IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

MIRROR WORLDS, LLC,	Civil Action No. 6:08-cv-88 LED
Plaintiff,	
v.	JURY TRIAL DEMANDED
APPLE INC.,	
Defendant.	
APPLE INC.,	
Counterclaim Plaintiff,	
v.	
MIRROR WORLDS, LLC, MIRROR WORLDS TECHNOLOGIES, INC.,	
Counterclaim Defendants.	

DECLARATION OF STEVEN K. FEINER, Ph.D.

I, Steven K. Feiner, hereby declare as follows:

1.   I have been retained by Apple Inc. to serve as an expert in the above-captioned case. I have been asked to render an opinion regarding the validity of Apple's U.S. Patent No. 6,613,101 (the "Piles patent") over U.S. Patent No. 5,287,448 to Nicol ("Nicol"), in view of U.S. Patent No. 5,060,135 to Levine ("Levine").

2.   This declaration is based upon information currently known to me, and I reserve the right to rely upon any additional information I become aware of after the date of this declaration and to respond to any arguments or opinions regarding the subject matter of my declaration raised by Mirror Worlds Technologies, Inc. ("MWT") or its experts after the date of this declaration, including at trial.

I.   QUALIFICATIONS

3.   I am a Professor of Computer Science at Columbia University in New York, NY. A copy of my *curriculum vitae* describing my qualifications, responsibilities, employment history, honors, awards, and appointments, and a listing of the papers, articles, books, videos, presentations, tutorials, and other material I have authored is attached to this declaration as Exhibit 1.

4.   I direct the Computer Graphics and User Interfaces Laboratory at Columbia University and, as set forth in my curriculum vitae, I have been involved in research in a variety of technical areas related to the Piles patent for over 30 years. I am also the co–author of *Computer Graphics: Principles and Practice* (Addison-Wesley, 1990) and *Introduction to Computer Graphics* (Addison-Wesley, 1993), which are used as textbooks in computer science curricula in a number of universities.

II.   MATERIALS CONSIDERED

5.   I have considered the following information in connection with this declaration:

- MWT's motion for summary judgment of invalidity of the Piles patent and exhibits and attachments thereto, including the Declaration of John Levy, Ph.D ("Levy Decl.").

- The Piles patent;

- The prosecution file history of the application that issued as the Piles patent;

- U.S. Patent No. 6,243,724 (the "'724 patent"), which is the parent to the Piles patent;

- The prosecution file history of the application that issued as the '724 patent ("724 FH");

- U.S. Patent No. 5,287,448 to Nicol ("Nicol");

- U.S. Patent No. 5,060,135 to Levine ("Levine");

- The Court's February 16, 2010 preliminary order regarding, among other issues, claim construction of the Piles patent (Docket No. 178) ("Preliminary CC Order");

- The parties' briefing regarding claim construction of the Piles patent.

6.   I also based my opinions herein on my education, training and experience and my review of the documents and materials produced in this litigation, as well as materials I uncovered in researching this assignment.

III.   LEVEL OF ORDINARY SKILL IN THE ART

7.   I understand that the Piles patent is to be interpreted from the point of view of a hypothetical person of "ordinary skill in the art" as of the time of the invention. Here, the Piles patent claims priority back to 1992. In my opinion, one of skill in the art would have some combination of education and experience that provided sufficient competence in the appropriate

aspects of computer science, such as graphical user interface design, and some knowledge of document processing, software design and development, data structures, operating systems, information retrieval, and network computing.

8. My opinion about the level of ordinary skill in the art is based on my personal experience working and teaching in computer science before, during, and after the filing of the Piles patent, my knowledge of colleagues and others working in the field at the time the Piles patent was filed, my study of the Piles patent and related materials, and my knowledge of: (i) the level of education and experience of persons (including the named inventors) actively working in the field at the time the subject matter at issue was developed; (ii) activities of others working in the field; (iii) the sophistication of the relevant technology; (iv) prior art including patents and publications; and (v) the types of problems encountered in the art at the time the subject matter was developed.

IV. CLAIM CONSTRUCTION AND PROSECUTION HISTORY OF THE PILES PATENT

9. Independent claim 1 of the Piles patent is representative of the other two independent asserted claims—claims 5 and 9. Claim 1 recites:

> 1. A method for organizing and viewing information in a computer filing system having a display device and a first plurality of documents, said method comprising:
>
> displaying *a graphical iconic representation of a collection of said first plurality of documents*;
>
> *displaying a first indicia of a first document* of said collection by selecting a first position from said graphical iconic representation, wherein said first position on said graphical iconic representation is capable of being at any one of a plurality of locations on said graphical iconic representation and wherein said selecting from said graphical iconic representation comprises positioning a cursor on said graphical iconic representation; and
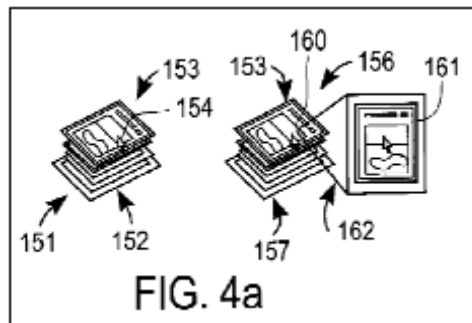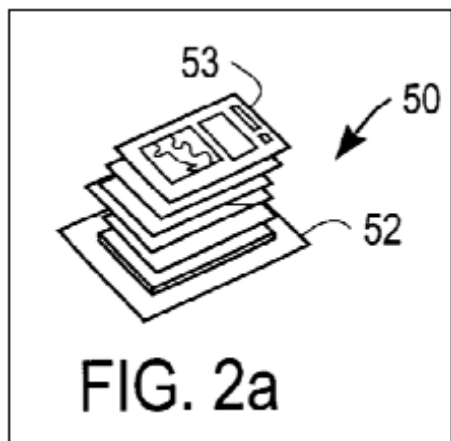>
> *displaying in series a second indicia of a second document and a third indicia of a third document* by positioning said cursor first on a second position on said

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graphical iconic representation next on a third position on said graphical iconic representation.

Piles patent at claim 1 (emphasis added to highlight the limitations specifically discussed in this declaration).

10.   I understand that the Court has adopted Apple's proposed construction of the phrase "a graphical iconic representation of a collection of . . .documents" as "a collection of two or more document icons displayed together." I further understand that Apple's proffered construction for this term was based, in part, on the fact that document icons are "displayed together" in a "pile" or stack.

11.   Furthermore, it is my opinion that one of ordinary skill in the art would understand that "displayed together" means that the document icons are displayed together in a "pile" or stack in the context of the Piles patent, the '724 patent, and the associated prosecution histories noted above. Specifically, the user interface of the Piles patent displays "piles" using a graphical iconic representation of a stack of documents. In fact, the only disclosure in the Piles patent of a collection of documents that can display indicia in series is in a pile or stack. The following figures are representative of the piles or stacks disclosed in the Piles patent, and were cited by Apple in support of its proposed construction of the term "a graphical iconic representation of a collection of . . .documents" as "a collection of two or more document icons displayed together":

FIG. 2a

FIG. 4a

12.   I understand that the Court has not yet issued a final Claim Construction Order in this case. As noted, I have reviewed the Preliminary CC Order. It is my understanding that the Preliminary CC Order is preliminary in nature, and I reserve the right to amend or supplement my opinion in the event that the Court's Claim Construction Order differs in substance from the Preliminary CC Order as it relates to the Piles patent.

13.   As noted above, I have reviewed the Piles patent and its prosecution file history, as well as the file history of the parent to the Piles patent, the '724 patent. Claim 84 of the parent application to the Piles patent recites:

> wherein said selecting from said graphical iconic representation comprises positioning a cursor on said graphical icon representation; and
>
> ***displaying in series a second indicia of a second document and a third indicia of a third document*** by positioning said cursor first on a second position on said graphical iconic representation next on a third position on said graphical iconic representation.

APMW0025546 (emphasis added to show correlation with the last element of independent claims 1, 5 and 9 of the Piles patent).

14.   During prosecution of the parent application to the Piles patent, the USPTO Board of Patent Appeals and Interferences considered arguments made by both Apple and the USPTO Examiner (724 FH 398-399 (APMW0025709-710)) and found that Nicol and Levine do not

disclose the claimed browsing functionality of application claim 84:

> With respect to claim 84, it calls for "displaying in series a second indicia … and a third indicia … representation" (claim 84, lines 4 to 7). We have reviewed the Examiner's position . . . and find that the Examiner has not established a prima facie case to reject this claim.

724 FH 399 (APMW0025710).

V. THE ASSERTED CLAIMS OF THE PILES PATENT ARE NOT INVALID OVER NICOL AND/OR LEVINE

15.   It is my opinion that claims 1-12 of the Piles patent are not obvious over Nicol in view of Levine.

16.   Levine does not disclose the "displaying in series" of different indicia based on the selection of different document icons in "a collection of two or more document icons displayed together," as required by the Court's constructions of independent claims 1, 5 and 9. Instead, Levine discloses using an image of a stack of document representations (called "stamps" in Levine) to represent a collection of documents. *E.g.*, Levine at Fig. 3. However, the stacks in Levine are "dumb" because only the top document on the stack can be viewed. Furthermore, the only way in which the top document can be viewed is "full screen." *E.g.*, Levine at Fig. 3, 4:50-55, 12:45-53. "[S]election of the top stamp **75** of the stack provides a full screen view of the associated document. The stamp **75** on top of the aligned stack **70** is the only stamp in that stack which may be selected and/or removed from the aligned stack[.]" *Id*. at 12:49-53. In this way, Levine does not disclose the display in series of indicia for each document in a stack, as required by the independent claims of the Piles patent.

17.   As noted, the Board of Patent Appeals and Interferences accepted Apple's distinction of Levine in this regard. For example, Apple distinguished Levine during prosecution of the parent application to the Piles patent as follows:

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> In many ways, the Levine system with its stack of stamps represents nothing more than a "dumb" collection of documents without the features of the present invention. . . . [T]here is no disclosure or suggestion in Levine that any of the documents in a collection of documents may be viewed by displaying an indicia of the document. Rather, in Levine, only the document which is the top stamp on the top of a stack can be viewed in a full screen mode by selecting it.
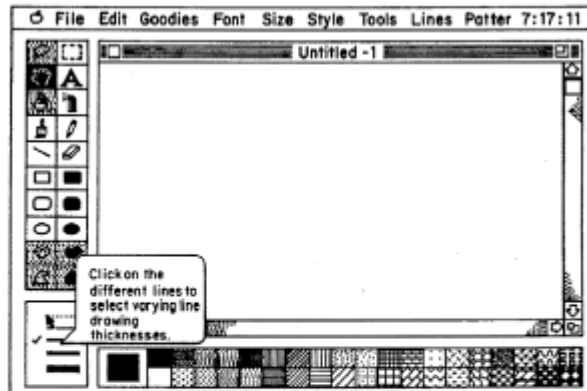
724 FH 179 (APMW0025490).

18.   Nicol also does not disclose the display of different indicia based on selecting different positions on "a collection of two or more document icons displayed together," for a couple of reasons. Thus, even if Nicol was combined with Levine, the asserted claims of the Piles patent would not be rendered obvious.
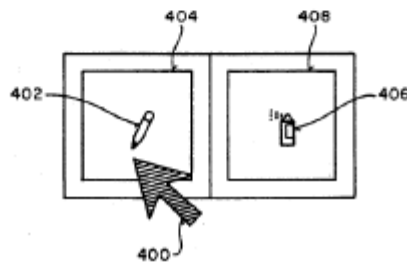
19.   First, Nicol does not disclose "a collection of two or more document icons displayed together." As discussed above, the term "displayed together" means that the document icons are displayed together in a stack or pile in the context of the Piles patent. Nicol does not display document icons, let alone document icons in a pile or stack. Instead, Nicol discloses the separate display of individual icons that represent tasks or commands:

FIG _ 2

Click on the different lines to select varying line drawing thicknesses.

FIG _ 3

See Nicol, at Figs. 2 and 3, 3:27-30, 7:15-20.

20.   Second, Nicol does not disclose "indicia" of documents as that term is defined by the specification of the Piles patent. A person of ordinary skill in the art would understand the Piles patent to define "indicia" as an item "indicating the content of the document, thereby providing the user with information concerning what the representation represents (i.e. ***what is contained within the document***)." Piles patent, at 7:10-14 (emphasis added). The Piles patent further explains that examples of "indicia" include "the first page of the document" (*id*.), a "full-size reproduction of the document" (*id*. at 12:67-13:2), the size of the document (*id*. at Fig. 4e), and "the most characteristic words" in the document (*id*. at 10:50-55). In contrast, Nicol discloses icons that represent functions or commands. Nicol, at 3:27-30, 7:15-20. When an icon

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in Nicol is selected by a user, help information from a stored database of help messages explains the function performed by the command that is represented by the icon. *Id.* at 2:15-31, 4:36-42, 6:23-28, 8:2-11 and Fig. 2. As such, Nicol cannot teach the display of "indicia" of documents because it does not disclose the display of document contents.

21.   MWT's expert, Dr. Levy, admits that Nicol does not disclose "document icons," but argues that Levine's alleged disclosure of a "graphical document collection" provides this claim element. Levy Decl. at ¶ 22. However, as described above, Nicol does not disclose "indicia" of documents. Therefore, moving a cursor along the icons of Levine in the layout disclosed by Nicol would not display a series of "indicia" of documents as required by the claim language of the Piles patent. Even assuming therefore, for the sake of argument, that Nicol and Levine disclose "a collection of two or more document icons displayed together," their combination would not render the asserted claims of the Piles patent obvious because Nicol does not display "indicia" of documents.

VI.   ONE OF ORDINARY SKILL IN THE ART WOULD NOT BE MOTIVATED TO COMBINE NICOL WITH LEVINE

22.   One of ordinary skill in the art would have no reason to combine the Levine and Nicol patents. Neither Nicol nor Levine would direct one of ordinary skill in the art to consider the other reference and both involve disparate subject matter. Specifically, Nicol and Levine are directed to different applications. Levine describes an apparatus for manipulating documents in a data processing system. In contrast, Nicol describes a method and apparatus for providing help messages to computer users. Levine does not even remotely address the display of help messages associated with commands represented by icons.

23.   Furthermore, Nicol and Levine are inconsistent, such that the references themselves dissuade combination. For example, Nicol teaches that when a visible icon is

selected, a help message is displayed "so as to not overlap the icon about which more help is requested." Nicol, at 2:25-30. In contrast, Levine teaches that when a fully-visible document stamp is selected, "a full screen view of the document represented by the stamp" is provided. Levine, at 12:28-36, 11:47-49. Furthermore, Nicol teaches that a help message about an icon is displayed until the cursor is moved off of the icon, while Levine teaches that the full screen view completely obscures the icon that is selected. In this way, Nicol and Levine are technically inconsistent, such that one of ordinary skill in the art would not be motivated to combine Nicol with Levine.

VII. LONG-FELT NEED FOR AN IMPROVEMENT TO THE HIERARCHICAL AND FLAT FILE SYSTEMS

24. It is my opinion that the new "piles" metaphor disclosed in the Piles patent for organizing and searching for documents addressed a long-felt, but unmet, need in the computing industry for an improvement to the existing flat file and hierarchical approaches to document organization.

25. When space is limited, most people are naturally inclined to search for or devise ways to more efficiently store items that they must store in that space. To illustrate the conundrum often faced when addressing document storage, consider an office desktop. People often keep items on their desktop for easy access. When the number of documents being accessed becomes large, the desktop can become cluttered.

26. As mentioned in the '724 patent (the parent to the Piles patent), computer systems for organizing information in the mid-1990s typically fell into two types of file systems: flat file systems and hierarchical file systems. These file systems were often implemented as part of the operating system of the computer system and were intended to allow the user to organize information in a manner desired by the user.

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27.   In a flat file system, the computer stores all files (e.g., documents) at the same level, such that the user when examining these files sees all files at this level. Thus, a flat file system is similar to a desk where all documents on the desk are spread out, with none in any folders or other containers. Such a file system becomes increasingly cumbersome as the number of documents grows.

28.   Hierarchical filing systems on computers attempt to improve on flat file systems by providing a hierarchy of folders or subdirectories within which the user may store documents. In a hierarchical file system, the user can file a document into a folder that may itself be within another folder, or, more generally, within a hierarchically-nested set of folders. One way of looking for any documents within a first folder involves opening the first folder after opening the second folder that contains the first folder (and, similarly, opening in sequence any folders within which the second folder was nested).

29.   As the '724 patent points out, this hierarchical structure forces a computer user to be extremely organized in filing information. If the user has difficulty in filing documents because of the difficulty in deciding the proper categories for the documents, then the user may store the documents in the highest directory of the hierarchy. As more and more documents are stored in the highest directory, a bewildering clutter of documents may appear in that highest directory, which then makes the system more like a flat file system. The '724 patent notes several problems caused by the use of hierarchical file systems and their user interfaces, and highlights how these problems can be particularly troublesome for email.

30.   In this way, the '724 patent and Piles patent addressed a long-felt need in the computer science field to provide an improvement to the existing hierarchical and flat file systems. Specifically, the Piles patent describes an improved file-organizing interface. The

improved user interface is based on a "piles" metaphor, to facilitate organizing and browsing through files. Piles patent at 2:58-62. The user interface of the Piles patent displays "piles" using a graphical iconic representation of a stack of documents. *Id*. at 2:65-3:1, 3:13-18. In the Piles interface, a user can place a cursor over a document in a pile to preview that document in a "view cone" next to the pile. *Id*. at 3:22-25. Thus, the Piles interface allows users to browse quickly through a collection of documents (e.g., a pile) by allowing the user to scan through the collection by passing a cursor over the documents to obtain a display of an "indicia." This new approach addressed the long-felt problems of the existing systems, which were rigid and offered "little assistance in [the] often tedious task" of categorizing, filing and searching for documents. *Id*. at 2:34-42.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 22, 2010 at New York, New York.

Steven K. Feiner, Ph.D.