

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte DAVID A. KING

---

Appeal No. 2002-0034  
Application 09/052,646

---

ON BRIEF

---

Before THOMAS, HAIRSTON, and KRASS, Administrative Patent Judges.  
THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1, 3-10 and 12-24, appellant having canceled claims 2 and 11.

Representative claim 24 is reproduced below:

24. An article comprising a computer readable storage medium storing instructions that cause a computer to:

Appeal No. 2002-0034  
Application 09/052,646

eliminate an object if the object is in a first state when all client references to the object are released; and

preserve the object if the object is in a second state when all client references are released.

The following reference is relied on by the examiner:

Kwan, et al. (Kwan), "Practical distributed garbage collection for networks with asynchronous clocks and message delay," IEEE, pg. 406-411 (June 1994).

Claims 1, 3-10 and 12-24 stand rejected under 35 U.S.C.

§ 103. As evidence of obviousness, the examiner relies upon Kwan alone.

Rather than repeat the positions of the appellant and the examiner, reference is made to the briefs and the answer for the respective details thereof.

#### OPINION

We reverse.

Each independent claim 1, 10, 16, and 24 on appeal in some manner recites in part a feature of deleting or eliminating an object in an object oriented programming environment under specified conditions. The deletion of the object occurs in claim 16 when all the clients to that object have released that object.

Appeal No. 2002-0034  
Application 09/052,646

A similar feature is recited in independent claims 1 and 24 in the context of eliminating the object when all the client references to the object have been released. Correspondingly, in independent claim 10 the object is deleted when a reference count reaches a predetermined value. It is this feature of deleting or eliminating the object under certain conditions that is not taught or suggested to the artisan based upon Kwan notwithstanding the examiner's urgings that it does teach this feature.

As a part of Kwan's survey of the prior art in the Introduction at column 1 at page 406 of his article, live objects may be deleted prematurely because the respective reference counts may be reduced to zero under certain conditions. It appears that this is the only indication that any object is deleted in the context of Kwan's teachings. Even in the context of this prior art known to Kwan, objects are able to be "reclaimed" immediately under certain conditions even though the reference count to an object does reach zero.

The apparent aim of Kwan's algorithm is to reclaim objects and not to delete them or eliminate them. This is expressed in the first full paragraph at column 1 at page 407 of his article, as well as in the second paragraph of the Conclusions at column 1 of page 411. Kwan does not define what "reclaiming" an object is but it appears clear that there is a distinction in the art between eliminating/deleting an object and reclaiming an object according to Kwan.

So-called inlets and outlets are special objects in themselves in addition to root objects and other objects that may be within any of the two respective processors depicted for example in Figure 1 at page 407. As stated at the bottom of column 1 at page 408 "as soon as the reference counter of an inlet reaches zero, an inlet can be reclaimed." Correspondingly, as stated at the middle of the second column of page 408, the "inlet will be reclaimed if its reference counter reaches zero and it is not in use." Thus, it is clear that according to the teachings relied upon by the examiner at page 408, in the context of inlet/outlet objects which reach a zero reference count, they are respectively reclaimed and not necessarily eliminated or

Appeal No. 2002-0034  
Application 09/052,646

deleted. Stated otherwise, inlet/outlet objects are only reclaimed when not "in use" within Kwan's teachings and suggestions.

Because the examiner's positions with respect to the rejections of each of the independent claims on appeal is based upon the assertion that the claimed feature of elimination or deletion is met by the teaching in Kwan of reclaiming an object, we must reverse the rejection of each of the independent claims because this reference does not appear to teach this equivalence and each independent claim on appeal requires in some manner this feature. As such, we do not sustain the examiner's respective rejections of their dependent claims as well.

Appeal No. 2002-0034  
Application 09/052,646

Accordingly, the decision of the examiner rejecting claims  
1, 3-10 and 12-24 under 35 U.S.C. § 103 is reversed.

REVERSED

James D. Thomas	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
Kenneth W. Hairston	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
Errol A. Krass	)	
Administrative Patent Judge	)	

JDT/cam

Appeal No. 2002-0034  
Application 09/052,646

Timothy N. Trop  
TROP, PRUNER & HU, P.C.  
8554 Katy Freeway  
Suite 100  
Houston, TX 77024