

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT P. KERKER, JR.,
GERALD H. OTTAWAY AND MICHAEL T. PEETS

Appeal No. 95-3378
Application 08/126,443¹

ON BRIEF

Before HAIRSTON, KRASS, and FLEMING, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

¹ Application for patent filed September 23, 1993. According to applicants, the application is a continuation of Application 07/947,027, filed September 17, 1992, abandoned; which is a continuation of Application 07/495,811, filed March 19, 1990, abandoned.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 7. In an Amendment After Final (paper number 18), claims 1 and 7 were amended, and claim 2 was canceled. Accordingly, claims 1 and 3 through 7 remain on appeal.

The disclosed invention relates to a method of operating and storing data in a graphics display system to facilitate creation and display of sectional views of solid objects.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A method of operating a graphics display system to facilitate creation and display of sectional views of solid objects, said method comprising the steps of:

defining a base model or accessing a pre-existing base model of a solid object to be displayed in a sectional view;

defining a model of a sectioning object or accessing a pre-existing model of a sectioning object;

specifying a desired Boolean logic operation for applying said sectioning object model to said base model;

generating a hierarchically combined model of said solid object for subsequent generation of at least one view of said object, said combined model incorporating both said base model and said sectioning object model, for sectioning in accordance with said sectioning object model and in accordance with said Boolean logic operation as applied to said base model;

modifying said sectioning model while simultaneously viewing said base model;

modifying said base model within said hierarchically

Appeal No. 95-3378
Application No. 08/126,443

combined model;

generating at least one sectioned view of said solid object as represented by said modified base model and said modified sectioning object model.

The reference relied on by the examiner is:

Mortenson, "Geometric Modeling," John Wiley & Sons, 1985, pages 431 through 480.

Claims 1 and 3 through 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mortenson.

Reference is made to the briefs and the answer for the respective positions of the appellants and the examiner.

OPINION

Mortenson discloses (page 461) constructive solid geometry modeling methods that define complex solids as compositions of simpler solids or primitives. Boolean operators are used to execute the composition. "Constructive solid geometry representations of objects are ordered binary trees whose leaf or terminal nodes are either primitives or transformation data for rigid-body motions" (page 462). "The most common approach in contemporary modeling systems is to offer a finite set of concise, compact primitives whose size, shape, position, and orientation are determined by a small set of user-specified parameters" (page 463). "The Boolean operators used by CSG systems are the familiar threesome: union, difference, and

intersect" (page 465).

The examiner indicates (Answer, page 4) that a "model is shown in the upper portion of figure 10.34 where the union of cylinders define a sectioning object which is combined with a base model (the sphere)," and that "Mortenson further discloses at page 462 that the resulting combination of primitive models is also a model." The examiner acknowledges (Answer, pages 4 and 5) the following:

It is noted that Mortenson does not explicitly disclose that a resulting view is generated, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature because it is well known that modeling methods such as those disclosed by Mortenson are used in computer systems (in CAD systems in particular) and that in such systems it is often desired that the results of an operation be displayed for review or confirmation. It is also noted that Mortenson does not explicitly disclose a modifying operation, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature because modeling methods such as those disclosed by Mortenson are used in computer systems (in CAD systems in particular) and such systems often require that the model be modified (changing sizes or adding additional primitives for example). It is noted that Mortenson does not explicitly disclose that the sectioning object is defined while simultaneously viewing the base model, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to do so because Mortenson does teach at page 463 that the position of each element must be specified and figure 10.36 shows that in order to generate a desired sectioned or cutaway view the proper position for the sectioning object, in respect to the base model, must be selected and it is well

Appeal No. 95-3378
Application No. 08/126,443

known in the art that displaying the two objects simultaneously while positioning allows the user to easily see the resulting position.

It is evident that the examiner is of the opinion that all of the claimed steps not taught by Mortenson are well known in the art, and would have been obvious to include in Mortenson. The claimed features missing from Mortenson may indeed be well known in the art, but we have no evidence of that fact in the record. The broadly stated conclusions by the examiner can not take the place of evidence or a convincing line of reasoning that the claimed invention would have been obvious to the skilled artisan. The 1989 publication cited by the examiner (Answer, page 8) entitled "Using AutoCAD" by James E. Fuller has little relevance, if any, to the claimed features of a "combined model incorporating both said base model and said sectioning object model," and "modifying said sectioning model while simultaneously viewing said base model." In view of appellants' challenge (Brief, page 8) to the examiner's failure to cite any "authority whatsoever for his assertions of features beyond the admittedly limited teachings of Mortenson," the obviousness rejection of claims 1 and 3 through 7 is reversed because the examiner has failed to make a prima facie showing of the obviousness of the claimed invention via evidence or a convincing line of reasoning.

Appeal No. 95-3378
Application No. 08/126,443

DECISION

The decision of the examiner rejecting claims 1 and 3 through 7 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
MICHAEL R. FLEMING)	
Administrative Patent Judge)	

Appeal No. 95-3378
Application No. 08/126,443

Lawrence D. Cutter
IBM Corporation
Intellectual Property Law
Large Scale Computing Division
522 South Road (MS-P903)
Poughkeepsie, NY 12601-5400