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D E C I S I O N
of 17 January 1995

Case Number: T 0384/92 - 3.5.1

Application Number: 85201722.7

Publication Number: 0183288

IPC: G06K 11/06

Language of the proceedings: EN

Title of invention:
Versatilely applicable computer

Applicant:
C. van der Lely N.V.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 56

Keyword:
"Inventive step - (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0384/92 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 17 January 1995

Appellant: C. van der Lely N.V.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office dated 9 January 1992 refusing European patent application No. 85 201 722.7 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: C. G. F. Biggio
G. Davies

Summary of Facts and Submissions

I. The appeal contests the Examining Division's decision to refuse European patent application No. 85 201 722.7, publication No. 0 183 288, filed on 22 October 1985, and claiming priority dates of 22 October 1984 and 24 December 1984.

II. The decision was issued on 9 January 1992.

The reason given for the refusal was that the subject matter of Claim 1, filed on 15 June 1991, lacked an inventive step in the light of prior art documents

D1: PAJP, Vol. 6, No. 70 (P-113) [948], 6.5.82;
D2: US-A-3 835 464; and
D4: DE-C-3 214 443.

III. An appeal against the decision was lodged on 26 February 1992. The appeal fee was paid on the same day.

On 22 April 1992, the Appellant filed a Statement of Grounds, together with new claims.

IV. In a communication pursuant to Article 110(2) EPC, the Rapporteur cited two further prior art documents

D5: R.A.Chalmers: "Slew Knobs - An Alternative to the Light Pen", IEEE Transactions on Nuclear Science, Vol. 20, No. 1, February 1973, pages 348 to 351 (already mentioned in the European Search Report), and

D6: (a brochure) "Personal Programming", Texas Instruments, 1977 (new to the proceedings).

It was pointed out that D6 described a portable computer having all its major elements in a single housing, and that D5 disclosed the functional equivalence and mechanical similarities between mice, trackballs and joysticks.

V. Oral proceedings were held, in accordance with the Appellant's conditional request, on 17 January 1995. In those proceedings, the Appellant made main and auxiliary requests for grant of the patent. The documents of the main request are as follows:

Claims 1 to 4 submitted 13 January 1995;

description pages 2 to 28 as originally filed, and pages 1, 1a submitted 15 June 1991;

drawing sheets 1/9 to 9/9 as originally filed.

In the auxiliary request, these claims are replaced by Claims 1 and 2 submitted 18 July 1994.

VI. The independent claims of the requests read as follows:

Main request:
"1. A computer, portable and transportable and operable during travelling by a person of ordinary strength, provided with main elements which comprise a screen (7; 107), a keyboard (9), and at least one electronic circuit, the computer having further a manually operable input device (14, 15; 113) having an at least partly spherically shaped rotatable input member (14; 114) provided with sensor means (115) near its surface, which sensor means are electrically connected to said electronic circuit, said input device (14, 15; 113) further comprising switching means (15; 117), situated near or connected to said rotatable input member,

whereby by means of the rotatable input member (14; 114) in combination with the switching means (15; 117) data displayed on the screen (7; 107) can be indicated e.g. in order to activate certain programmes stored in the computer,

characterised in that

all said main elements are built together in a single housing (4, 104), the input device (14, 15; 113) being attached to said housing (4, 104), whereby the rotatable input member (14; 114) together with the switching means (15; 117) can be directly operated by an operating person with the same hand."

Auxiliary request:
"1. A computer, portable and transportable and operable during travelling by a person of ordinary strength, provided with main elements which comprise a display (7), a keyboard (9), at least one electronic circuit, a manually rotatable input member (14) which is at least partly spherically shaped and provided with sensor means (115) near its surface, which sensor means are electrically connected to said electronic circuit, and with switching means (15, 117), for storing input values defined by said input member in a memory included in said circuit, and whereby the computer (1) is provided with means for the recording of business figures, said computer furthermore comprising housing means (4, 104) adapted to be used in a stand-alone mode of the computer on a table,

characterised in that

all said main elements, together with the recording means, are built together in a single housing (4, 104), said rotatable input member (14) partly protruding from

an opening recessed in the single housing, whereby the input member (14) which protrudes from the outer surface of said single housing (4) is completely spherically shaped and can be universally moved by a finger of the operating person."

VII. Most of the arguments in the oral proceedings were devoted to the main request, the Appellant explaining that the previous set of claims was being maintained mainly in case the Board were to reject the new request due to, for example, its late submission.

The Appellant argued essentially as follows:

The Applicant is a manufacturer of agricultural machinery, this being a field where computers were not, at the time of the invention, in common use. The invention was to adapt a computer system so that, as well as being usable on a table top, it could be carried to and installed in a tractor, and could further be used by the tractor driver while it was in motion. The computer systems with which the inventor was familiar consisted of several pieces, typically a separated screen and keyboard, and sometimes a mouse. D2 is a document suitably reflecting this state of the art, and had been used to divide the claims according to Rule 29(1) EPC. The problem arising is that there is no "table top" in a tractor which would be suitable for installing such a computer, and in particular for using a mouse; even if there were, a mouse could not be satisfactorily used while the tractor was in motion. The inventor's solution to this problem consisted of two features, which could not be considered separately. These were firstly to make the computer into a single unit and secondly to replace the mouse by a device which could be included in such a single unit, having the same functionality, and which could be handled in an easy

way, in particular with one hand. Implementing the computer in a single unit conferred two advantages, firstly it enhanced portability and secondly it reduced the space taken up in the tractor.

Since no document in the proceedings gave any indication of this solution to the problem of mounting a computer in a tractor, and the features of the characterising part of the independent claim were also not known from any available document, the claim should be considered new and inventive.

In response to suggestions that, historically, single-unit computer systems were known, tending to have predated the multiple-piece system described by the Appellant, it was argued that the Board should consider that the inventor was a manufacturer of agricultural machinery, not a skilled person in the field of computers, and that he considered the state of computers as he saw it at the time of making the invention, i.e. commonly in multiple units. Furthermore, the prior art documents produced in the Search Report did not show any single-unit computers, even though this had been an important aspect of the application as filed. When attention was drawn to document D6, the Appellant argued that this was irrelevant since the device discussed therein was a very simple computer and did not comprise any mouselike device.

D1 showed a joystick mounted in the same unit as a keyboard, but there was no indication of the first idea of the current invention, i.e. a complete computer system in one housing. These ideas should not be separated from one another; the invention should be seen as a whole.

The Appellant also argued that it required a specific inventive insight to see that a conventional multi-piece computer could be adapted to be mounted in a tractor.

VIII. At the conclusion of the oral proceedings the Board's decision to dismiss the appeal was announced.

Reasons for the Decision

1. The appeal is admissible.

2. *Admissibility of the requests*

The subject-matter of the newly submitted claims of the main and auxiliary requests is admissible in that it does not extend beyond the content of the application as filed (Article 123(2) EPC). In particular the subject-matter of the independent claims of both main and auxiliary requests is clearly and unambiguously derivable from the description, page 3 line 14 to page 4 line 24, page 5 lines 10 to 19, page 10, lines 31 to 37, and original page 1, lines 13 to 16.

In addition, since the new main request does not substantially change the subject-matter claimed, the Board has decided to admit the new main request, despite its late submission.

3. *Novelty*

No document available to the Board shows a computer comprising (1) a screen or display, (2) a keyboard, (3) at least one electronic circuit, and (4) a rotatable input member which is at least partly spherically

shaped, all built together as a single unit. Hence the subject-matter of the independent claim of both requests is novel.

4. *Inventive step*

4.1 The main request

4.1.1 The Board agrees with the Appellant that a suitable starting point for considering the invention is the prior art document D2, which discloses a computer system having at least implicitly all the concrete features of the precharacterising part of the independent claim. However it is to be noted that the system disclosed in D2 is not necessarily "portable and transportable and operable during travelling", since these functional features, while specified in the precharacterising part of the claim, constitute rather a statement of the effect of the claimed invention.

4.1.2 The Board cannot, however, agree with the Appellant's assessment of who should be considered the relevant skilled man, nor, to some extent, with his formulation of the problem solved. When considering the problem overcome by a claimed invention and who is the appropriate skilled man, it is necessary to consider not only the description, but also, as a decisive factor, the subject-matter actually claimed. Here the invention claimed is by no means limited to the use of computers in tractors. In fact the description itself mentions a much wider field of application (page 13, line 28 to page 14, line 23). As currently claimed, it is clear that the invention is applicable to anyone travelling anywhere, e.g. in a car, a train or an aeroplane. The Appellant emphasised in the oral proceedings that the feature that the rotatable input member together with the switching means can be operated with the same hand

is particularly important for a tractor driver. However, it is clear that this is an ergonomically desirable feature for ease of use of any computer with a mouse or equivalent device.

Hence, the Board does not consider that the problem to be solved is to allow the user to carry a computer to a tractor, to install it there conveniently, and to use it while driving the tractor. Rather it assesses the problem as being simply to make a computer, having the functions of the prior art (D2) computer, which is portable and which can be used during travelling. Equally the skilled person to be considered is a computer designer. Given the claimed subject-matter, it is irrelevant that the inventor was actually active in another field, the design of agricultural machinery, as put forward in the Appellant's arguments.

4.1.3 The Board considers that the desirability of having a computer which is portable and can be used during travelling was clearly appreciated by the skilled person at the priority date. This is illustrated by D6, the user manual for a hand-held, programmable calculator, which is clearly a form of computer. No inventive activity can be seen in appreciating that it would equally be desirable to have a portable computer having the capabilities of that disclosed in D2.

It is self-evident that for the portability of any device, it is preferable that it should be capable of being put together as a single item, for example in a carrying case. It is clearly even more preferable, to avoid having to assemble and disassemble the device every time that it is moved, for it to be constructed as a single piece, as is, for example, the calculator in D6. Thus simply the requirement for portability leads the skilled person directly to consider building the

computer in a single housing. The general lack of suitable supports for multiple separate parts in a travelling environment, whether a tractor, a car or an aeroplane, would only reinforce the appropriateness of this choice.

4.1.4 During oral proceedings the Appellant argued that, if building all the parts of a computer in a single housing were as obvious as the Board apparently thought, it was strange that no prior art document showing such a computer had been found by the Search Division. In response to this it is to be pointed out that the original claims did not specify this feature, using consistently the phrase "at least one housing". The description also contains embodiments where the computer is not in a single housing - see page 12 line 1 to page 13 line 23. Hence the Search Examiner had no reason to look for and record in the Search Report documents showing computers having all their main elements in a single housing.

4.1.5 The skilled person, having decided to use a single housing, does face a small problem. The mouse of the computer of D2 does not lend itself either to incorporation in a single housing of the computer or to use during travelling. However, the skilled person would be aware of an obvious and long-standing alternative to the mouse, namely the so-called "trackball". He would know from his general background knowledge that the trackball is functionally equivalent to a mouse and works in almost the same way, by the movement of a ball, the single significant difference being that the ball is rotated by the user's hand or finger, rather than by the movement of the mouse's housing over a flat surface. This common knowledge is illustrated in D5, which it should be noticed was published in 1973, on page 350, "Other Control Devices". The trackball is therefore

perfectly and obviously suited to replace the mouse in a system to be built in one housing and to be used while travelling. A trackball is normally associated with one or more buttons, operable by the same hand, just as is a mouse.

4.1.6 Hence the skilled person would, without the exercise of inventiveness, replace the mouse of the computer of D2 by a trackball to achieve the single-unit construction obviously desirable for a portable computer to be used while travelling. Thus he would directly arrive at an embodiment of the invention as claimed in Claim 1.

4.1.7 It may be noted that the independent Claim 1 of the main request is not actually restricted to a trackball. It also covers the joystick-like device shown in the third embodiment of the description - see for example Figure 12. However, it is firstly of course sufficient that one embodiment falling within a claim lacks an inventive step for the claim to be rejected. Secondly, the employment of a joystick also would not show any inventiveness, were the claim restricted to that embodiment, since the further functional equivalence of a joystick to a mouse and a trackball is well known, as pointed out in the passage of D5 cited above.

4.1.8 Since the independent claim of the main request does not satisfy the requirements of Articles 52(1) and 56 EPC for an inventive step, the main request must be refused.

4.2 The auxiliary request

4.2.1 The independent claim of the auxiliary request differs from that of the main request in the following essential ways:

- it describes the clearly conventional functions of the mouse or its replacement in slightly different terms, in the precharacterising part of the claim;

- it does not identify the claimed rotatable input member and associated switching means as together forming an "input device", and there is no restriction that the input member and the switching means need be near each other or operable with the same hand;

- the rotatable input member is specified as being located in and protruding from the housing, as opposed to the broader definition, that the input device as a whole is "attached to" the housing, given in the main request;

- the input member is defined as being "completely spherically shaped", so that the joystick embodiment is apparently excluded;

- it is specified that the computer may also be used on a table; and that

- the input member can be moved "universally", i.e. in any direction, by a finger.

4.2.2 None of these differences affects the reasons put forward above for considering that the subject-matter of the independent claim of the main request lacks an inventive step. The single-housing computer incorporating a trackball, including buttons, that the Board considered the skilled person would design without the exercise of inventiveness, is just as much an embodiment of the independent claim of the auxiliary request as it is of that of the main request.

4.2.3 Hence this claim too is considered to lack an inventive step and the auxiliary request must also be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl P. K. J. van den Berg