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D E C I S I O N
of 1 December 1999

Case Number: T 0762/95 - 3.4.1

Application Number: 86115398.9

Publication Number: 0221556

IPC: G07B 17/00

Language of the proceedings: EN

Title of invention:

Postage meter stepper motor module

Patentee:

Alcatel Satmam

Opponent:

Pitney Bowes, Inc.

Headword:

Postage meter stepper motor module/ALCATEL SATMAM

Relevant legal provisions:

EPC Art. 123(3), 56

Keyword:

"No extension of the protection conferred by the correction of an inconsistency in a claim if the correction is either apparent from the claim itself or from the true construction of the claim in the context of the specification"

"Inventive step (no)"

Decisions cited:

T 0271/84

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 762/95 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 1 December 1999

Appellant: Pitney Bowes Inc.
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 3 July 1995
concerning maintenance of European patent
No. 0 221 556 in amended form.

Composition of the Board:

Chairman: G. Davies
Members: H. K. Wolfrum
M. G. L. Rognoni

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal against the interlocutory decision of the opposition division, dispatched on 3 July 1995, maintaining European patent No. 0 221 556 in amended form. The notice of appeal was received on 4 September 1995, the prescribed fee being paid on the same day. The statement setting out the grounds of appeal was received on 31 October 1995.

The appeal, as well as the opposition, was based on Articles 52(1) and 56 EPC relying *inter alia* on documents:

E1: US-A-4 484 307,

E3: DE-B-27 23 978 and

E12: US-A-4 442 423.

- II. In response to a communication of the Board annexed to the summons to oral proceedings, the respondent (proprietor of the patent) filed on 29 October 1999 an amended main request, a first auxiliary request and a second auxiliary request.

- III. Oral proceedings were held on 1 December 1999.

The appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent requested that the appeal be dismissed and the patent be maintained on the basis of:

Claim 1 filed on 29 October 1999 and claims 2 to 10 filed on 1 June 1995; pages 2, 2a, 3 and 11 of the description filed on 1 June 1995 with an amendment to page 2 filed on 29 October 1999 and pages 4 to 10 as granted; Figures as granted (main request).

Claim 1 filed on 29 October 1999 with the remaining claims, description and Figures as for the main request (first auxiliary request).

Claim 1 filed on 29 October 1999, with claims 3 to 14 filed on 1 June 1995 renumbered 2 to 13 and the description and Figures as for the main request (second auxiliary request).

IV. Independent claim 1 of the main request reads (without reference numerals) as follows :

"1. Stepper motor module having a stepper motor for use in a meter having a base supporting a rotatable main shaft to which a printhead is mounted, the printhead being capable of printing a plurality of value characters, the main shaft having, for each value digit, a value rod mounted thereto and whose movement parallel to the main shaft axis is controlled by said stepper motor according to the chosen value character to be printed, a coupler member being secured by mounting means to a chosen position along the value rod, the stepper motor module comprising:

- a stepper motor frame to which is mounted the stepper motor,
- means for mounting the stepper motor frame to the base at a chosen position relative to the main shaft,
- a yoke mounted by mounting means to the stepper

motor frame for movement along a yoke path parallel to the main shaft axis, said yoke including a coupler member engaging portion for axially positioning the coupling member along the main shaft axis according to the position of the yoke while permitting free rotation of the coupler member about the main shaft axis,

- means for coupling the stepper motor and the yoke to move the yoke along the yoke path,

characterized in that it further comprises means for indicating the axial position of the yoke, said position indication means including an optical sensing unit mounted to the stepper motor frame, a code bar related to said sensing unit and including a plurality of apertures, secured to the yoke for movement therewith, and means for adjustably positioning at least one of the optical sensing unit and code bar."

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that its subject-matter is limited to the alternative of the optical sensing unit being adjustably positioned.

Claim 1 of the second auxiliary request is distinguished from claim 1 of the first auxiliary request by the feature that the code bar is removably mounted to the yoke.

V. The appellant essentially relied on the following submissions:

A. Amendments

The amendments made to claim 1 of all the requests changed the scope of protection and thus infringed

Article 123(3) EPC. Claim 1 as granted was directed to a stepper motor module and included in the list of features defining the module means for mounting a coupler member secured to a chosen axial position along the value rod. Amended claim 1 removed this feature from the definition of the stepper motor module and shifted it to the definition of the meter. Thus, a module according to the invention but without mounting means for the coupler member did not infringe the patent as granted but fell within the terms of the amended claim. This constituted an inadmissible broadening of the scope of protection.

B. Inventive step

A stepper motor module for use in a meter as specified in claim 1 of the main request was rendered obvious in particular by the prior art according to documents E1 and E3. Document E1 showed in Figure 2 a stepper motor module corresponding closely to the embodiment shown by Figure 4A of the patent in suit, i.e. a module acting on a value rod of the meter for setting a chosen value digit of a printhead. In the known module, the position of the value rod was detected by a sensing unit placed on the shaft of the stepper motor. The claimed subject-matter differed from the teaching of E1 only in the type and location of the means for indicating the position of the value rod. A non-contacting indicating means comprising an optical sensing unit cooperating with a code as required by claim 1 under consideration was known from document E3 in the same technical context of setting a value digit of a printhead via a value rod. Although in the specific embodiment shown in Figure 4 of E3 the indicating means directly sensed the

position of the value rod, a clear indication was given that a code bar could be located on other elements mechanically connected to the value rod. Taking up this indication, there was only a very limited number of alternative locations, namely the coupler member and the yoke available to the skilled person. In view of the limited extension of the coupler member in the direction of displacement along the main shaft axis, the yoke would have been the skilled person's obvious choice. Finally, the claimed means for adjusting the position of the indication means was to be considered a trivial feature because any measuring system required some adjustment, e.g. for calibration or similar purposes. Moreover, according to the patent specification, this means for adjusting was only a slotted hole and thus constituted merely a routine feature provided by the skilled person as a matter of course.

The same arguments applied to the first auxiliary request, claim 1 of which differed from claim 1 of the main request only in that the possibility of an adjustable code bar was eliminated.

Claim 1 of the second auxiliary request differed from claim 1 of the first auxiliary request by additionally defining the code bar to be removably mounted on the yoke. This feature was to be considered an entirely trivial technical measure which did not justify the reward of a patent. Moreover, this feature was known from document E12 for a position indicating means using an optical sensing unit and a code bar.

VI. The respondent disputed the appellant's view, relying

on the following arguments:

A. Amendments

The amendments made to claim 1 of all requests removed an inconsistency between the claim wording and the description and thus were only of a clarifying nature. Moreover, the feature relating to the mounting means of the coupler member was not deleted from claim 1 but only shifted from the characterizing part into the preamble. For these reasons, the amendments did not shift or extend the scope of protection and complied with Article 123(3) EPC.

B. Inventive step

The invention was concerned with a stepper motor module having specific means of indicating the position of the value rod which was highly reliable and allowed maintenance by service personnel in the field. None of the cited prior art documents addressed the problem of ease of maintenance or disclosed any measures facilitating maintenance. Even by combining the teachings of documents E1 and E3, the skilled person would not have arrived at the subject-matter of claim 1 of the main request because there was neither an indication to locate the code bar on the yoke, and thus to directly sense the position of the yoke, nor an indication as to means for adjustably positioning the position indicating means. According to document E1, the sensing unit required contact to the shaft of the motor to sense the position thereof. Since this shaft was far away from the value rod, the position information for the value rod was not sufficiently

precise and reliable. Moreover a mechanical failure of elements linking the motor shaft to the value rod could not be detected by the known position indicating means. On the other hand, according to the specific embodiment of document E3, the sensing unit was located directly on the value rod. This arrangement had the disadvantage that it did not allow ready access for maintenance or replacement. Although E3 covered the possibility of using alternative locations for the sensing unit, it implied the provision of additional elements fixed to the value rod. Thus, there were more than just two alternative locations for the sensing unit to be considered. Hence, the subject-matter of claim 1 involved an inventive step within the meaning of Article 56 EPC.

The auxiliary requests further emphasised the advantageous provision of adjustable position indicating means and an increased ease of maintenance by the provision of a removable code bar.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. *Amendments (Articles 123(2) and (3) EPC)*

The subject-matter of claim 1 of the main request is based on original claims 12 to 16 and the description of Figure 4A, disclosing mounting means for securing the coupler member to the value rod. The subject-matter of claim 1 of the first auxiliary request is

additionally based on the description of Figure 4 disclosing means for adjustably securing the optical sensing unit to the stepper motor frame and the subject-matter of claim 1 of the second auxiliary request is further based on original claim 18. The Board is thus satisfied that the amendments comply with the requirement of Article 123(2) EPC. This has not been contested by the appellant.

As regards the alleged extension of protection conferred by the removal of the definition of mounting means for the coupler member from the list of features defining the stepper motor module, the Board disagrees with the respondent that the shifting of this feature within claim 1 would be equivalent to moving a feature from the characterizing part into the preamble. However, in the given circumstances, this amendment does not change the extension of protection conferred for the following reasons.

Claim 1 as granted defines a value rod and its associated coupler member as forming part of the **meter** within which the stepper motor module is to be used, but includes the means for mounting the coupler member to the value rod (i.e. the elements provided between the coupler member and the value rod) in the list of features defining the **module**. Thus, the claim wording casts doubt on whether it is technically correct to assume that the mounting means really belongs to the module. However, it is clear from the description of Figures 4 and 4A and in particular from column 9, lines 2 to 6 of the patent specification that the mounting means for the coupler member is either arranged between the coupler member and the value rod

or forms part of the value rod itself. Thus, the mounting means, the value rod and the coupler member are clearly part of the main shaft assembly and, consequently, of the meter. The elements of the stepper motor module are distinguished from those of the main shaft assembly in that the module, in contrast to the main shaft assembly, can be easily removed without altering the positions of other elements of the meter (cf. column 3, lines 1 to 11, column 8, lines 23 to 28, and column 10, lines 35 to 39 of the patent specification). A skilled person reading claim 1 as granted would have readily recognized that the mounting means for the coupler member could not be easily removed from the meter together with the other features of the module and, therefore, did not form part of the module but rather defined an element of the meter outside the module. Hence, the contested amendment to claim 1 of the requests under consideration simply clarifies an inconsistency and does not change the meaning of the claim on its true construction in the context of the specification (cf. decision T 271/84 OJ 1987, 405).

For these reasons, the Board is satisfied that the amendments made to the claims according to the main request, first auxiliary request and second auxiliary request also comply with the requirements of Article 123(3) EPC.

3. *Inventive step (Articles 52(1) and 56 EPC)*

3.1 Document E1 (cf. in particular Figure 2 and the corresponding description in column 10, line 33 to column 11, line 9) is considered the closest prior art,

representing a stepper motor module according to the preamble of claim 1 of the main request. In order to determine the position of a value rod setting a value character to be printed, the stepper motor module according to E1 has a position indication means located at the shaft of the stepper motor and comprising verification contacts for generating a signal representative of the position of an internal wiper connected to the shaft of the stepper motor. The position indication means senses the position of the moving element which is not directly connected to the value rod so that any failure or backlash of moving elements located between the motor shaft and the value rod escapes detection. Moreover, the position indication means relies on sliding contacts which are susceptible to wear.

3.2 The subject-matter of claim 1 under consideration is distinguished from the stepper motor module according to E1 in that the position indication means is a non-contacting means which directly senses the axial position of the yoke. It comprises an optical sensing unit mounted to the stepper motor frame and a related code bar which includes a plurality of apertures and is secured to the yoke. Moreover, means are provided for adjustably positioning at least one of the optical sensing unit and code bar.

3.3 In view of these differences, the technical problem addressed by the present invention is to improve the accuracy and reliability of the indication of the position of the value rod while affording ease of maintenance of the stepper motor module.

Ease of maintenance as well as reliability and precision of operation are basic demands the skilled person is concerned with when designing meters (such as postage meters). The necessity of maintenance is explicitly mentioned in column 2, lines 2 to 5 of E1. The problem of reliability and accuracy of a position indication means for sensing the position of a value rod in a meter is explicitly addressed in the prior art according to document E3 (cf. column 3, lines 5 to 8 and 23 to 27). For these reasons, the recognition of the problem addressed by the invention is not considered to contribute to an inventive step.

- 3.4 The position indication means known from document E3 (cf. in particular Figures 1 and 4 to 6 with the corresponding description) are non-contacting means which comprise in one example an optical sensing unit and a related code bar located on the arranged value rod for directly sensing the axial position thereof. Moreover, an indication is given in column 5, lines 50 to 56 of E3 that the code bar may be carried by any other element mechanically connected to the value rod, for example via another rod or connecting element.
- 3.5 Starting from a module as known from E1 and trying to improve its accuracy and reliability by taking into consideration a non-contacting position indication means known from E3, the skilled person was left with the task of finding a suitable location for these means. In the Board's view, the skilled person would have readily recognized that reliability and accuracy would be highest if the position indication means directly sensed the position of the value rod. However, it would have been likewise apparent to the skilled

person that by strictly adopting the specific embodiment of E3 the position indication means could no longer be replaced together with the stepper motor module for maintenance, as was possible with the module according to E1. However, E3 refers also to alternative locations of the position indication means which provided a viable trade-off between ease of maintenance and accuracy of measurement. Taking up this hint, it would have been obvious to the skilled person to contemplate sensing the position of one of the moving elements existing between the motor shaft and the value rod and, consequently, securing the code bar to this element. In the meters known from E1 and E3 there are in fact only two elements which move longitudinally together with the value rod and which are suitable for an accurate measurement of the rod's longitudinal displacement, i.e. the coupling ring sitting on the main shaft axis and the yoke. Since the coupling ring cannot be easily replaced, the natural choice for placement of the code bar would have been the yoke. In this context, the Board does not accept the respondent's argument that the teaching of E3 pointed to additional elements mechanically coupled to the value rod for placement of the code bar. First of all, a skilled person would not add extra elements to an existing structure and thus increase the complexity thereof if existing elements could perform a desired function as well. Moreover, in the specific case of the value rod in a meter as known from E1 or E3, any extra element directly coupled to the value rod would have impaired the rotation of the main shaft during printing.

Finally, as regards the provision of means for adjustably positioning at least one of the optical sensing unit and code bar, the Board considers this feature a trivial measure because any measuring system needs adjustment, for instance, for calibration. The skilled person would have provided such means as a matter of course.

- 3.6 As regards the first auxiliary request, the Board considers the feature of rendering the optical sensing unit adjustable to constitute a simple choice between two obvious alternatives so that the reasons set out for claim 1 of the main request apply with equal force to claim 1 of the first auxiliary request.
- 3.7 As regards the second auxiliary request, the provision of a removable code bar has to be considered a straightforward design option which is rendered obvious in particular by document E12 showing in Figure 1 a code bar of an optical position indication means attached to a shaft by a mechanical connector.
- 3.8 For the foregoing reasons, in the Board's judgement, the subject-matter of independent claims 1 of all requests on file does not involve an inventive step within the meaning of Article 56 EPC. These claims are therefore not allowable.
4. Since none of the appellant's requests is allowable, the ground for opposition prejudices the maintenance of the European patent.

Order

For these reasons it is decided that:

1. The decision of the opposition division is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

M. Beer

G. Davies