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DES BREVETS

D E C I S I O N
of 5 March 1997

Case Number: T 0333/95 - 3.5.1

Application Number: 88480023.6

Publication Number: 0309373

IPC: G06F 15/72

Language of the proceedings: EN

Title of invention:
Interactive animation of graphics objects

Applicant:
Interactive Business Machines Corporation

Opponent:
-

Headword:
Interactive animation/I.B.M.

Relevant legal provisions:
EPC Art. 52(2) & (3), 56, 111(1)

Keyword:
"Inventive step - (yes)"
"Contribution to the field not excluded from patentability"

Decisions cited:
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Catchword:
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Beschwerdekammern   Boards of Appeal   Chambres de recours

Case Number: T 0333/95 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 5 March 1997

Appellant: Interactive Business Machines
                              Corporation
                              Old Orchard Road
                              Armonk, N.Y. 10504   (US)

Representative: Tubiana, Max
                              Compagnie IBM France
                              Département de Propriété Intellectuelle
                              06610 La Gaude   (FR)

Decision under appeal: Decision of the Examining Division of the
                              European Patent Office posted on 11 November 1994
                              refusing European patent application
                              No. 88 480 023.6 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. Randes
             G. Davies

Summary of Facts and Submissions

I.   European patent application No. 88 480 023.6, filed on
        30 August 1988 claiming priority of 21 September 1987
        and published under No. 0 309 373, was refused by a
        decision of the Examining Division dated 11 November
        1994.

II.   The reason for the refusal was that the subject-matter
        of independent claim 1 of the set of five claims filed
        on 27 September 1994 lacked an inventive step having
        regard to the prior art documents:

        D1: J. Wilhelms, "Toward Automatic Motion Control",
             IEEE COMPUTER GRAPHICS AND APPLICATIONS, IEEE
             Society Press, volume 7, No. 4, April 1987,
             pages 11 to 12,

        D2: R. G. Shoup, "Superpaint: the digital animator",
             DATAMOTION, Technical Publishing Co., volume 25,
             No. 5, May 1979, pages 150 to 156.

III.   On 4 January 1995 the applicants filed a notice of
        appeal against this decision and paid the appeal fee on
        the same day. A statement setting out the grounds of
        appeal was filed on 21 March 1993. The appellants
        requested that a patent be granted on the basis of
        newly filed claims 1 and 2. In case the Board
        considered refusing said request, oral proceedings were
        requested.

IV.   In a communication dated 19 July 1996, the rapporteur
        expressed the preliminary opinion that certain parts of
        claim 1 appeared to be unclear and it was said to be

questionable whether the claim met the requirements of Article 123(2) EPC. However, would said deficiencies be remedied or the objections overcome by supporting arguments, it was hinted at that the contested decision might be set aside.

V.   With a letter filed on 27 November 1996, the appellants filed a new set of claims 1 to 3 and argued that all objections made by the rapporteur had been removed. Claim 1 as filed reads:

"A method of interactively creating an animated display on a computer graphics screen (10) of one or a plurality of predefined graphics objects (60) of a graphics object display stored in a memory, said graphics objects being hidden, shown, redefined, placed or moved owing to a current cursor (50) on a background;

said method characterized in that it comprises the steps of:

-    selecting one of said graphics objects (60) from said graphics objects display on said graphics screen;

-    making said graphics objects (60) the current cursor (50) under the control of a pointing device (40) so as to perform the move operations; and

-    recording said graphics objects operations in a command list."

VI.   Thus the appellants request the decision to be set
       aside and a patent granted on the basis of said cited
       claim 1, dependent claims 2 and 3, description pages 1
       and 3 to 16 as originally filed and pages 2, 2a and 2b
       filed on 27 September 1994 and, moreover, drawing
       sheets 1 to 6 as originally filed.

Reasons for the Decision

1.   The appeal is admissible.

2.   *Amendments*

      The Board notes that present claim 1 is significantly
      shorter than the claim filed with the grounds of appeal
      and also shorter than the refused claim. The prior art
      portion of claim 1 includes the starting point of the
      invention as described in the introductory part of the
      description and appears to give an appropriate
      identification of that prior art. The characterizing
      portion of claim 1 has been delimited to describe the
      move operation of the method of interactively creating
      an animated display.

      It appears to the Board that the wording of claim 1 now
      is clear and, moreover, that claim 1 meets the
      requirements of Article 123(2) EPC. Thus, it has now
      been made clear that a graphics object (a sprite)
      itself can be made the cursor. The Board also agrees
      that the last feature of the claim can only mean that
      said recording is performed automatically by the
      computer, since the method claimed is an interactive
      method. Therefore, it is also implicitly understood
      that said operation might be played back at a later
      time. The method, identified in the characterizing
      portion of claim 1, thus, relates to the move

operation, which is a separate operation clearly distinguished from the other operations described in the original application documents and thus the restriction of claim 1 to this feature is admissible with regard to Article 123(2) EPC.

3.   *Novelty*

D1 discloses different aspects and features of the animation techniques known at the time of the publication of that document. Therefore, those features are necessarily not known in combination. Both "interactive" and "scripted" motion control for computer animation are discussed. Among the interactive motion control methods is "path specification" (page 12, right hand column, lines 22 to 30), where the path to be taken by an object must be defined, and may be "interactively created by using dials or a tablet to pick positions in a displayed world. These positions can then be used to define smooth curved paths along which objects move during the animation". The main subject of the paper, how to automate motion control of complex articulated objects, is not relevant to the simple application of the present invention. It is noted that D1 does not disclose that the user may directly move the graphics objects (make the graphics object a cursor) on a screen.

D2 discloses a graphics system making possible simple animation through manipulation of its colour palette. All drawing, editing and animation are done, and commands given, by a pen and tablet (page 151, second column, lines 9 to 11). There is a menu of picture editing operations which can be invoked (page 151, column 2, line 22 to column three, line 1 and Figure 2). These operations include, copying, overlying, combining and changing the colour of objects or areas in the picture. The object to be animated is

drawn on the screen at up to ten different places.
Initially, all the views of the objects are hidden by
setting the colour table so that each view of the
object displays a colour identical to the background
colour. The objects are thus "hidden". The animation
effect is then created by manipulating the colour table
definitions so as to turn on and reveal the hidden
objects in sequence and hence give a very crude
animation (page 154, line 5 to page 155, left hand
column, line 7).

The Board also takes into account the teaching of

D3:   R.P. FUTRELLE: "Galatea: Interactive graphics for
       the analysis of moving images", PROCEEDINGS OF
       IFIP CONGRESS ON INFORMATION PROCESSING,
       Stockholm, 5th to 10th August 1974, pages 712 to
       716, North-Holland Publishing Co., Amsterdam, NL,

which document, apparently, was not commented on in the
proceedings before the Examining Division, but which
was mentioned in the European Search Report.

This document discloses a system for analysing film and
video-tape sequences by animating objects on the same
screen as is used for display of the film (cf.
Figure 2). The object is selected from a table and the
movement of it can be simulated and recorded by a
pointer. The animation can be played back and altered,
whereat the parameters of the process can be adjusted
(cf. the bridging paragraph of columns 1 and 2 on
page 712). However, it must be noted that despite the
broad phrasing of this document, it only actually
discloses the manipulation of one type of graphics
object, an expanding wave front (cf. Figure 1). The
user may identify the centre of the wave front in the
film with a pen, specify that an expanding circle
should be placed at that point and then by means of the

pen follow the wave front over a period of time. The
pen movement is thereby recorded as the user moves it
and the "kinegram", the animation in the form of a wave
front, may be viewed in its own right (page 712,
column 1, lines 12 to 14).

Thus, none of the cited documents disclose the features
of claim 1. The subject-matter of claim 1, therefore,
is novel.

4.   *Inventive step*

Moreover, the Board is of the opinion that the
subject-matter of claim 1 also has an inventive step.

4.1   At first sight it appears that document D2 discloses
features of the precharacterizing portion of claim 1
and that it teaches that graphics objects can be
selected from a display.

However, D2 does not at all teach a move animation
which could be compared to the one of the invention.
This is not surprising, since the teaching of D2 is
mainly aimed at making it possible also for people
having no experience of videographic media to create
drawings and graphics. Moreover, while this document
discloses "hiding" an object in a picture by setting
its colour, this is not the same as hiding a sprite in
the application. In fact, the "objects" referred to
(cf. D2, e.g. page 152, line 18) would appear to be
objects in the subjective sense that the creator of a
picture intends an area to depict an object. Therefore,
this kind of animation does not concern the kind of
animation which is aimed at by the invention, i.e. in
reality a video game having graphics objects moving

across the display in real time (see the introductory
part of the description of the application under
"Description of the Prior Art"). In fact, this document
does not appear to disclose a teaching that could be
considered as a starting point of the invention.

4.2   To the Board, instead, it appears that the starting
        point of the invention should be considered to be the
        prior art in the form of video games as has been
        explained in the introductory part of the present
        application. The objective problem to be solved is seen
        in designing a method for providing a display interface
        which allows an operator interactively and in a simple
        way to define sequences of operations, including move
        operations, to be performed on graphics objects
        ("sprites" cf. the published application, the bridging
        paragraph of columns 1 and 2), thereby using a cursor
        as placement device.

4.3   The Board notes that D3 is the only document which
        apparently discloses that continuous recording of an
        animation movement, in this case performed and
        simulated by a pen, is known. However, this document is
        concerned with a quite different technique, i.e.
        analyses of natural processes recorded on film. During
        running of the film which is projected on the screen
        the user may follow a point in the moving image with
        the pen. This application is thus totally different
        from the starting point of the invention and the
        skilled man would not have turned to this document to
        find a solution to his problem.

4.4   As has been said above, D1 mentions methods for "path
        specification". However, it is nowhere explained in
        detail how said specification is performed. D1, thus,
        discloses that a "path" may be interactively created by
        picking positions in a displayed world, "these
        positions can then be used to define smooth, curved

paths along which objects move during the animation"
(cf. D1, page 12, right hand column, lines 26 to 30).
How said positions are chosen, how frequently and in
which way they have to be input has not been disclosed
in the document. The Board does not try to suggest, how
said steps of the methods of D1 were to be performed in
detail; this does not appear to be of any interest,
because such suggestions apparently would only be
speculations as long as no additional pertinent prior
art is available. It is also noted that D1 does not
mention operations such as showing, hiding and placing.

In any case D1, entirely lacks the concept of creating
an animation by the user manipulating the graphics
object on screen and the system automatically recording
those manipulations for later playback.

4.5   In particular, there is not revealed in D1 or anywhere
        else in the cited prior art that a graphics object
        itself is made the cursor. This feature, however, must
        very much simplify the performing of an operation on
        the object concerned; this is in particular true for
        the move operation. The Board does not at all agree
        with the opinion of the Examining Division that this
        feature would be self-evident (cf. page 3 of the
        decision, second paragraph). Instead, having regard to
        the cited prior art, one could well imagine that the
        operator might click on the object, click on a number
        of points on the path it is to take and then give a
        "move" command, whereupon the processor would
        interpolate a smooth path for the object and move it
        along this path.

4.6   It appears to the Board that rather than the user
        creating a list of commands (which may be in the form
        of positions to be past), which are then executed to
        produce the animation, the animation according to the
        invention is produced by the operator "showing" the

computer what he wants, by selecting a graphics object
on the screen and moving or selecting another operation
to be performed on it. The computer automatically
records the operation which therefore can be used for
playback later on. The Board can see no hint in the
cited prior art that would point in the direction of
the invention. Instead the solution does appear to
solve the problem in an elegant way, thereby minimizing
and simplifying the design effort of the operator and
giving him a tool that helps him to control in detail
the development of an animation during all phases of
its creation.

Therefore, the subject-matter of claim 1 is not obvious
and thus has an inventive step (Article 56 EPC).

5.   *Patentability*

In the communication of the Board, the opinion was
expressed that the invention might be excluded from
patentability by the provisions of Articles 52(2) and
(3).

However, the Board has come to the conclusion that
present claim 1 defines an invention which involves a
contribution to the field not excluded from
patentability. Thus, it appears that the second
characterizing feature, i.e. "making said graphics
object the current cursor" is clearly of a technical
character. In fact, it appears that the claimed method
uses a new input device including a graphics object,
which can be moved around the display as a cursor under
the control of the pointing device. This new input
device, indeed, appears to decrease both the necessary
mental and physical effort of the operator, since the
direct movement of the graphics object, obviously, does
not need the concentration necessary when the operation
must be performed by means of a normal cursor.

Moreover, the Board notes that the input device used by
the method automatically records the manipulations
performed by the operator and creates a command list
which makes it possible to play back the operations
performed by the operator. Thus, it appears that the
used input means, indeed, also functions as a
"programming means", in that its physical operations
are transferred to a memory in the form of a program.
The function of the "programming means" which
interprets the physical movements of the cursor (in the
form of a graphics object) into a programming language
also implies a technical activity and must be
considered to be within the borders of the technical
field not excluded from patentability.

Thus the Board has come to the conclusion that at least
some of the features of the characterizing part have a
technical character. Since it is an accepted
interpretation of Articles 52(2) and (3) EPC that an
invention may consist of a mix of features, which
consists partly of technical features and partly of
features excluded from patentability, it does not
appear to be necessary to investigate whether, or to
what extent, the programming by the "programming means"
and the data treatment connected thereto, as well as
the possible play-back function included in the method,
are contained within a field not excluded from
patentability.

6.   *Remittal*

At first sight, it appears to the Board that claims 2
and 3 may be acceptable dependent claims. However, the
Board finds that claim 2 includes some errors which
should be amended. Apparently, the word "invisible"

(line 9 of the claim) should be "visible" (cf.
Figure 2, reference numerals 111 and 112). Moreover,
there are some obvious typing errors in the claim which
should be amended.

Furthermore, the introductory part of the description
has not been adapted to the new set of claims (cf. the
statement of grounds of appeal, last paragraph). The
Board also notes that in the last paragraph of the
description the word "spirit" has been used which word
should, according to the EPO Guidelines, be objected to
(The Guidelines, Chapter III-4.3a).

To complete the examination and to put right the
mentioned deficiencies the Board remits the case to the
first instance (Article 111(1) EPC.

7.   *Oral proceedings*

Since the case is remitted to the first instance, oral
proceedings need not be held (see under III above).

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The case is remitted to the first instance for further
        prosecution on the basis of claim 1 with particular
        attention being paid to the deficiencies mentioned in
        point 6 above.

The Registrar: The Chairman:

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