Figures 1 and 2 of the patent-in-suit effects constraint $\bar{\gamma}$ .

The dowel is irrelevant in this respect since it has no effect during normal operation, that is when the movable member is biased into the rest position, with the elements and surfaces of the support means engaged.

The decision under appeal sets out only the facts on which the decision is based and the conclusion reached, but there is no logical reasoning how the Opposition Division arrived at its conclusions. This lack of

reasoning amounts to a substantial procedural violation, justifying refund of the appeal fee even if the Board would be able to find reasons to uphold the attacked decision.

VII. The arguments of the respondent with respect to the points on which the decision is based are summarized as follows:

Constraint $\overline{\gamma}$ is effected by the dowel and mentioned only in context with the dowel. The same applies to DI (column 4 from line 25 on) which is mentioned in the *parent application*. The planar spring is provided for lateral constraint only. Constraint $\overline{\gamma}$ of the planar spring cannot be unambiguously and fully derived from the *parent application*. The respondent never admitted that prevention of rotation is an inherent, natural property of a planar spring or disclosed indirectly in the drawings of the attacked patent. D3 is not within the content of the *parent application*. Even if the planar spring of DII were adapted to provide rotational constraint this would be irrelevant, since DII does not suggest that this function forms part of the invention. A7 was cited during the opposition proceedings for argumentation independently from the ground of opposition under Article 100(c) EPC.

The statements during infringement litigation in the United States are irrelevant since there the validity of the patent was not attacked and claims of the US patents of the appellant alleged to be infringed by the respondent recite a planar spring between the intermediate member and the movable member, for preventing relative rotation therebetween.

The claims of the second auxiliary request cannot be admitted since they are submitted only during the oral proceedings of the appeal proceedings and thus too late.

## Reasons for the Decision

1. The appeal is admissible.

2. *Admittance of late-filed claims*

In substance, the amendments of the claims of the second auxiliary request take account of one of the two main objections of the respondent and the Opposition Division on which the revocation of the patent was based, namely that the claims did not contain the essential feature (b) of the *parent application* as originally filed (two bias means and a difference in bias force of the said bias means).

Therefore, though an earlier presentation of said claims would have been desirable and possible, the respondent could not be surprised by the content of the late-filed claims.

3. *Grounds of opposition laid down in Article 100(c) EPC; requirements of Article 76(1) EPC*

3.1 A divisional application has to meet both the requirements of Article 76(1) and those of Article 123(2) EPC: it has neither to extend beyond the *parent application* nor to be amended after filing in such a way that it contains subject-matter which extends beyond the content of the divisional application as filed. These requirements are grounds of opposition as laid down in Article 100(c) EPC.

3.2 Claim 1 of each request includes a planar spring (30, 54) for preventing rotation of the movable member (12) relative to the fixed member (10) while the elements and surfaces of the support means (34, 36, 56, 58, 106, 110) remain engaged (hereinafter called feature (a)). According to the only (first) embodiment of the three embodiments of the *parent application* falling within the scope of claim 1 (Figures 1, 2 and 4; sub-alternatives shown in Figures 8 to 10), said support means are ball/cylinder arrangements or similar arrangements providing axial constraint in the z-axis, constraint $\overline{\gamma}$ and lateral constraint perpendicular to the z-axis (that is in x- and y-direction) when said arrangements are engaged by the biasing force of bias means (spring 24).

Constraint $\overline{\gamma}$ is disclosed only in connection with the dowel/hole (38/40) arrangement (page 6 last paragraph of the *parent application*); the only constraining function of the planar spring, repeatedly and consistently disclosed and claimed in the *parent application* is that of providing lateral constraint (see page 6 first paragraph, page 7 first and second paragraphs, the paragraph bridging pages 10 and 11, page 13 line 19 to page 14 line 2, page 15 lines 10 to 12, the paragraph bridging pages 16 and 17 and claims 3, 4, 11 and 12). None of the two documents cited in the *parent application*, namely DI and DII, discloses feature (a). D3 is not mentioned in the *parent application*. Thus, feature (a) is not explicitly disclosed.

3.3 When introducing features not explicitly disclosed, it is necessary that such features can be unmistakably and fully derived from the original text which is in this case the *parent application*. This corresponds to the opinion expressed in decision T 37/82.

The drawings are schematic illustrations of embodiments from which the dimensions of parts cannot be inferred, let alone the materials; even the description does not disclose the dimensions, the precise mechanical properties or the material of the planar spring which would allow to deduce that said spring prevents rotation against forces below those which would cause disengagement of the support means; moreover, said forces are not defined in the description. It has to be borne in mind that feature (a) does not only require a considerable reduction of the rotation of the parts connected by the planar spring, but a constraint $\overline{\gamma}$ , that is a complete suppression of the rotation against a torsional force which is not quantified. Though it is not disputed that planar springs can be constructed in such a manner that they effect constraint $\overline{\gamma}$ in a certain range of torsional forces (this is for example the case for a planar spring described in A7), it cannot be unmistakably deduced from the *parent application* that the planar spring has said feature (a). Such a spring may provide lateral constraint but this does not necessarily lead to a constraint $\overline{\gamma}$ up to said (not exactly defined) torsional force. For example, planar springs made of relatively thin material and/or with spokes being relatively small in the circumferential dimension may provide lateral constraint but not rotation-prevention. The sketch of the planar spring, which the respondent produced during the oral proceedings and which shows a spring with such spokes, does indeed not prove that planar springs cannot have feature (a) but it shows that planar springs must not have said feature.

Thus the mere use of a planar spring, even if it effects lateral constraint, does not inevitably lead to a spring with feature (a). Since DII does not give more information about the planar spring, a manufacture of

such a spring in accordance with said document does not inevitably provide a spring having a constraint $\overline{\gamma}$ as defined by feature (a). The remaining documents mentioned in the *parent application* are irrelevant in this respect.

3.4 The argument of the appellant that in a litigation before a US District Court (see section VI. above) it was stated that a planar spring had said disputed property, is irrelevant. First, the Board is not bound to the US District Court's findings. Second, the details and conditions on which the argumentation and conclusions are based, are unknown. For example, at least one of US patents mentioned in the texts (the "'514 patent") explicitly discloses said disputed property of the planar spring and thus the situation there cannot be compared with that of the present case. Probably, the US court and the parties took into consideration, when interpreting the properties of the planar spring, said disclosure and thus came to their conclusions and, respectively, their statements.

3.5 Therefore, claims 1 of all requests do not comply with Article 76(1) EPC. As a consequence, said requests are not allowable, and therefore the appeal has to be dismissed.

4. *Alleged substantial procedural violation and refund of the appeal fee*

According to Rule 67 EPC, a necessary condition to be met for the reimbursement of the appeal fee is that the appeal is allowable. Such a condition is not met in the case under consideration and therefore the appellant's request has to be rejected.

5. *Apportionment of costs*

The request submitted by the respondent is substantially based on the allegation that the oral proceedings requested by the appellant are superflous.

The request has to be rejected. Apart from the fact that, according to the boards of appeal case law the right to oral proceedings is a fundamental procedural right (see, for example T 81/92), the Board considers that in the present case, the oral proceedings have been very helpful for the decision. Therefore no abuse of proceedings has taken place in the case under consideration.

**Order**

**For these reasons it is decided that:**

1. The appeal is dismissed.

2. The request of reimbursement of the appeal fee is rejected.

3. The request of apportionment of costs of the oral proceedings is rejected.

The Registrar: The Chairman:

P. Martorana E. Turrini