Specification

5. The title of the invention has not been substantially amended to be descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

6. The abstract of the disclosure is objected to because it fails to be narrative of the claimed invention. Correction is required. See MPEP § 608.01(b).

7. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

8. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

9. Claims 72-76 and 91 are objected to because of the following informalities: the cited method claims improperly depend on the system of claim 54 . Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 54-106 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not seem to have described the operation of the claimed plurality of servers, including a source server, that allows a client to request and retrieve cached a data

item through the use of a hashed identifier. Applicant is respectfully requested to indicate where support has been provided for these limitations.

In the event that the original specification does provide support for the instant claims, the examiner submits that these claims are rejected under double patenting as follows:

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 54-106 are rejected under the judicially created doctrine of double patenting over claims 1-48 of U. S. Patent No. 5,978,791 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application

which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 54-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. (Nelson), US. Patent No. 5,452,447, in view of Hamilton et al. (Hamilton), US Patent No. 5,640,564.

As to claims 54-56, Nelson substantially discloses the invention including a data processing system for caching a file server to thereby allow client users to request and retrieve files in a distributed computer system (abstract, lines 1-8 et seq). In particular, Nelson discloses a plurality of network servers (fig. 3, items 56, 58, 60, 68) including at least some cached data items from a source server (see fig. 1, items 28, 30; abstract, lines 8-15, et seq). Nelson further discloses the use of a hash function on a data file to thereby quickly retrieve the data file from the cache upon user's request (col.17, lines 18-41 et seq).

Nelson does not particularly detail the use of the hashing function on the data file to create an identifier, which can be utilized to retrieve the data file upon user's request. However, Hamilton discloses an analogous system wherein a hashing function is applied to a data item to thereby create an identifier, which a user can utilize to request and retrieve a corresponding data item (col. 6, lines 28-39 et seq). It would have been obvious to one of ordinary skill in the art of data processing to combine the teachings of the cited references because Hamilton's teaching would allow the users of Nelson's system to expeditiously and dynamically retrieve a file as it is updated.

As to claim 57, Hamilton discloses the correspondence between a data identifier and a data item on a server, wherein a data identifier uniquely identifies a corresponding data item (col. 6, lines 20-21 et seq).

As to claim 58, Nelson discloses the retrieval of a data item from another server, if it is not located on a given server (col. 15, lines 50-60 et seq).

As to claim 59, Nelson discloses the retrieval of a local copy of the data item from another server, if it is not located on a given server (col. 15, lines 23-26 et seq).

As to claim 60, Nelson discloses some data items distributed across the network as cached version of another server (col. 7, lines 29-35 et seq).

As to claim 61, Nelson discloses the resolution of a request for a particular data item based on the availability of the servers (col. 10, lines 8-24 et seq).

16. The limitations of claims 62-106 have already been discussed in the in the rejection of claims 54-61 above . They are therefore rejected on similar grounds.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see attached PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean R. Homere whose telephone number is (703)-308-6647. The examiner can normally be reached on Monday-Friday from 08:30 a.m.-5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on Monday-Friday from 8:00 a.m. to 3:30 p.m. at (703)-305-9790.

Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 20231, **or faxed to:** (703) 308-9051, (for formal communications intended for entry), **Or:** (703) 305-9731 (for informal or draft communications, please label "PROPOSED" or "DRAFT"). Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist). The facsimile phone number for this group is (703) 308-5357.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Jean R. Homere

Jean R. Homere
Primary Examiner, A.U. 2177
June 01, 2001

JEAN R. HOMERE
PRIMARY EXAMINER

FORM PTO-892	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NO.	
NOTICE OF REFERENCES CITED		09/283,160	2177		
		APPLICANT(S) Farber et al.			

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	A	6,134,603	10/2000	Jones et al.	709	330	
	B	6,006,018	12/1999	Burnett et al.	395	200.49	
	C	5,809,494	9/1998	Nguyen	707	1	
	D	5,640,564	6/1997	Hamilton et al.	709	303	
	E	5,452,447	9/1995	Nelson et al.	707	205	
	F	5,202,982	4/1993	Gramlich et al.	707	2	
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS
	L						
	M						
	N						
	O						
	P						
	Q						

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	R	
	S	
	T	
	U	

EXAMINER	DATE	
Jean R. Homere	June 1, 2001	Form892ccs2106b

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05(a).)

Form PTO 948 (Rev. 8-98) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 09/283,160

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

The drawing(s) filed (insert date) 4/1/99 are:

A. ☐ approved by the Draftsperson under 37 CFR 1.84 or 1.152.

B. ☒ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be sumitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:
   Black ink. Color.
   ____ Color drawings are not acceptable until petiton is granted. Fig(s) _____
   ____ Pencil and non black ink not permitted. Fig(s) _____
2. PHOTOGRAPHS. 37 CFR 1.84 (b)
   ____ 1 full-tone set is required. Fig(s) _____
   ____ Photographs not properly mounted (must use brystol board or photographic double-weight paper). Fig(s) _____
   ____ Foor quality (half-tone). Fig(s) _____
3. TYPE OF PAPER. 37 CFR 1.84(e)
   ____ Paper not flexible, strong, white, and durable. Fig(s) _____
   ____ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) _____
   ____ Mylar, velum paper is not acceptable (too thin). Fig(s) _____
4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:
   ____ 21.0 cm by 29.7 cm (DIN size A4)
   ____ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
   ____ All drawing sheets not the same size. Sheet(s) _____
   ____ Drawings sheets not an acceptable size. Fig(s) _____
5. MARGINS. 37 CFR 1.84(g): Acceptable margins:

   Top 2.5 cm Left 2.5cm Right 1.5 cm Bottom 1.0 cm
   SIZE: A4 Size

   Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm
   SIZE: 8 1/2 x 11

   Margins not acceptable. Fig(s) 1-9, 10B, 12B, 13-19, 21-26.
   ~~____~~ Top (T) ~~____~~ Left (L)
   ____ Right (R) ____ Bottom (B)
6. VIEWS. 37 CFR 1.84(h)
   REMINDER: Specification may require revision to correspond to drawing changes.
   Partial views. 37 CFR 1.84(h)(2)
   ____ Brackets needed to show figure as one entity. Fig(s) _____
   ____ Views not labeled separately or properly. Fig(s) _____
   ____ Enlarged view not labeled separetely or properly. Fig(s) _____
7. SECTIONAL VIEWS. 37 CFR 1.84 (h)(3)
   ____ Hatching not indicated for sectional portions of an object. Fig(s) _____
   ____ Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____
8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
   ____ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) _____
9. SCALE. 37 CFR 1.84(k)
   ____ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) _____
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(i)
    ____ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Fig(s) _____
11. SHADING. 37 CFR 1.84(m)
    ____ Solid black areas pale. Fig(s) _____
    ____ Solid black shading not permitted. Fig(s) _____
    ____ Shade lines, pale, rough and blurred. Fig(s) _____
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
    ____ Numbers and reference characters not plain and legible. Fig(s) _____
    ____ Figure legends are poor. Fig(s) _____
    ____ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) _____
    ____ English alphabet not used. 37 CFR 1.84(p)(2) Figs _____
    ____ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____
13. LEAD LINES. 37 CFR 1.84(q)
    ____ Lead lines cross each other. Fig(s) _____
    ____ Lead lines missing. Fig(s) _____
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
    ____ Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
    ____ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____
16. CORRECTIONS. 37 CFR 1.84(w)
    ____ Corrections not made from prior PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152
    ____ Surface shading shown not appropriate. Fig(s) _____
    ____ Solid black shading not used for color contrast. Fig(s) _____

COMMENTS

DATE 5/10/99 TELEPHON

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities--37 CFR 1.85

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR 1.84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1.136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Processing Branch.

2. Timing for Corrections

Applicant is required to submit **acceptable** corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37). If a correction is determined to be unacceptable by the Office, applicant must arrange to have acceptable corrections resubmitted within the original three-month period to avoid the necessity of obtaining an extension of time and paying the extension fee. Therefore, applicant should file corrected drawings as soon a possible.

Failure to take corrective action within set (or extended) period will result in **ABANDONMENT** of the Application.

3. Corrections other than Informalities Noted by the Drawing Review Branch on the Form PTO-948

All changes to the drawings, other than informalities noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

DEPT OF COMMERCE
PATENT
AND
TRADEMARK
OFFICE
PTO
2121 CRYSTAL DRIVE
ARLINGTON, VA 22202

facsimile transmittal

To: Brian Siritzky Fax: (703) 905-2500

From: Jean R. Homere Date: 8/17/01

Re: 09/283,166 Pages: 2

CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

CONFIDENTIAL

Interview Summary

Application No.	Applicant(s)	
09/283,160	Farber et al.	
Examiner	Group Art Unit	
Jean R. Homere	2177	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Jean R. Homere* (3) _____

(2) *Brian Siritzky, Reg. No. 37,497* (4) _____

Date of Interview *Aug 13, 2001*

Type: a) ☐ Telephonic b) ☐ Video Conference
c) ☒ Personal [copy is given to 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No. If yes, brief description:

Claim(s) discussed: *54*

Identification of prior art discussed:
Hamilton (USP No. 5,640,564) and Nelson (USP No. 5,452,447)

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments:

The applicant's representative pointed to various portions of the specification in support of the claimed language, and to overcome the 35 USC 112 rejection. The examiner informed the representative that so long as the cited portions of the specification are made of record, they are likely to be sufficient to overcome the 112 rejection. Regarding the prior art rejection, the representative argued that the prior art of record does not detail data items as being files that are content-sensitive. In response, the examiner pointed out that the claimed data items encompass both object identifiers and actual files. Consequently, the representative faxed in an amemded claim to limit the language to data files that comprise the content of the files. The examiner, then informed the representative that the proposed amendment is likely to overcome the prior art of record. However, further, consideration might be deemed necessary.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i) ☐ It is not necessary for applicant to provide a separate record of the substance of the interview (if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

JEAN R. HOMERE
PRIMARY EXAMINER
ART UNIT 2177

#8c
8/28/01
AW.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of

FARBER et al.

Group Art Unit: 2177

Examiner: Homere, Jean R.

Appln. No. 09/283,160

Filed: April 1, 1999

EXPEDITED EXAMINATION

For: **IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA** (As Amended)

* * * * *

August 22, 2001

RESPONSE

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Please amend this application as follows:

IN THE CLAIMS:

Please amend the claims as follows (the claim amendments are shown in detail in the attached appendix):

1

54. (Amended) In a system in which a set of data files are distributed across a network of servers, at least some of the data files being cached versions of data files from a source server, wherein the source server is distinct from the servers in the network, a content delivery method comprising:

C1

determining a data identifier for a particular data file on the source server, the data identifier being determined using a given function of the data, wherein said data used by the

given function to determine the data identifier comprises the contents of the particular data file; and

responsive to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the data identifier of the requested data item.

9
55. (Amended) In a system in which a set of data files are distributed across a network of servers, some of the data files being cached from a source server distinct from the servers in the network, a content delivery method comprising:

determining a data identifier for a particular data file on the source server, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of the particular data file; and

responsive to a request for the particular data file, the request including at least the data identifier of the particular data file, causing a copy of the particular data file to be provided from a given one of the servers of the network of servers.

10
56. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers;

determining a data identifier for a particular data file, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the data identifier of the particular data file.

11 10
57. (Amended) A method as in claim 56 further comprising:

determining whether the data identifier corresponds to a data identifier of any data file present on the given server.

11
12 58. (Amended) A method as in claim 57 further comprising:

based on said determining, if the data identifier does not correspond to a data file present on the given server, locating the particular data file from another server.

12
13 59. (Amended) A method as in claim 58 further comprising:

obtaining, on the given server, a local copy of the particular data file, from the other server.

10
14 60. (Amended) A method as in claim 56 wherein at least some of the data files distributed across the network of servers are cached versions of data files from another server, distinct from the network of servers.

10
15 61. (Amended) A method as in claim 56 further comprising:

resolving the request for the particular data file based on a measure of availability of at least one of the servers.

CA

15
16 62. (Amended) A method as in claim 61 wherein the measure of availability is based on one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of a reliability of a connection to the server.

17 10
63. (Amended) A method as in claim 56 wherein the data file is a compound data file made up of various component data files, the method further comprising:

for each component data file of at least some of the component data files:

(a) determining a data identifier for the component data file, the data identifier for the component file determined using the given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of the component data file; and

(b) providing the component data file from a given one of the servers of the network of servers.

18
64. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers;

for a particular data file having a particular name specifying a location in the network at which the data file may be located, determining another name for the particular data file, the other name including a data identifier determined using a given function of the data, where said data used by the given function comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including the other name of the particular data file, providing the particular data file from a given one of the servers of the network of servers.

19 18
65. (Amended) A method as in claim 64 wherein at least some of the data files are cached versions of data files from another server which is distinct from the network of servers.

20 18
66. (Amended) A method as in claim 64 further comprising:

resolving the request for the particular data file based on a measure of availability of at least one of the servers.

21 20
67. (Amended) A method as in claim 66 wherein the measure of availability is based on one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of a reliability of a connection to the server.

22 15
68. (Amended) A method as in claim 64 wherein the particular data file is a compound data file comprising various component data files, the method further comprising:

for at least one component data file:

(a) determining a data identifier for the component data file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of the component data file; and

(b) providing the component data file from a given one of the servers of the network of servers.

23

69. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers, at least some of the data files being cached versions of data files from another server, distinct from the network of servers;

determining a data identifier for a particular data file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers.

24

70. (Amended) A content delivery method, comprising:

causing a set of data files to be distributed across a network of servers, at least some of the data files being cached versions of data files from another server distinct from the network of servers;

CA

determining a data identifier for a particular data file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, causing the particular data file to be provided from a given one of the servers of the network of servers.

25

71. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers, the network of servers being organized into a set of regions;

determining a data identifier for a particular data file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of the data file;

in response to a client request for the particular data file, the request including at least the data identifier of the particular data file, providing the client with the particular data file from a given one of the servers of the network of servers within the region.

2 1

72. (Amended) A method as in claim 54 wherein the given function is a message digest function or a hash function.

3 2
73. (Amended) A method as in claim 72 wherein the given function is selected from the functions: MD4, MD5, and SHA.

4 1
74. (Amended) A method as in claim 54 wherein the given function randomly distributes its outputs.

5 1
75. (Amended) A method as in claim 54 wherein, for a particular data file, the given function produces a substantially unique value based on the data comprising the data file.

6 1
76. (Amended) A method as in claim 54 wherein a data file may comprise a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

C1 26
77. (Amended) In a system in which a set of data files are distributed across a network of servers, at least some of the data files being cached versions of data files from a source server distinct from the network of servers, a content delivery method comprising:

responsive to a request for a particular data file, the request including at least a data identifier of the particular data file, wherein the data identifier is determined by applying a message digest function MD5 to the data, wherein said data used by the MD5 function to determine the data identifier is the contents of the particular data file, providing the particular data file from a given one of the servers of the network of servers,

wherein a data file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

27
78. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers, at least some of the data files being cached versions of data files from another server distinct from the network of servers;

determining a data identifier for a particular data file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of the particular data file, and wherein the given function randomly distributes its outputs; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the data identifier of the particular data item.

28
79. (Amended) A method as in claim 78 further comprising:

maintaining accounting information relating to the data files; and

using the accounting information as a basis for a value-based accounting system in which charges are based on an identity of the data files.

29 28
80. (Amended) A method as in claim 79 wherein the maintaining of accounting information includes at least some of:

(a) tracking which data files have been stored on a system; and

(b) tracking which data files have been transmitted from a server.

30 28
81. (Amended) A method as in claim 79 further comprising:

ensuring that a data file is not used by an unauthorized party.

31
82. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers;

determining an MD5 hash of the contents of a particular data file; and

in response to a request for the particular data file, the request including at least the MD5 hash of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the MD5 hash of the particular data file.

32 31
83. (Amended) A method as in claim 82 further comprising:

resolving the request for the particular data file based on a measure of availability of at least one of the servers.

33 32
84. (Amended) A method as in claim 83 wherein the measure of availability for a server is based on one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of reliability of a connection to the server.

34

~~85~~. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers;

for a particular data file having a particular data identifier specifying a location in the network at which the particular data file may be located, determining another data identifier for the particular data file, the other data identifier including a data identifier determined using a message digest function of the contents of the particular data file;

in response to a request for the particular data file, the request including the other data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the other data identifier which was determined using the message digest function.

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~~86~~. (Amended) A content delivery method, comprising:

distributing a set of data files across a network of servers, at least some of the data files being cached versions of data files from another server, said other server being distinct from the network of servers;

determining a data identifier for a particular data file, the data identifier including a hash of the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers.

36

~~87~~. (Amended) A method of delivering a data file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:

storing the data file is on a first server in the network and storing copies of the data file on a set of servers in the network distinct from the first server; and

responsive to a client request for the data file, the request including a hash of the contents of the data file, causing the data file to be provided to the client.

37 36
88. (Amended) A method as in claim 87 wherein the data file has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:

associating the contextual name of the data file with the hash of the contents of the data file.

38
89. (Amended) A method of delivering a data file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:

storing the data file is on a first server and storing copies of the data file on a set of servers distinct from the first server; and

responsive to a client request for the data file, the request including a value determined as a given function of the contents of the data file, providing the data file to the client.

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39 38
90. (Amended) A method as in claim 89 wherein the data file has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:

associating the contextual name of the data file with the value determined as the given function of the data in the data file.

7 1
91. (Amended) A method as in claim 54

wherein certain processors in the network communicate with each other using a TCP/IP communication protocol.

40
92. (Amended) A method of delivering a data file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data file on the network and wherein ordinarily the key is a name or address for the data file, the method comprising:

storing some data files on a first server in the network and storing copies of some of the data files on a set of cache servers distinct from the first server;

determining a different cache key from the ordinarily used cache key, the different cache key being a function of the contents of the data it represents; and

responsive to a client request for the data file, the request including the different cache key for the data file, providing the data file to the client.

41 40
93. (Amended) A method as in claim 92 wherein the function is a message digest function or a hash function.

42 41
94. (Amended) A method as in claim 93 wherein the function is selected from the functions: MD4, MD5, and SHA.

43 40
95. (Amended) A method as in claim 92 wherein the function randomly distributes its outputs.

C1 44
96. (Amended) A framework operative in a computer network in which users of client processors connect to a content server, the framework comprising:

a set of content servers, distinct from the content provider server, for hosting at least some of the data files that are normally hosted by the content provider server;

a mechanism constructed and adapted to determine an identifier for a data file as a given function of the contents of a data file in the network;

wherein, in response to requests for a data file, generated by one of the client machines the request including an identifier based on the given function of the contents of the particular data file, the particular data file is served from one of the content servers.

45 44
97. (Amended) A framework as in claim 96 wherein the given function is a message digest function or a hash function.

46 45
98. (Amended) A framework as in claim 97 wherein the given function is selected from the functions: MD4, MD5, and SHA.

47 44
99. (Amended) A framework as in claim 96 wherein the given function randomly distributes its outputs.

48 44
100. (Amended) A framework as in claim 96 wherein processors in the network communicate with each other using a TCP/IP communication protocol.

49 44

101. (Amended) A framework as in claim 96 wherein the data file has a contextual name, the framework further comprising:

a mechanism constructed and adapted to associate the contextual name of the data file with the identifier for the data file.

50 49

102. (Amended) A framework as in claim 101 wherein the contextual name of the data file comprises a pathname including a processor name and a file name.

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103. (Amended) In a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data file on the network and wherein ordinarily the key is a name or address for the data file, a method of delivering a data file:

C1

storing some data files on a first server in the network and storing copies of some of the data files from the first server on a set of cache servers distinct from the first server;

for a particular data file, determining a different cache key from the ordinarily used cache key for the data file, the different cache key being determined using a message digest function MD5 of the data, wherein said data used by the MD5 function comprises the contents of the particular data file; and

responsive to a client request for the particular data file, the request including the different cache key for the data file, causing the particular data file to be provided to the client,

wherein the data file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

53

104. (Amended) A framework operative in a computer network in which users of client processors connect to a content server, wherein processors in the network communicate with each other using a TCP/IP communication protocol, the framework comprising:

a mechanism constructed and adapted to determine a given function of a data file in the network, the given function being a message digest function or a hash function;

a set of content servers, distinct from the content provider server, for hosting at least some of the data files that are normally hosted by the content provider server;

wherein, in response to requests for a data file, generated by one of the client machines the request including an identifier based on the given function of the contents of the particular data file, the particular data file is served from one of the content servers.

51 44
105. (Amended) A framework as in claim 96 wherein a data file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

54
106. (Amended) A content delivery method in a network in which at least some processors in the network communicate with each other using a TCP/IP communication protocol, the method comprising:

C1 for a particular data file having a particular name specifying a location in the network at which the data file may be located, determining another name for the particular data file, the other name including a data identifier determined using message digest function MD5 of the data, wherein said data used by the MD5 function comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including the other name of the particular data file, causing the particular data file to be provided from a given one of the servers of the network of servers,

wherein the data file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

Please add the following new claims:

C2 --107. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, at least some of the files being cached versions of files from a source server distinct from the network of servers, the content delivery method comprising:

for a particular file, determining a name using a given function of the data, said data being the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, causing the particular file to be provided from a given one of the servers of the network of servers.

108. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, at least some of the files being cached versions of files from a source server distinct from the servers in the network, wherein data in a file in the system may represent a digital message, a digital image, a video signal or an audio signal, the content delivery method comprising:

determining a name for a particular file, the name being determined using an MD5 function of the data, said data being the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the determined name.

109. (New) A method, in a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a file on the network and wherein ordinarily the key is a name or address for the file, the method comprising:

storing some files on a first server in the network and storing copies of some of the files from the first server on a set of cache servers distinct from the first server;

for a particular file, determining a different cache key from the ordinarily used cache key for the file, the different cache key being determined using a message function MD5 of the data, wherein said data used by the MD5 function comprises the contents of the particular file; and

responsive to a client request for the particular file, the request including the different cache key for the file, causing the particular file to be provided to the client,

wherein the data in the file may represent a digital message, a digital image, a video signal or an audio signal.

110. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, the content delivery method comprising:

for a particular file, the contents of said file representing a digital image, determining a name for the particular file, wherein the name is determined using a given function of the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular file from a given one of the servers of the network of servers.

111. (New) A content delivery method comprising:

causing a plurality of files to be distributed across a network of servers, at least some of the files being cached versions of files from a source server which is distinct from the network of servers;

for a particular file, determining a name, the name being determined using a given function of the data, said data used by said function being data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, causing the particular file to be provided from a given one of the servers of the network of servers.

112. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, at least some of the files being cached versions of files from a source server which is distinct from the network of servers, the content delivery method comprising:

determining a name for a particular file, the name being determined using a given function of the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular file from a given one of the servers of the network of servers,

wherein the contents of the particular file may represent a digital message, a digital image, a video signal or an audio signal.

113. (New) A method, in a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a file on the network, the method comprising:

storing some files on a first server in the network and storing copies of some of the files from the first server on a set of cache servers distinct from the first server;

for a particular file, determining a different cache key from an ordinarily used cache key for the file, the different cache key being determined using a message function MD5 of the data, wherein said data comprises the contents of the particular file; and

responsive to a client request for the particular file, the request including the different cache key for the file, causing the particular file to be provided to the client,

wherein the contents of the file may represent: a page in memory, a digital message, a digital image, a video signal or an audio signal.

114. (New) A content delivery method comprising:

distributing a set of files from a first server across a network of servers distinct from the first server;

applying an MD5 function to the contents of a particular file to obtain a True Name for the file;

in response to a request for the particular file, the request including at least the True Name of the particular file, causing the particular file to be provided from a given one of the servers of the network of servers, wherein the request for the particular file is resolved based on a measure of availability of at least one of the servers.

115. (New) A method as in claim 114 wherein the measure of availability for a server is based on at least one of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of reliability of a connection to the server.

116. (New) A content delivery method comprising:

distributing a plurality of files across a network of servers, at least some of the files being cached versions of files from a source server distinct from the servers in the network;

for a particular file, determining a True Name using a given function of the data which comprises the contents of the particular file;

obtaining a request for the particular file, the request including at least the True Name of the particular file; and

responsive to the request, causing the particular file to be provided from one of the servers of the network of servers.

117. (New) A content delivery method, comprising:

distributing files across a network of servers;

for a particular file having a contextual name specifying a location in the network at which the file may be located, determining another name for the particular file, the other name including a data identifier determined using a given function of the data, where said data used by the given function comprises the contents of the particular file;

obtaining a request for the particular file, the request including the contextual name and the other name of the particular file,

responsive to the request, providing the particular file from one of the servers of the network of servers, said providing being based on the other name of the particular item.

118. (New) A content delivery method, comprising:

distributing a set of files across a network of servers;

for a particular file representing a digital image, the file having a contextual name specifying a location in the network at which the file may be located, determining another name for the particular file, the other name including a True Name for the file which was determined using a message digest function of the data, where said data used by the given function comprises the contents of the particular file;

obtaining a request for the particular file, the request including the contextual name and the True Name of the particular file; and

responsive to the request, providing the particular file from one of the servers of the network of servers, said providing being based on the True Name of the particular item.

119. (New) A method comprising:

applying an MD5 function to the contents of an image file containing data representing a digital image to obtain a True Name for the file;

distributing copies of the image file from a first server across a network of servers distinct from the first server;

obtaining a request for the image file, the request including at least the True Name of the file; and

responsive to the request, causing a copy of the image file to be provided from one of the servers of the network of servers.

120. (New) A method as in claim 54 wherein said data identifier for said particular data file, as determined using said given function, will change when the particular data file is modified.

IN THE TITLE:

Please replace the title in its entirety with the following:

--IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA--

IN THE ABSTRACT OF THE DISCLOSURE

Please replace the Abstract of the Disclosure with the attached new Abstract

REMARKS

By this Amendment, claims 54-106 have been amended and new claims 107 to 120 have been added. In addition, a new Abstract has been provided and the title has been replaced. The claims were amended to clarify their scope. No new matter has been added by these amendments.

Applicants thank the Examiner for the abundant courtesies extended their representative, Brian Siritzky, during the personal interview and various telephone discussions. The Examiner requested that various arguments be made of record. Applicants include herein the various arguments made to the Examiner in the interviews to deal with the various rejections and objections. In addition, the claims have been amended as discussed with the Examiner and for further clarity. Applicants thank the Examiner for his helpful suggestions.

DRAWINGS

The Examiner objected to the drawings under 37 CFR 1.83(a), stating that the drawings must show "the plurality of servers, including a source server, that allows a client to request and retrieve a cached data item through a hashed identifier."

Applicants respectfully submit that the drawings, as filed, do comply with 37 CFR 1.83(a) and do show all of the claimed features. For example, Figure 1 of the application, reproduced below, shows a number of client and server processors, as claimed.

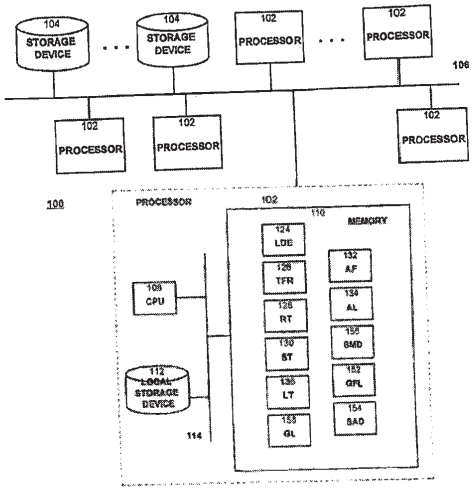

Figure 1 of 09/283,160 application

As noted in the instant application, "FIGURE 1 depicts a typical data processing system in which a preferred embodiment of the present invention operates." *Specification*, pg. 7, lines 31-33. In describing the embodiment shown in Figure 1, the application makes clear that some of the network of processors shown in the embodiment of Figure 1 may act as servers, others as clients. The application further states:

> . . . a typical data processing system 100, . . . with reference to FIGURE 1 includes one or more processors (or computers) 102 and various storage devices 104 connected in some way. . .
>
> Each processor 102 includes a CPU 108, a memory 110 and one or more local storage devices 112. . . .
>
> In a data processing system 100, wherein more than one processor 102 is used, that is, in a multiprocessor system, the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . .
>
> . . . in a multiprocessor data processing system 100, some or all of the processors 102 may be disconnected from the network of processors for periods of time.

Specification, pg. 8, lines 8 to pg. 9, line 3.

Any one (or more than one) of the processors shown in Figure 1 can act as a source processor. For example, note that the memory 110 in a typical processor 102 may include a source table 130. "The source table (ST) 130 is a list of the sources of True Files . . . [and] includes . . . remote processors." *Specification,* pg. 10, lines 9-12, emphasis added. "A source table 130 identifies a source location for True Files." *Spec.* pg. 18, lines 10-11. The "terms 'True Name', 'data identity' and 'data identifier' refer to the substantially unique data identifier for a particular data item. The term 'True File' refers to the actual file, segment, or data item identified by a True Name." *Specification,* pg. 10, lines 24-28. The True Name of a data item may be determined using known hash "functions . . . MD4, MD5, and SHA" *Specification*, pg. 23, lines 11-12.

Figure 6 depicts the source records in a source table, and the meaning of those records, in some embodiments, is summarized in the table on page 19 of the specification (reproduced here).

Field	Description
Source ID	internal identifier used to identify a particular source.
Source type	type of source location: Removable Storage Volume Local Region Cache Server Mirror Group Server Cooperative Server Publishing Server Client
Source rights	includes information about the rights of this processor, such as whether it can ask the local processor to store data items for it.
Source availability	measurement of the bandwidth, cost, and reliability of the connection to this source of True Files. The availability is used to select from among several possible sources.
Source location	information on how the local processor is to access the source. This may be, for example, the name of a removable storage volume, or the processor ID and region path of a region on a remote processor.

The table shows that the source of a data item could be of various types (see "source type") including Cache Server, Mirror Group Server, Cooperative Server, Publishing Server and Client. Note further that the source location specified in the table "may be, for example, . . . the processor ID and region path of a region on a remote processor." (*Specification*, pg. 19, line 15 et seq.)

Thus, it is clearly contemplated by the present application, as filed, that various of the processors can act as source servers for data items.

The memory 110 in a typical processor may also include a so-called True File registry (TFR) 126 which "is a data store for listing actual data items which have True Names . . .. When such data items occur in the True File registry 126 they are known as True Files. True Files are identified in True File registry 126 by their True Names or identities. The table True File registry 126 also stores location . . . information about True Files." *Specification*, pg. 14, line 33 to pg. 15, line 3.

> . . . the term "location", with respect to a data processing system 100, refers to any of a particular processor 102 in the system, a memory of a particular processor, a storage device, a removable storage medium (such as a floppy disk or compact disk), or any other physical location in the system.

Specification, pg. 10, lines 15-24.

"Each record of the True File registry 126 has the fields shown in the True File registry record 140 in FIG. 4." *Specification*, pg. 16, lines 14-16. Among other information, a TFR record includes "source ID(s) of zero or more sources from which this file or data item may be retrieved" *Specification*, pg. 17, lines 10-13.

Thus, applicant respectfully submits that the drawings, as originally filed, do comply with 37 CFR 1.83(a) and, accordingly, withdrawal of this objection to the drawings is respectfully requested.

The drawings were also objected to under 37 CFR 1.83(b) as being incomplete. Specifically, the Examiner stated that "a flowchart was not provided to illustrate the claimed method steps." *Paper No. 7*, item 4. Applicants respectfully submit that the application as filed, which includes the flowcharts of Figures 10(a) to 28, do show the operation of the invention sufficient "for the understanding of the subject matter sought to be patented" as required by 35 USC § 113. Further, 37 CFR 1.83(b) relates to drawing requirements of the structure related improvements of old machines. It does not refer to flowcharts for the claimed method.

However, in order to expedite prosecution, applicant will submit new flowcharts if deemed necessary by the Patent Office.

In view of the above, withdrawal of this objection to the drawings is respectfully requested.

CLAIM OBJECTIONS

The Examiner objected to claims 72-76 and 91 as improperly depending on system claim 54. Claim 54 is a method claim (Claim 54 recites "In a system . . . , a content delivery **method**."), as are claims 72-76 and 91. Accordingly, there is no informality, this objection is moot and its withdrawal is respectfully requested.

CLAIM REJECTIONS UNDER 35 USC § 112

Claims 54-106 were rejected under 35 USC § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. In particular, the Examiner states that "the specification does not seem to have described the operation of the claimed plurality of servers, including a source server, that allows a client to

retrieve a cached data item through the use a hashed identifier." *Paper No. 7*, item 11. The Examiner requested an indication of support for these limitations.

The grounds for this rejection are respectfully traversed. Applicants respectfully submit that the claims are fully supported by the application as filed in such a manner as to enable one skilled in the art to make and/or use the invention.

As a preliminary matter, applicant notes that, as recited in some of the claims, items are not necessarily retrieved, as the Examiner would have it, "through the use of a hashed identifier," but through the use of an identifier which is a hash (or some other function) of the data. That is, it is not necessarily the case that the identifier is hashed, rather it is the data item which is hashed to get the identifier. Of course, in some cases, the identifier is itself considered data and is also hashed to obtain another identifier for the data. (It is perhaps this misunderstanding and misreading of the claims that gives rise to the Examiner's prior art rejections.)

As noted above in the discussion regarding the drawings, the specification as filed clearly contemplates and fully discloses the operation of a number of processors, some acting as servers and at least one acting as a source server.

The present application describes in detail (as required by § 112), various data structures and mechanisms for implementing the claimed invention. The mechanisms, for convenience, are "grouped into the following categories: primitive mechanisms, operating system mechanisms, remote mechanisms, background mechanisms, and extended mechanisms." *Specification,* pg. 11, lines 2-5. The specification then goes on to list sixteen primitive mechanisms (pg. 11, lines 9-24), nine operating systems mechanisms (pg. 11, line 33 to pg. 12, line 4). "Remote mechanisms are used by . . . in responding to requests from other processors." *Specification*, pg. 12, lines 5-6. Nine remote mechanisms are listed (pg. 11, lines 10-18) and described in detail in the section titled "Remote Mechanisms" on page 44, line 7 to the end of page 49.

An important aspect of this invention is the so-called *True Name*—a term coined by the inventors of this invention. The "terms 'True Name', 'data identity' and 'data identifier' refer to the substantially unique data identifier for a particular data item. The term 'True File' refers to the actual file, segment, or data item identified by a True Name." *Specification,* pg. 10, lines 24-28. In the described embodiments, using the basic primitive mechanism *Calculate True Name* a "True Name is computed using a function . . . which reduces a data block . . . of arbitrary length to a relatively

small, fixed size identifier, the True Name of the data block." *Specification*, pg. 22, lines 16-18. The properties and operation of the True Name computation function, MD, are described in detail on pages 22-26 and in Figures 10(a) and 10(b). "A family of functions with the . . . properties are the so-called message digest functions . . .. These functions (or algorithms) include MD4, MD5, and SHA." *Specification*, pg. 23, lines 8-12.

Having described the various mechanisms (primitive, operating system, remote, etc.), the application then goes on to describe various operational uses of the system. For example, the application teaches:

> In operation data items can be accessed by reference to their identities (True Names) independent of their present location. The actual data item or True File corresponding to a given data identifier or True Name may reside anywhere in the system (that is, locally, remotely, offline, etc). . . . If the data item is not present locally, there are a number of ways in which it can be obtained from wherever it is present. Using the source IDs field of the True File registry table, the location(s) of copies of the True File corresponding to a given True Name can be determined. The Realize True File from Location primitive mechanism tries to make a local copy of a True File, given its True Name and the name of a source location (processor or media) that may contain the True File.

Specification, pg. 66, lines 16-32.

Thus, the application teaches accessing data items using their True Names (e.g., hashes of their contents). And it further teaches accessing data items (using their True Names) from any location and independent of the location of the data items. Further, using a data item's True Name, the data item may be obtained from one or more locations, e.g., as specified in a True File registry table. As discussed above, the True File Registry table may contain "source ID(s) of . . . sources from which this file or data item may be retrieved." *Specification*, pg. 17, liens 10-12.

The application describes, for that embodiment, using the mechanism *Realize True File from Location* to obtain the requested data item. The *Realize True File from Location* "mechanism is used to try to make a local copy of a True File, given its True Name and the name of a source location (processor or media) that may contain the True File." *Specification*, pg. 29, lines 13-16. Note that this mechanism is described in detail at pg. 29, lines 12 to pg. 30, line 5 and with reference to FIG. 15.

> . . . determine whether the location specified is a processor.
> . . ., then send a Request True File message (using the
> Request True File remote mechanism) to the remote
> processor and wait for a response. . .

Specification, pg. 29, lines 18-23.

The *Request True File* "mechanism allows a remote processor to request a copy of a True File from the local processor. It requires a True Name and responds positively by sending a True File back to the requesting processor." The operation of the *Request True File* mechanism is described in detail in the Section titled "Request True File" on pg. 46, lines 7-24.

Attached hereto is an Appendix summarizing support for the pending claims in the presently filed application. The cites in that Appendix are meant only as examples and are in no way intended to limit the invention or its scope in any manner.

As shown in the Appendix hereto, the claims are fully supported by the application as filed.

In view of the above, withdrawal of this rejection under § 112 is respectfully requested.

PRIOR ART REJECTIONS

The Examiner rejected the claims under 35 USC § 103 as being unpatentable over Nelson in view of Hamilton. The grounds for this rejection are respectfully traversed.

The claims have been amended to clarify that the identifier determined for a data identifier is context sensitive, i.e., is based on the content of the data or files. So, for example, claim 54 has been amended, *inter alia*, to recite that the identifier is "determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of the particular data file." The other claims have been similarly amended. Therefore, as presently claimed, in this invention the identifier determined for a file using a given function, i.e., its True Name, is based on the data in the file. Once determined, in operation, the True Name of a file may well be combined with other information such as the actual (contextual) name of the file.

Further as to claim 61 (also claims 66, 83), there is nothing in the prior art to teach or in any way suggest, as claimed, "resolving the request for the particular data item based on a measure of availability of at least one of the servers." The Examiner cites Nelson as supposedly disclosing "the resolution of a request for a particular data item based on the availability of the servers." Paper No. 7, pg. 8. Nelson teaches no such thing. The cited portion of Nelson merely describes how more than one client can access the same object on a server.

As to claim 62 (and claims 67, 84), there is nothing in the prior art, alone or in any proposed combination, to teach or in any way suggest, a method which includes "resolving the request for the particular data item based on a measure of availability of at least one of the servers, wherein the measure of availability comprises one or more of: (a) a measurement of bandwidth to the server; (b) a measurement of a cost of a connection to the server, and (c) a measurement of a reliability of a connection to the server."

Further as to claim 63 (and claim 68), the prior art is silent about any type of compound data items. Accordingly, the prior art does not and cannot teach or suggest a method which operates on such compound data items. Particularly, there is nothing in the prior art, alone or in any proposed combination, to teach or in any way suggest, a method which includes "for each component data item of at least some of the component data items:(a) determining a data identifier for the component data item, the data identifier determined using the given function of the data comprising the component data item; and (b) providing the component data item from a given one of the servers of the network of servers."

Further as to claims 79, 80 and 81, there is nothing in the prior art, alone or in any proposed combination, to teach or in any way suggest, a method which includes "maintaining accounting information relating to the data items; and using the accounting information as a basis for a value-based accounting system in which charges are based on an identity of the data items." The prior art is completely silent about the claimed method (of claim 80) "wherein the maintaining of accounting information includes . . .: (a) tracking which data items have been stored on a system; and (b) tracking which data items have been transmitted from a server." And the prior art is completely silent about the method of claim 81 which includes "ensuring that a data item is not used by an unauthorized party."

In view of the above, withdrawal of this rejection under § 103 is respectfully requested.

The Examiner rejected claims 54-106 under the judicially created doctrine of double patenting over claims 1-48 of U.S. Pat. No. 5,978,791. Applicants will file a Terminal Disclaimer to deal with this rejection when this application is otherwise allowable.

Should the Examiner believe that a personal or telephonic interview would expedite the prosecution of this application, the Examiner is requested to contact the undersigned at the telephone number provided. The Examiner is respectfully reminded that this application is under **expedited examination**.

Respectfully submitted,

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APPENDIX

Claim 54	**Support in Specification**
In a system in which a set of data items are distributed across a network of servers, at least some of the data items being cached versions of data items from a source server, a content delivery method comprising:	Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. Source Table (ST) pg. 10, lines 9-12, pg. 18, lines 10-11, Fig. 6. ". . .the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier being determined using a given function of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
responsive to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 55	**Support in Specification**
In a system in which a set of data items are distributed across a network of servers, some of the data items being cached from a source server, a content delivery method comprising:	Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. Source Table (ST) pg. 10, lines 9-12, pg. 18, lines 10-11, Fig. 6
determining a data identifier for a particular data item, the data identifier being determined using a given function of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
responsive to a request for the particular data item, the request including at least the data identifier of the particular data item, causing a copy of the particular data item to be provided from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 56	**Support in Specification**
A content delivery method, comprising:	
distributing a set of data items across a network of servers;	See, e.g., region table 128 (pg. 17, line 13 to pg. 18) See also, e.g., *Mirror True File* mechanism "used to ensure that files are

Claim 56	Support in Specification
	available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18.
determining a data identifier for a particular data item, the data identifier being determined using a given function of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
in response to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 57	Support in Specification
A method as in claim 56 further comprising:	
determining whether the data identifier corresponds to a data identifier of any data item present on the given server.	"Locate True File . . . mechanism allows a remote processor to determine whether the local processor contains a copy of a specific True File." Pg. 44, line 32 to pg. 46, line 6, and FIG. 28. ". . . determine if the True File is available locally." Pg. 45, lines 5-6.

Claim 58	Support in Specification
A method as in claim 57 further comprising:	
based on said determining, if the data identifier does not correspond to a data item present on the given server, locating the particular data item from another server.	"*Locate True File* . . . mechanism allows a remote processor to determine whether the local processor contains a copy of a specific True File." Pg. 44, line 32 to pg. 46, line 6, and FIG. 28. ". . . determine if the True File is available . . . or if there is some indication of where the True File is located." Pg. 45, lines 5-6.

Claim 59	Support in Specification
A method as in claim 58 further comprising:	
obtaining, on the given server, a local copy of the particular data item, from the other server.	*Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15.

Claim 60	Support in Specification
A method as in claim 56 wherein at least some of the data items distributed across the network of servers are cached versions of data items from another server.	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache*, pg. 49) and description of cache operations on pgs. 71-73.

Claim 61	Support in Specification
A method as in claim 56 further comprising:	
resolving the request for the particular data item based on a measure of availability of at least one of the servers.	"source availability" field in Source table 130 (Fig. 6 and pg. 19). "source availability . . . measurement . . . used to select from among several possible sources." Pg. 19, lines 12-14.

Claim 62	Support in Specification
A method as in claim 61 wherein the measure of availability comprises one or more of:	
(a) a measurement of bandwidth to the server; (b) a measurement of a cost of a connection to the server, and (c) a measurement of a reliability of a connection to the server.	"source availability . . . measurement of the *bandwidth*, *cost* ad *reliability of the connection* to this source . . . used to select from among several possible sources." Pg. 19, lines 12-14.

Claim 63	Support in Specification
A method as in claim 56 wherein the data item is a compound data item made up of various component data items, the method further comprising:	See, e.g., True Name calculation of compound data items (pgs. 25-26)
for each component data item of at least some of the component data items:	
(a) determining a data identifier for the component data item, the data identifier determined using the given function of the data comprising the component data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
(b) providing the component data item from a given one of the servers of the network of servers.	

Claim 64	Support in Specification
A content delivery method, comprising:	
distributing a set of data items across a network of servers;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in

	alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18.
for a particular data item having a particular name specifying a location in the network at which the data item may be located, determining another name for the particular data item, the other name including a data identifier determined using a given function of the data comprising the particular data item; and	". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26. See *Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
in response to a request for the particular data item, the request including the other name of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 65	**Support in Specification**
A method as in claim 64 wherein at least some of the data items are cached versions of data items from another server.	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache*, pg. 49) and description of cache operations on pgs. 71-73.

Claim 66	**Support in Specification**
A method as in claim 64 further comprising:	
resolving the request for the particular data item based on a measure of availability of at least one of the servers.	"source availability" field in Source table 130 (Fig. 6 and pg. 19). "source availability . . . measurement . . . used to select from among several possible sources." Pg. 19, lines 12-14.

Claim 67	**Support in Specification**
A method as in claim 66 wherein the measure of availability comprises one or more of:	

(a) a measurement of bandwidth to the server; (b) a measurement of a cost of a connection to the server, and (c) a measurement of a reliability of a connection to the server.	"source availability . . . measurement of the *bandwidth, cost* ad *reliability of the connection* to this source . . . used to select from among several possible sources." Pg. 19, lines 12-14.

Claim 68	**Support in Specification**
A method as in claim 64 wherein the particular data item is a compound data item comprising various component data items, the method further comprising:	
for at least one component data item:	
(a) determining a data identifier for the component data item, the data identifier determined using a given function of the data comprising the component data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
(b) providing the component data item from a given one of the servers of the network of servers.	

Claim 69	**Support in Specification**
A content delivery method, comprising:	
distributing a set of data items across a network of servers, at least some of the data items being cached versions of data items from another server;	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier determined using a given function of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
in response to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 70	**Support in Specification**
A content delivery method, comprising:	
causing a set of data items to be distributed across a network of servers, at least some of the data items being cached versions of data items from	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49,

another server;	*Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier determined using a given function of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
in response to a request for the particular data item, the request including at least the data identifier of the particular data item, causing the particular data item to be provided from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 71	**Support in Specification**
A content delivery method, comprising:	
distributing a set of data items across a network of servers, the network of servers being organized into a set of regions;	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier determined using a given function of the data comprising the data item;	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.
in response to a client request for the particular data item, the request including at least the data identifier of the particular data item, providing the client with the particular data item from a given one of the servers of the network of servers within the region.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 72	**Support in Specification**
A method as in claim 54 wherein the given function is a message digest function or a hash function.	"A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9 "functions . . . include SHA" pg. 23, lines 11-12.

Claim 73	**Support in Specification**
A method as in claim 72 wherein the given function is selected from the functions: MD4, MD5, and SHA.	"functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12.

Claim 74	**Support in Specification**
A method as in claim 54 wherein the given function randomly distributes its	"The results . . . must be . . . randomly distributed" Pg. 22, lines 33-34.

Claim 74	Support in Specification
outputs.	

Claim 75	Support in Specification
A method as in claim 54 wherein, for a particular data item, the given function produces a substantially unique value based on the data comprising the data item.	Using *Calculate True Name* a "True Name is computed using a function . . . which reduces a data block . . . of arbitrary length to a relatively small, fixed size identifier, the True Name of the data block.", pg. 22, lines 16-18.

Claim 76	Support in Specification
A method as in claim 54 wherein a data item may comprise a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.	"In general, the terms "data" and "data item" as used herein refer to sequences of bits. Thus a data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or audio signal, or any other entity which can be represented by a sequence of bits." Pg. 2, .lines 15-21.

Claim 77	Support in Specification
In a system in which a set of data items are distributed across a network of servers, at least some of the data items being cached versions of data items from a source server, a content delivery method comprising:	"In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
responsive to a request for a particular data item, the request including at least a data identifier of the particular data item, wherein the data identifier is determined by applying a message digest function MD5 to the data comprising the particular data item, providing the particular data item from a given one of the servers of the network of servers,	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24. "A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9 "functions . . . include MD5" pg. 23, lines 11-12.
wherein a data item may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.	"In general, the terms "data" and "data item" as used herein refer to sequences of bits. Thus a data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or audio signal, or any other entity

Claim 77	Support in Specification
	which can be represented by a sequence of bits." Pg. 2, .lines 15-21.

Claim 78	Support in Specification
A content delivery method, comprising:	
distributing a set of data items across a network of servers, at least some of the data items being cached versions of data items from another server;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18. "In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier determined using a given function of the data comprising the particular data item, wherein the given function randomly distributes its outputs; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2. "The results . . . must be . . . randomly distributed" Pg. 22, lines 33-34.
in response to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 79	Support in Specification
A method as in claim 78 further comprising:	
maintaining accounting information relating to the data items; and	Accounting log, pg. 20, lines 5-18.
using the accounting information as a basis for a value-based accounting system in which charges are based on an identity of the data items.	See generally Section titled "Track for Accounting Purposes", pgs. 61-62 "The mechanism can be used as a basis for a value-based accounting system in which charges are based on the identity of the data stored or transmitted The mechanism can be used as a basis for a value-based accounting system in which charges are based on the identity of the data stored or transmitted" *Pg. 61, line*

	28-31.

Claim 80	**Support in Specification**
A method as in claim 79 wherein the maintaining of accounting information includes at least some of:	
(a) tracking which data items have been stored on a system; and	"Note every time a files is created or deleted." Pg. 62, lines 7-8
(b) tracking which data items have been transmitted from a server.	"Every time a file is transmitted" Pg. 62, line 13.

Claim 81	**Support in Specification**
A method as in claim 79 further comprising:	
ensuring that a data item is not used by an unauthorized party.	See generally the Section titled "Track for Licensing Purposes", pgs. 62-63. "This mechanism ensures that licensed files are not used by unauthorized parties." Pg. 62, lines 25-26.

Claim 82	**Support in Specification**
A content delivery method, comprising:	
distributing a set of data items across a network of servers;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18.
determining a hash of a particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2. "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.
in response to a request for the particular data item, the request including at least the hash of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 83	**Support in Specification**
A method as in claim 82 further comprising:	
resolving the request for the particular data item based on a measure of availability of at least one of the servers.	"source availability" field in Source table 130 (Fig. 6 and pg. 19). "source availability . . . measurement . . . used to select from among several

Claim 83	Support in Specification
	possible sources." Pg. 19, lines 12-14.

Claim 84	Support in Specification
A method as in claim 83 wherein the measure of availability for a server comprises one or more of:	
(a) a measurement of bandwidth to the server; (b) a measurement of a cost of a connection to the server, and (c) a measurement of reliability of a connection to the server.	"source availability . . . measurement of the *bandwidth*, *cost* ad *reliability of the connection* to this source . . . used to select from among several possible sources." Pg. 19, lines 12-14.

Claim 85	Support in Specification
A content delivery method, comprising:	
distributing a set of data items across a network of servers;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18.
for a particular data item having a particular data identifier specifying a location in the network at which the particular data item may be located, determining another data identifier for the particular data item, the other data identifier including a data identifier determined using a hash of the particular data item;	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2. "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions. ". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26.
in response to a request for the particular data item, the request including the other data identifier of the particular data item, providing the particular data item from a given one of the servers of the network	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 85	Support in Specification
of servers.	

Claim 86	**Support in Specification**
A content delivery method, comprising:	
distributing a set of data items across a network of servers, at least some of the data items being cached versions of data items from another server;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18. "In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a data identifier for a particular data item, the data identifier including a hash of the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2. "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.
in response to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 87	**Support in Specification**
A method of delivering a data item in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24.
storing the data item is on a first server in the network and storing copies of the data item on a set of servers in the network distinct from the first server; and	See generally the mechanism *Mirror True File* at pg. 50 et seq. ". . . use to ensure that files are available in alternate locations." Pg. 50, lines 16-18.
responsive to a client request for the data item, the request including a hash of the data item, causing the data item to be provided to the client.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24. "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.

Claim 88	Support in Specification
A method as in claim 87 wherein the data item has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:	". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26.
associating the contextual name of the data item with the hash of the data item.	Calculate True Name, "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions. See also *Assimilate Data Item* at pg. 26 et seq. The LDE table includes "the . . . contextual name" *Pg. 15, line 30* and the True Name *Pg. 15.*

Claim 89	Support in Specification
A method of delivering a data item in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24.
storing the data item is on a first server and storing copies of the data item on a set of servers distinct from the first server; and	See generally the mechanism *Mirror True File* at pg. 50 et seq. ". . . use to ensure that files are available in alternate locations." Pg. 50, lines 16-18.
responsive to a client request for the data item, the request including a value determined as a given function of the data in the data item, providing the data item to the client.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 90	Support in Specification
A method as in claim 89 wherein the data item has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:	". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of

	an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26.
Associating the contextual name of the data item with the value determined as the given function of the data in the data item.	Calculate True Name, "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions. See also *Assimilate Data Item* at pg. 26 et seq. The LDE table includes "the . . . contextual name" *Pg. 15, line 30* and the True Name *Pg. 15.*

Claim 91	**Support in Specification**
A method as in claim 54	
wherein certain processors in the network communicate with each other using a TCP/IP communication protocol.	". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.

Claim 92	**Support in Specification**
A method of delivering a data item in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data item on the network and wherein ordinarily the key is a name or address for the data item, the method comprising:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24. ". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.
storing some data items on a first server in the network and storing copies of some of the data items on a set of cache servers distinct from the first server;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18. "In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
determining a different cache key from the ordinarily used cache key, the	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.

different cache key being a function of the data it represents; and	
responsive to a client request for the data item, the request including the different cache key for the data item, providing the data item to the client.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 93	**Support in Specification**
A method as in claim 92 wherein the function is a message digest function or a hash function.	"A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9. "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.

Claim 94	**Support in Specification**
A method as in claim 93 wherein the function is selected from the functions: MD4, MD5, and SHA.	"functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12.

Claim 95	**Support in Specification**
A method as in claim 92 wherein the function randomly distributes its outputs.	"The results . . . must be . . . randomly distributed" Pg. 22, lines 33-34.

Claim 96	**Support in Specification**
A framework operative in a computer network in which users of client processors connect to a content server, the framework comprising:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24.
a set of content servers, distinct from the content provider server, for hosting at least some of the data items that are normally hosted by the content provider server;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18. "In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache*, pg. 49) and description of cache operations on pgs. 71-73.
a mechanism constructed and adapted to determine an identifier for a data item as a given function of a data item in the network;	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2.

Claim 96	Support in Specification
wherein, in response to requests for a data item, generated by one of the client machines the request including an identifier based on the given function of the particular data item, the particular data item is served from one of the content servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 97	Support in Specification
A framework as in claim 96 wherein the given function is a message digest function or a hash function.	"A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9 "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.

Claim 98	Support in Specification
A framework as in claim 97 wherein the given function is selected from the functions: MD4, MD5, and SHA.	"functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12.

Claim 99	Support in Specification
A framework as in claim 96 wherein the given function randomly distributes its outputs.	"The results . . . must be . . . randomly distributed" Pg. 22, lines 33-34.

Claim 100	Support in Specification
A framework as in claim 96 wherein processors in the network communicate with each other using a TCP/IP communication protocol.	". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.

Claim 101	Support in Specification
A framework as in claim 96 wherein the data item has a contextual name, the framework further comprising:	". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26.
a mechanism constructed and adapted to associate the contextual name of the data item with the identifier for the data item.	Calculate True Name, "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions. See also *Assimilate Data Item* at pg. 26 et seq. The LDE table includes "the . . . contextual

Claim 101	Support in Specification
	name" *Pg. 15, line 30* and the True Name *Pg. 15.*

Claim 102	Support in Specification
A framework as in claim 101 wherein the contextual name of the data item comprises a pathname including a processor name and a file name.	". . . data may be organized to form a hierarchy of data storage elements, . . ., for example, *processors*, file systems, regions, directories, data files, segments, and the like.. . .. some or all of these elements can be named by users given certain implementation specific naming conventions, the name (or pathname) of an element being relative to a context. . . ., a pathname is fully specified by a *processor name*, a filesystem name,. . ." Pg. 9, lines 7-26.

Claim 103	Support in Specification
In a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data item on the network and wherein ordinarily the key is a name or address for the data item, a method of delivering a data item:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24. ". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.
storing some data items on a first server in the network and storing copies of some of the data items from the first server on a set of cache servers distinct from the first server;	See, e.g., *Mirror True File* mechanism "used to ensure that files are available in alternate locations" pg. 50, lines 15-17 and its corresponding description. "the *Mirror True File* . . . mechanism . . . causes one or more copies of the new file to be made on remote processors." Pg. 73, lines 15-18. "In operation, the system can be used to cache data items from a server" Pg. 71, lines 32-33. See also the various cache mechanisms (*Lock Cache*, pg. 49, *Update Cache,* pg. 49) and description of cache operations on pgs. 71-73.
for a particular data item, determining a different cache key from the ordinarily used cache key for the data item, the different cache key being determined using a message function MD5 of the data comprising the particular data item; and	"A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9. "functions . . . include . . . MD5" pg. 23, lines 11-12.
responsive to a client request for the particular data item, the request	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12

Claim 103	Support in Specification
including the different cache key for the data item, causing the particular data item to be provided to the client,	to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.
wherein the data item may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.	"In general, the terms "data" and "data item" as used herein refer to sequences of bits. Thus a data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or audio signal, or any other entity which can be represented by a sequence of bits." Pg. 2, .lines 15-21.

Claim 104	Support in Specification
A framework operative in a computer network in which users of client processors connect to a content server, wherein processors in the network communicate with each other using a TCP/IP communication protocol, the framework comprising:	See generally Fig. 1., and description at pg. 8, lines 8 to pg. 9, line 3. ", the processors may be in one of various relationships. For example, two processors 102 may be in a client/server, client/client, or a server/server relationship. . . ." pg. 8, lines 21-24. ". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.
a mechanism constructed and adapted to determine a given function of a data item in the network, the given function being a message digest function or a hash function;	"A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9; "functions . . . include MD4, MD5, and SHA" pg. 23, lines 11-12. These are known hash functions.
a set of content servers, distinct from the content provider server, for hosting at least some of the data items that are normally hosted by the content provider server;	See generally region table 128 (pg. 17-18) and "Mirror Processor(s)" description as "processors which are to keep . . . copies of all files in the current region". Pg. 18, line 5 et seq.
wherein, in response to requests for a data item, generated by one of the client machines the request including an identifier based on the given function of the particular data item, the particular data item is served from one of the content servers.	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.

Claim 105	Support in Specification
A framework as in claim 96 wherein a data item may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.	"In general, the terms "data" and "data item" as used herein refer to sequences of bits. Thus a data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or audio signal, or any other entity which can be

	represented by a sequence of bits." Pg. 2, .lines 15-21.

Claim 106	Support in Specification
A content delivery method in a network in which at least some processors in the network communicate with each other using a TCP/IP communication protocol, the method comprising:	See generally Fig. 1 and corresponding description. ". . . processors communicate with each other using . . . communication protocols such as . . . TCP/IP." Pg. 44, lines 14-17.
for a particular data item having a particular name specifying a location in the network at which the data item may be located, determining another name for the particular data item, the other name including a data identifier determined using message digest function MD5 of the data comprising the particular data item; and	*Calculate True Name*, pg. 22, line 15 to pg. 26, line 2. "A family of functions with the above properties are the so-called message digest functions" Pg. 23, lines 8-9; "functions . . . include MD5" pg. 23, lines 11-12.
in response to a request for the particular data item, the request including the other name of the particular data item, causing the particular data item to be provided from a given one of the servers of the network of servers,	pg. 66, line 16 to pg. 67, line ___. *Realize True File from Location*, pg. 29, lines 12 to pg. 30, line 5 and FIG. 15. *Request True File*, pg. 46, lines 7-24.
wherein the data item may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.	". . . the terms "data" and "data item" as used herein refer to sequences of bits. Thus a data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or audio signal, or any other entity which can be represented by a sequence of bits." Pg. 2, .lines 15-21.

Abstract of the Disclosure

In a system in which a set of data items are distributed across a network of servers, at least some of the data items being cached versions of data items from a source server, a content delivery method includes determining a data identifier for a particular data item, the data identifier being determined using a given function of the data comprising the particular data item; and responsive to a request for the particular data item, the request including at least the data identifier of the particular data item, providing the particular data item from a given one of the servers of the network of servers. The request for the particular data item may be resolved based on a measure of availability of at least one of the servers, where the measure of availability may be a measurement of bandwidth to the server; a measurement of a cost of a connection to the server, and/or a measurement of a reliability of a connection to the server. The function used to determine the identifier may be a message digest function or a hash function.

Claim Amendments

54. (Amended) In a system in which a set of data [items] files are distributed across a network of servers, at least some of the data [items] files being cached versions of data [items] files from a source server, wherein the source server is distinct from the servers in the network, a content delivery method comprising:

determining a data identifier for a particular data [item] file on the source server, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of [comprising] the particular data [item] file; and

responsive to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers, said providing being based on the data identifier of the requested data item.

55. (Amended) In a system in which a set of data [items] files are distributed across a network of servers, some of the data [items] files being cached from a source server distinct from the servers in the network, a content delivery method comprising:

determining a data identifier for a particular data [item] file on the source server, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of [comprising] the particular data [item] file; and

responsive to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, causing a copy of the particular data [item] file to be provided from a given one of the servers of the network of servers.

56. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers;

determining a data identifier for a particular data [item] file, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of [comprising] the particular data [item] file; and

in response to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers, said providing being based on the data identifier of the particular data file.

57. (Amended) A method as in claim 56 further comprising:

determining whether the data identifier corresponds to a data identifier of any data [item] file present on the given server.

58. (Amended) A method as in claim 57 further comprising:

based on said determining, if the data identifier does not correspond to a data [item] file present on the given server, locating the particular data [item] file from another server.

59. (Amended) A method as in claim 58 further comprising:

obtaining, on the given server, a local copy of the particular data [item] file, from the other server.

60. (Amended) A method as in claim 56 wherein at least some of the data [items] files distributed across the network of servers are cached versions of data [items] files from another server, distinct from the network of servers.

61. (Amended) A method as in claim 56 further comprising:

resolving the request for the particular data [item] file based on a measure of availability of at least one of the servers.

62. (Amended) A method as in claim 61 wherein the measure of availability is based on [comprises] one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of a reliability of a connection to the server.

63. (Amended) A method as in claim 56 wherein the data [item] file is a compound data [item] file made up of various component data [items] files, the method further comprising:

for each component data [item] file of at least some of the component data [items] files:

(a) determining a data identifier for the component data [item] file, the data identifier for the component file determined using the given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of [comprising] the component data [item] file; and

(b) providing the component data [item] file from a given one of the servers of the network of servers.

64. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers;

for a particular data [item] file having a particular name specifying a location in the network at which the data [item] file may be located, determining another name for the particular data [item] file, the other name including a data identifier determined using a given function of the data, where said data used by the given function comprises the contents of [comprising] the particular data [item] file; and

in response to a request for the particular data [item] file, the request including the other name of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers.

65. (Amended) A method as in claim 64 wherein at least some of the data [items] files are cached versions of data [items] files from another server which is distinct from the network of servers.

66. (Amended) A method as in claim 64 further comprising:

resolving the request for the particular data [item] file based on a measure of availability of at least one of the servers.

67. (Amended) A method as in claim 66 wherein the measure of availability is based on [comprises] one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of a reliability of a connection to the server.

68. (Amended) A method as in claim 64 wherein the particular data [item] file is a compound data [item] file comprising various component data [items] files, the method further comprising:

for at least one component data [item] file:

(a) determining a data identifier for the component data [item] file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of [comprising] the component data [item] file; and

(b) providing the component data [item] file from a given one of the servers of the network of servers.

69. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers, at least some of the data [items] files being cached versions of data [items] files from another server, distinct from the network of servers;

determining a data identifier for a particular data [item] file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of [comprising] the particular data [item] file; and

in response to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers.

70. (Amended) A content delivery method, comprising:

causing a set of data [items] files to be distributed across a network of servers, at least some of the data [items] files being cached versions of data [items] files from another server distinct from the network of servers;

determining a data identifier for a particular data [item] file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of [comprising] the particular data [item] file; and

in response to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, causing the particular data [item] file to be provided from a given one of the servers of the network of servers.

71. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers, the network of servers being organized into a set of regions;

determining a data identifier for a particular data [item] file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of [comprising] the data [item] file;

in response to a client request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the client with the particular data [item] file from a given one of the servers of the network of servers within the region.

72. (Amended) A method as in claim 54 wherein the given function is a message digest function or a hash function.

73. (Amended) A method as in claim 72 wherein the given function is selected from the functions: MD4, MD5, and SHA.

74. (Amended) A method as in claim 54 wherein the given function randomly distributes its outputs.

75. (Amended) A method as in claim 54 wherein, for a particular data [item] file, the given function produces a substantially unique value based on the data comprising the data [item] file.

76. (Amended) A method as in claim 54 wherein a data [item] file may comprise a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

77. (Amended) In a system in which a set of data [items] files are distributed across a network of servers, at least some of the data [items] files being

cached versions of data [items] files from a source server distinct from the network of servers, a content delivery method comprising:

responsive to a request for a particular data [item] file, the request including at least a data identifier of the particular data [item] file, wherein the data identifier is determined by applying a message digest function MD5 to the data, wherein said data used by the MD5 function to determine the data identifier is the contents of [comprising] the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers,

wherein a data [item] file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

78. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers, at least some of the data [items] files being cached versions of data [items] files from another server distinct from the network of servers;

determining a data identifier for a particular data [item] file, the data identifier determined using a given function of the data, wherein said data used by the given function comprises the contents of [comprising] the particular data [item] file, and wherein the given function randomly distributes its outputs; and

in response to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers, said providing being based on the data identifier of the particular data item.

79. (Amended) A method as in claim 78 further comprising:

maintaining accounting information relating to the data [items] files; and

using the accounting information as a basis for a value-based accounting system in which charges are based on an identity of the data [items] files.

80. (Amended) A method as in claim 79 wherein the maintaining of accounting information includes at least some of:

(a) tracking which data [items] files have been stored on a system; and

(b) tracking which data [items] files have been transmitted from a server.

81. (Amended) A method as in claim 79 further comprising:

ensuring that a data [item] file is not used by an unauthorized party.

82. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers;

determining [a] an MD5 hash of the contents of a particular data [item] file; and

in response to a request for the particular data [item] file, the request including at least the MD5 hash of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers, said providing being based on the MD5 hash of the particular data file.

83. (Amended) A method as in claim 82 further comprising:

resolving the request for the particular data [item] file based on a measure of availability of at least one of the servers.

84. (Amended) A method as in claim 83 wherein the measure of availability for a server is based on [comprises] one or more of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of reliability of a connection to the server.

85. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers;

for a particular data [item] file having a particular data identifier specifying a location in the network at which the particular data [item] file may be located, determining another data identifier for the particular data [item] file, the other data identifier including a data identifier determined using a [hash] message digest function of the contents of the particular data [item] file;

in response to a request for the particular data [item] file, the request including the other data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers, said providing being based on the other data identifier which was determined using the message digest function.

86. (Amended) A content delivery method, comprising:

distributing a set of data [items] files across a network of servers, at least some of the data [items] files being cached versions of data [items] files from another server, said other server being distinct from the network of servers;

determining a data identifier for a particular data [item] file, the data identifier including a hash of the contents of the particular data [item] file; and

in response to a request for the particular data [item] file, the request including at least the data identifier of the particular data [item] file, providing the particular data [item] file from a given one of the servers of the network of servers.

87. (Amended) A method of delivering a data [item] file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:

storing the data [item] file is on a first server in the network and storing copies of the data [item] file on a set of servers in the network distinct from the first server; and

responsive to a client request for the data [item] file, the request including a hash of the contents of the data [item] file, causing the data [item] file to be provided to the client.

88. (Amended) A method as in claim 87 wherein the data [item] file has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:

associating the contextual name of the data [item] file with the hash of the contents of the data [item] file.

89. (Amended) A method of delivering a data [item] file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, the method comprising:

storing the data [item] file is on a first server and storing copies of the data [item] file on a set of servers distinct from the first server; and

responsive to a client request for the data [item] file, the request including a value determined as a given function of the contents of [data in] the data [item] file, providing the data [item] file to the client.

90. (Amended) A method as in claim 89 wherein the data [item] file has a contextual name comprising a pathname including a processor name and a file name, the method further comprising:

associating the contextual name of the data [item] file with the value determined as the given function of the data in the data [item] file.

91. (Amended) A method as in claim 54

wherein certain processors in the network communicate with each other using a TCP/IP communication protocol.

92. (Amended) A method of delivering a data [item] file in a network comprising a plurality of processors, some of the processors being servers and some of the processors being clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data [item] file on the network and wherein ordinarily the key is a name or address for the data [item] file, the method comprising:

storing some data [items] files on a first server in the network and storing copies of some of the data [items] files on a set of cache servers distinct from the first server;

determining a different cache key from the ordinarily used cache key, the different cache key being a function of the contents of the data it represents; and

responsive to a client request for the data [item] file, the request including the different cache key for the data [item] file, providing the data [item] file to the client.

93. (Amended) A method as in claim 92 wherein the function is a message digest function or a hash function.

94. (Amended) A method as in claim 93 wherein the function is selected from the functions: MD4, MD5, and SHA.

95. (Amended) A method as in claim 92 wherein the function randomly distributes its outputs.

96. (Amended) A framework operative in a computer network in which users of client processors connect to a content server, the framework comprising:

a set of content servers, distinct from the content provider server, for hosting at least some of the data [items] files that are normally hosted by the content provider server;

a mechanism constructed and adapted to determine an identifier for a data [item] file as a given function of the contents of a data [item] file in the network;

wherein, in response to requests for a data [item] file, generated by one of the client machines the request including an identifier based on the given function of the contents of the particular data [item] file, the particular data [item] file is served from one of the content servers.

97. (Amended) A framework as in claim 96 wherein the given function is a message digest function or a hash function.

98. (Amended) A framework as in claim 97 wherein the given function is selected from the functions: MD4, MD5, and SHA.

99. (Amended) A framework as in claim 96 wherein the given function randomly distributes its outputs.

100. (Amended) A framework as in claim 96 wherein processors in the network communicate with each other using a TCP/IP communication protocol.

101. (Amended) A framework as in claim 96 wherein the data [item] file has a contextual name, the framework further comprising:

a mechanism constructed and adapted to associate the contextual name of the data [item] file with the identifier for the data [item] file.

102. (Amended) A framework as in claim 101 wherein the contextual name of the data [item] file comprises a pathname including a processor name and a file name.

103. (Amended) In a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a data [item] file on the network and wherein ordinarily the key is a name or address for the data [item] file, a method of delivering a data [item] file:

storing some data [items] files on a first server in the network and storing copies of some of the data [items] files from the first server on a set of cache servers distinct from the first server;

for a particular data [item] file, determining a different cache key from the ordinarily used cache key for the data [item] file, the different cache key being determined using a message digest function MD5 of the data, wherein said data used by the MD5 function comprises the contents of [comprising] the particular data [item] file; and

responsive to a client request for the particular data [item] file, the request including the different cache key for the data [item] file, causing the particular data [item] file to be provided to the client,

wherein the data [item] file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

104. (Amended) A framework operative in a computer network in which users of client processors connect to a content server, wherein processors in the network communicate with each other using a TCP/IP communication protocol, the framework comprising:

a mechanism constructed and adapted to determine a given function of a data [item] file in the network, the given function being a message digest function or a hash function;

a set of content servers, distinct from the content provider server, for hosting at least some of the data [items] files that are normally hosted by the content provider server;

wherein, in response to requests for a data [item] file, generated by one of the client machines the request including an identifier based on the given function of the

contents of the particular data [item] file, the particular data [item] file is served from one of the content servers.

105. (Amended) A framework as in claim 96 wherein a data [item] file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

106. (Amended) A content delivery method in a network in which at least some processors in the network communicate with each other using a TCP/IP communication protocol, the method comprising:

for a particular data [item] file having a particular name specifying a location in the network at which the data [item] file may be located, determining another name for the particular data [item] file, the other name including a data identifier determined using message digest function MD5 of the data, wherein said data used by the MD5 function comprises the contents of [comprising] the particular data [item] file; and

in response to a request for the particular data [item] file, the request including the other name of the particular data [item] file, causing the particular data [item] file to be provided from a given one of the servers of the network of servers,

wherein the data [item] file may be a file, a portion of a file, a page in memory, a digital message, a digital image, a video signal or an audio signal.

Please add the following new claims:

--107. (New) A content delivery method, in a system in which a plurality of data files are distributed across a network of servers, at least some of the data files being cached versions of data files from a source server distinct from the network of servers, the content delivery method comprising:

for a particular data file, determining a name using a given function of the data, said data being the data which comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the name of the particular data file, causing the particular data file to be provided from a given one of the servers of the network of servers.

108. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, at least some of the files being cached versions of files from a source server distinct from the servers in the network, wherein data in a file in the system may represent a digital message, a digital image, a video signal or an audio signal, the content delivery method comprising:

determining a name for a particular file, the name being determined using an MD5 function of the data, said data being the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the determined name.

109. (New) A method, in a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a file on the network and wherein ordinarily the key is a name or address for the file, the method comprising:

storing some files on a first server in the network and storing copies of some of the files from the first server on a set of cache servers distinct from the first server;

for a particular file, determining a different cache key from the ordinarily used cache key for the file, the different cache key being determined using a message function MD5 of the data, wherein said data used by the MD5 function comprises the contents of the particular file; and

responsive to a client request for the particular file, the request including the different cache key for the file, causing the particular file to be provided to the client,

wherein the data in the file may represent a digital message, a digital image, a video signal or an audio signal.

110. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, the content delivery method comprising:

for a particular file, the contents of said file representing a digital image, determining a name for the particular file, wherein the name is determined using a given function of the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular file from a given one of the servers of the network of servers.

111. (New) A content delivery method comprising:

causing a plurality of files to be distributed across a network of servers, at least some of the files being cached versions of files from a source server,

for a particular file, determining a name, the name being determined using a given function of the data, said data used by said function being data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, causing the particular file to be provided from a given one of the servers of the network of servers.

112. (New) A content delivery method, in a system in which a plurality of files are distributed across a network of servers, at least some of the files being cached versions of files from a source server, the content delivery method comprising:

determining a name for a particular file, the name being determined using a given function of the data which comprises the contents of the particular file; and

in response to a request for the particular file, the request including at least the name of the particular file, providing the particular file from a given one of the servers of the network of servers,

wherein the contents of the particular file may represent a digital message, a digital image, a video signal or an audio signal.

113. (New) A method, in a network comprising a plurality of processors, some of the processors functioning as servers and some of the processors functioning as clients, wherein some processors in the network communicate with each other using a TCP/IP communication protocol, wherein a key is required to identify a file on the network and wherein ordinarily the key is a name or address for the file, the method comprising:

storing some files on a first server in the network and storing copies of some of the files from the first server on a set of cache servers distinct from the first server;

for a particular file, determining a different cache key from the ordinarily used cache key for the file, the different cache key being determined using a message function MD5 of the data, wherein said data comprises the contents of the particular file; and

responsive to a client request for the particular file, the request including the different cache key for the file, causing the particular file to be provided to the client,

wherein the contents of the file may represent: a page in memory, a digital message, a digital image, a video signal or an audio signal.

114. (New) A content delivery method comprising:

distributing a set of files from a first server across a network of servers distinct from the first server;

applying an MD5 function to the contents of a particular file to obtain a True Name for the file;

in response to a request for the particular file, the request including at least the True Name of the particular file, causing the particular file to be provided from a given one of the servers of the network of servers, wherein the request for the particular file is resolved based on a measure of availability of at least one of the servers.

115. (New) A method as in claim 114 wherein the measure of availability for a server is based on at least one of:

(a) a measurement of bandwidth to the server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of reliability of a connection to the server.

116. (New) A content delivery method comprising:

distributing a plurality of files across a network of servers, at least some of the files being cached versions of files from a source server distinct from the servers in the network;

for a particular file, determining a True Name using a given function of the data which comprises the contents of the particular file;

obtaining a request for the particular file, the request including at least the True Name of the particular file; and

responsive to the request, causing the particular file to be provided from one of the servers of the network of servers.

117. (New) A content delivery method, comprising:

distributing a set of files across a network of servers;

for a particular file having a contextual name specifying a location in the network at which the file may be located, determining another name for the particular file, the other name including a data identifier determined using a given function of the data, where said data used by the given function comprises the contents of the particular file;

obtaining a request for the particular file, the request including the contextual name and the other name of the particular file,

responsive to the request, providing the particular file from one of the servers of the network of servers, said providing being based on the other name of the particular item.

118. (New) A content delivery method, comprising:

distributing a set of files across a network of servers;

for a particular file representing a digital image, the file having a contextual name specifying a location in the network at which the file may be located, determining another name for the particular file, the other name including a True Name for the file which was determined using a message digest function of the data, where said data used by the given function comprises the contents of the particular file;

obtaining a request for the particular file, the request including the contextual name and the True Name of the particular file; and

responsive to the request, providing the particular file from one of the servers of the network of servers, said providing being based on the True Name of the particular item.

119. (New) A method comprising:

applying an MD5 function to the contents of an image file containing data representing a digital image to obtain a True Name for the file;

distributing copies of the image file from a first server across a network of servers distinct from the first server;

obtaining a request for the image file, the request including at least the True Name of the file; and

responsive to the request, causing a copy of the image file to be provided from one of the servers of the network of servers.

120. (New) A method as in claim 54 wherein said data identifier for said particular data file, as determined using said given function, will change when the particular data file is modified.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE — PATENT APPLICATION

Group Art Unit: 2771
Examiner: Jean Homere
Atty. Dkt.: P 252465 (M# / Client Ref)

Inventor(s): FARBER et al.
Appln. No.: 09 / 283,160E (Series Code / Serial No.)
Filed: April 1, 1999
Appln. Title: INDENTIFYING DATA IN A DATA PROCESSING SYSTEM

Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

Date: August 22, 2001

REPLY/AMENDMENT/LETTER

This is a reply/amendment/letter in the above-identified application and includes the herewith attachment of same date and subject which is incorporated hereinto by reference and the signature below is treated as the signature to the attachment in absence of a signature thereto.

FEE REQUIREMENTS FOR CLAIMS AS AMENDED

1. Small Entity claim
A. ☒ NOT made
B. ☐ Withdrawn
C. ☐ made herewith
D. ☐ made previously
For B & C See Required Separate Paper (Pat-256)

	Claims remaining after amendment	Highest number previously paid for		Present Extra	Large/Small Entity	Additional Fee	Fee Code Lg/Sm
2. Total Effective Claims	67	**minus	53	14	x $18/$9 =	+ $252	103/203
3. Independent Claims	31	***minus	19	12	x $80/$40 =	+ $960	102/202
4. If amendment enters proper multiple dependent claim(s) into this application for first time (leave blank if this is a reissue application) ..... add					+ $270/$135 =	+ $0	104/204
5. Original due Date: September 5, 2001 ☐ NONE							
6. Petition is hereby made to extend the original due date to cover the date this response is filed for which the requisite fee is attached (1 mo) (2 mos) (3 mos) (Usable only for ≤ 2mo.OA - - - 4 mos) (Usable only for 30 day/1mo.OA - - - 5 mos)				$110/$55 = $390/$195 = $890/$445 = $1390/$695= $1890/$945=	+ $0		115/215 116/216 117/217 118/218 128/228
7. Enter any previous extension fee paid since above original due date and subtract					- $0		
8. Extension Fee Attached						+ $0	
9. If Terminal Disclaimer attached, add Rule 20(d) official fee					+ $110/$55	+ $0	148/248
10. If IDS attached requires Official Fee under Rule 97 (c), ... add or if Rule 97(d) Request ..... add					+ $180 + $180	+ $180	126 126
11. After-Final Request Fee per rules 129(a) and 17(r)					+ $710/355	+ $0	146/246
12. No. of additional inventions for examination per Rule 129(b).....					x $710/355 ea	+ $0	149/249
13. Request for Continued Examination (RCE)					+ $710/355	+ $0	1179/1279
14. Petition fee for						+ $0	
15. TOTAL FEE ENCLOSED =						$1392	

16. *If the entry in this space is less than entry in next space, the "Present Extra" result is "0".
17. **If the "Highest number previously paid for" in this space is less than 20, write "20" in this space.
18. ***If the "Highest number previously paid for" in this space is less than 3, write "3" in this space.

Our Deposit Account No. 03-3975)
(Our Order No. 007018 (C#) 252465 (M#)

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficiencies only) now or hereafter relative to this application and the resulting Official Document under Rule 20, or credit any overpayment, to our Accounting/Order Nos. shown above. for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal sheet is filed.

Query: Is appeal deadline now? If so, file Notice of Appeals separately.

Pillsbury Winthrop LLP
Intellectual Property Group
By Atty: Brian Szuzky Reg. No. 37497
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1600 Tysons Boulevard
McLean, VA 22102
Tel: (703) 905-2000
Atty/Sec: BS/ANS
Fax: (703) 905-2500
Tel: (703) 905-2185

NOTE: File this cover sheet in duplicate with PTO receipt (PAT-103A) and attachments

PAT-120 12/00

VW0a.b00

#9
8/28/01
A.W.

IN THE UNITES STATES PATENT AND TRADEMARK OFFICE

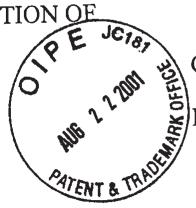
In re PATENT APPLICATION OF

FARBER et al.

Appln. No.: 09/283,160

Filed: April 1, 1999

Title: IDENTIFYING DATA IN A DATA PROCESSING SYSTEM



Group Art Unit: 2771

Examiner: Jean Homere

* * * * *

August 22, 2001

INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Attached is Form PTO-1449 listing the enclosed documents.

The Rule 17(p) Official Fee required by Rule 97(c) in lieu of certification is filed herewith. Should that fee be missing or inadequate, please charge the deficiency to our Deposit Account No. 03-3975 under Order No. 007018/0252465 for which purpose this paper is submitted in duplicate.

This Information Disclosure Statement is intended to be in full compliance with the rules, but should the Examiner find any part of its required content to have been omitted, prompt notice to that effect is earnestly solicited, along with additional time under Rule 97(f) to enable Applicant to comply fully.

Consideration of the foregoing and enclosures plus the return of a copy of the herewith Form PTO-1449 with the Examiner's initials in the left column per MPEP 609 along with an early Action on the merits of this application are earnestly solicited.

Applicant hereby expressly reserves the right to swear behind the effective date of the reference s and to question the relevance and materiality of the references cited, in whole, in part, or in combination, subsequent to filing this Information Disclosure Statement.

Respectfully submitted,

PILLSBURY WINTHROP

By _____

Brian Siritzky
Reg. No.: 37497
Tel. No.: (202) 861-2185
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BS/ans
1600 Tysons Blvd
McLean, VA 22102
(703) 905-2000

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No.: 09/283,160

Filing Date: April 1, 1999

Date: August 22, 2001 Page 1 of 1

Examiner: Jean Homere Group Art Unit: 2771

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR						
	BR						
	CR						
	DR						
	ER						
	FR						
	GR						
	HR						
	IR						
	JR						
	KR						

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name		English Abstract		Translation Readily Available	
							Enclosed	No	Enclose	No
	LR									
	MR									
	NR									
	OR									
	PR									
	QR									
	RR									
	SR									
	TR									
	UR									

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

JRH	VR	KIM et al., "Experiencess with Tripwire: Using Intergrity Checkers For Intrusion Detection", COAST Labs. Dept. of Computer Sciences Purdue University, February 22, 1995, pages 1-12
JRH	WR	KIM et al., "The Design and Implementation of Tripwire: A file System Intergrity Checker", COAST Labs. Dept. of Computer Sciences Purdue University, November 19, 1993, pages 1-21

Examiner Jean R. Homere Date Considered: 10-5-01

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

#10 p.h. 10-10

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of
Inventor(s): Farber et al

PATENT APPLICATION

Appln. No 09/283160
series code ↑ ↑ serial no.

Group Art Unit: 2771

Filed: April 1, 1999

Examiner: Jean HOMERE

Title: IDENTIFYING AND REQUESTING DATA IN A NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

TERMINAL DISCLAIMER

(By Attorney)

Re Double-Patenting Rejection

Hon. Commissioner of Patents and Trademarks
Washington, D C. 20231

Sir:

The undersigned petitioner, an attorney of record, is hereby acting for the undernamed entities which are jointly the 100% owners of all rights, title and interests in and to the subject application:

1. ☐ by virtue of being the inventor(s) and having not assigned this application
2. ☒ as shown by the Assignment recorded 10/5/2000 on Reel 011233 at Frame 0164 (date)
3. ☐ as shown by the attached copy of the Assignment filed for recordal on _____ (date)
4. ☒ and, if the assignor in that Assignment is not the original owner (inventor(s)), the chain of title from the original owner to that Assignment as recorded on Reel 9873 at Frame 0463 Reel _____ at Frame _____ Reel _____ at Frame _____

and hereby disclaims (except as provided below) the terminal part of the statutory term of any patent granted on the subject application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. 154 to 156 and 173, as presently shortened (if at all) by any terminal disclaimer of:

5. ☐ any patent granted in regard to U.S. Application No. 0 / _____ filed _____
6. ☒ the earlier granted United States Patent No. 5,978,791

to which said entities also have legal title. Petitioner hereby reserves the right to extend the term of the patent, which issues on this application, for regulatory delay or otherwise as the law allows. Petitioner hereby agrees that any patent so granted on the subject application shall be enforceable only for and during such period that it and the patent in the above line numbered 5 or 6 are commonly owned. This agreement runs with any patent granted on the subject application and is binding upon the grantee, its successors or assigns.

PAT-136A 11/98

In making the above disclaimer, petitioner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 to 156 and 173 of the patent in line numbered 5 or 6 above, as presently shortened by any terminal disclaimer, of the above-listed patent in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is otherwise terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Entities: **Digital Island, Inc.** and **Kinetech, Inc.**

Atty. Sig. _____

Attorney of Record

Name: Brian Siritzky

Reg. No.: 37497

Date: October 9, 2001

* Attorney and client: Please note on that other file and also this appln. file not to assign either separately in view of this disclaimer

☒ Terminal disclaimer fee under 37 CFR 1.20(d) is enclosed.

PAT-136A 11/98

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE PATENT APPLICATION

Inventor(s): Farber et al.
Appln. No.: 09 (Series Code ↑) | 283,160 (Serial No. ↑)
Filed: April 1, 1999

Hon. Commissioner of Patents
Washington, D.C. 20231

Group Art Unit 2771
Examiner. Homere, Jean
Atty. Dkt. P 252465 (M#) | TrueNames (Client Ref)

Appln. Title. IDENTIFYING AND REQUESTING DATA IN A NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Sir

REPLY/AMENDMENT/LETTER

Date: October 9, 2001

This is a reply/amendment/letter in the above-identified application and includes the herewith attachment of same date and subject which is incorporated hereinto by reference and the signature below is treated as the signature to the attachment in absence of a signature thereto

FEE REQUIREMENTS FOR CLAIMS AS AMENDED

1. Small Entity claim
A ☒ NOT made
B ☐ withdrawn
C. ☐ made herewith
D ☐ made previously
For B & C See Required Separate Paper (Pat-256)

	Claims remaining after amendment	Highest number previously paid for	Present Extra	Large/Small Entity	Additional Fee	Fee Code Lg/Sm
2. Total Effective Claims		**minus 0	0	x $18/$9 =	+ $0	103/203
3 Independent Claims		***minus 0	0	x $84/$42 =	+ $0	102/202
4 If amendment enters proper multiple dependent claim(s) into this application for first time (leave blank if this is a reissue application) ... add				+ $280/$140 =	+ $0	104/204
5. Original due Date:	☐ NONE					
6 Petition is hereby made to extend the original due date to cover the date this response is filed for which the requisite fee is attached (1 mo) (2 mos) (3 mos) (Usable only for ≤ 2mo OA - - - 4 mos) (Usable only for 30 day/1mo.OA - - - 5 mos)			$110/$55 = $400/$200 = $920/$460 = $1,440/$720= $1,960/$980=	+ $0		115/215 116/216 117/217 118/218 128/228
7. Enter any previous extension fee paid since above original due date and subtract				- $0		
8. Extension Fee Attached					+ $0	
9. If Terminal Disclaimer attached, add Rule 20(d) official fee				+ $110/$55	+ $110	148/248
10. If IDS attached requires Official Fee under Rule 97 (c), ... add or if Rule 97(d) Request ... add				+ $130 + $180	+ $0	126 126
11. After-Final Request Fee per rules 129(a) and 17(r)				+ $740/370	+ $0	146/246
12. No. of additional inventions for examination per Rule 129(b)				x $740/370 ea	+ $0	149/249
13. Request for Continued Examination (RCE)				+ $740/370	+ $0	1179/1279
14. Petition fee for					+ $0	
15. TOTAL FEE ~~ENCLOSED~~ =					$110	

16. *If the entry in this space is less than entry in next space, the "Present Extra" result is "0"
17. **If the "Highest number previously paid for" in this space is less than 20, write "20" in this space
18 ***If the "Highest number previously paid for" in this space is less than 3, write "3" in this space

Art Unit 2771

Our Deposit Account No. 03-3975)
(Our Order No. 018404 (C#) | 0000003 (M#)

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficiencies only) now or hereafter relative to this application and the resulting Official Document under Rule 20, or credit any overpayment, to our Accounting/Order Nos. shown above, for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal sheet is filed.

Query: Is appeal deadline now? If so, file Notice of Appeals separately

Pillsbury Winthrop LLP
Intellectual Property Group
By Atty. Brian Siritzky Reg. No. 37497
Sig.
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McLean, VA 22102
Tel: (703) 905-2000
Fax: (703) 905-2500
Tel. (703) 905-2185

Atty/Sec: BS/BS

NOTE: File this cover sheet in duplicate with PTO receipt (PAT-103A) and attachments

#11D
10/17/01 A.W.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of :

FARBER ET AL. : Group Art Unit: 2177

Appln. No.: 09/283,160 : Examiner: HOMERE, J.

Filed: April 1, 1999

EXPEDITED EXAMINATION

For: **IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA** (As Amended)

October 10, 2001

* * * * * *

SUPPLEMENTAL AMENDMENT

Honorable Commissioner of Patents
And Trademarks
Washington, D.C. 20231

Sir:

Please amend this application as follows:

IN THE CLAIMS:

Please cancel claims 107, 108, and 110-119.

IN THE SPECIFICATION:

Please amend the specification as follows:

At page 7, replace the paragraph at lines 31-33 with:

D1

FIGURES 1(a) and 1(b) depict a typical data processing system in which a preferred embodiment of the present invention operates;

At page 8, replace the paragraph at lines 7-12 with:

D2

An embodiment of the present invention is now described with reference to a typical data processing system 100, which, with reference to FIGURES 1(a) and 1(b), includes one or more processors (or computers) 102 and various storage devices 104 connected in some way, for example by a bus 106.

At page 30, replace the paragraph at lines 7-13 with:

D3

This mechanism allows a processor to locate a file or data item from a remote source of True Files, when a specific source is unknown or unavailable. A client processor system may ask one of several or many sources whether it can supply a data object with a given True Name. The steps to perform this mechanism are as follows (with reference to FIGURES 16(a) and 16(b)).

At page 31, replace the paragraph at lines 15-22 with:

D4

This mechanism is used when a True Name is known and a locally accessible copy of the corresponding file or data item is required. This mechanism makes it possible to actually read the data in a True File. The mechanism takes a True Name and returns when there is a local, accessible copy of the True File in the True File registry 126. This mechanism is described here with reference to the flow chart of FIGURES 17(a) and 17(b).

At page 32, replace the paragraph at lines 16-28 with:

D5

A scratch copy of a file is required when a file is being created or is about to be modified. The scratch copy is stored in the file system of the underlying operating system. The scratch copy is eventually assimilated when the audit file record entry 146 is processed by the Process Audit File Entry primitive mechanism. This Create Scratch File mechanism requires a local directory extensions table entry record 138. When it succeeds, the local directory extensions table entry record 138 contains the scratch file ID of a scratch file that is not contained in the True File registry 126 and that may be modified. This mechanism is now described with reference to FIGURES 18(a) and 18(b).

At page 33, lines 30-36, replace the paragraph with:

D6

This mechanism freezes a directory in order to calculate its True Name. Since the True Name of a directory is a function of the files within the directory, they must not change during the computation of the True Name of the directory. This mechanism requires the pathname of a directory to freeze. This mechanism is described with reference to FIGURES 19(a) and 19(b).

At page 38, replace the paragraph at lines 10-20 with:

D7

A mechanism to open a file is described with reference to FIGURES 26(a) and 26(b). This mechanism is given as input a pathname and the type of access required for the file (for example, read, write, read/write, create, etc.) and produces either the File ID of the file to be opened or an indication that no file should be opened. The local directory extensions table record 138 and region table record 142 associated with the opened file are associated with the open file for later use in other processing functions which refer to the file, such as read, write, and close.

At page 41, replace the paragraph at lines 15-16 with:

D8

The process of deleting a file, for a given pathname, is described here with reference to FIGURES 27(a) and 27(b).

REMARKS

By this Amendment, claims 107, 108 and 110-119 have been canceled without prejudice or disclaimer of their subject matter. The Specification has also been amended. When formal drawings were prepared for this case, Figures 1, 16-19, 26 and 27, originally each on one page, had each to be split over two pages. The formal drawings are being filed herewith, along with a Drawing Change Authorization Request. The specification has been amended to change the numbering of the figures accordingly. Specifically, the Specification has been amended as follows:

Page 7, line 31, change "FIGURE 1" to --FIGURES 1(a) and 1(b)--.
Page 8, line 9, change "FIGURE 1" to --FIGURES 1(a) and 1(b)--.
Page 30, line 13, change "FIGURE 16" to --FIGURES 16(a) and 16(b)--.
Page 31, line 22, change "FIGURE 17" to --FIGURES 17(a) and 17(b)--.
Page 32, line 28, change "FIGURE 18" to --FIGURES 18(a) and 18(b)--.
Page 33, line 28, change "FIGURE 19" to --FIGURES 19(a) and 19(b)--.
Page 38, line 11, change "FIGURE 26" to --FIGURES 26(a) and 26(b)--.
Page 41, line 16, change "FIGURE 27" to --FIGURES 27(a) and 27(b)--.

No new matter has been added by these amendments, and approval of these amendments is respectfully requested.

Respectfully submitted,

By _____

Brian Siritzky
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Tel. No.: (703) 905-2185
Fax No.: (703) 905-2500

1600 Tysons Boulevard,
McLean, Virginia 22102
(703) 905-2000

Appendix showing marked up changes to specification:

Page 7, lines 31-33:

[FIGURE 1 depicts] Figures 1(a) and 1(b) depict a typical data processing system in which a preferred embodiment of the present invention operates;

Page 8, lines 7-12:

An embodiment of the present invention is now described with reference to a typical data processing system 100, which, with reference to [FIGURE 1] FIGURES 1(a) and 1(b), includes one or more processors (or computers) 102 and various storage devices 104 connected in some way, for example by a bus 106.

Page 30, lines 7-13:

This mechanism allows a processor to locate a file or data item from a remote source of True Files, when a specific source is unknown or unavailable. A client processor system may ask one of several or many sources whether it can supply a data object with a given True Name. The steps to perform this mechanism are as follows (with reference to [FIGURE 16] FIGURES 16(a) and 16(b)).

At page 31, replace the paragraph at lines 15-22 with:

This mechanism is used when a True Name is known and a locally accessible copy of the corresponding file or data item is required. This mechanism makes it possible to actually read the data in a True File. The mechanism takes a True Name and returns when there is a local, accessible copy of the True File in the True File registry 126. This mechanism is described here with reference to the flow chart of [FIGURE 17] FIGURES 17(a) and 17(b).

At page 32, replace the paragraph at lines 16-28 with:

A scratch copy of a file is required when a file is being created or is about to be modified. The scratch copy is stored in the file system of the underlying operating system. The scratch copy is eventually assimilated when the audit file record entry 146 is processed by the Process Audit File Entry primitive mechanism. This Create Scratch File mechanism requires a local directory extensions table entry record 138. When it succeeds, the local directory extensions table entry record 138 contains the scratch file ID of a scratch file that is not contained in the True File registry 126 and that may be modified. This mechanism is now described with reference to [FIGURE 18] FIGURES 18(a) and 18(b).

At page 33, lines 30-36, replace the paragraph with:

This mechanism freezes a directory in order to calculate its True Name. Since the True Name of a directory is a function of the files within the directory, they must not change during the computation of the True Name of the directory. This mechanism requires the pathname of a directory to freeze. This mechanism is described with reference to [FIGURE 19] FIGURES 19(a) and 19(b).

At page 38, replace the paragraph at lines 10-20 with:

A mechanism to open a file is described with reference to [FIGURE 26] FIGURES 26(a) and 26(b). This mechanism is given as input a pathname and the type of access required for the file (for example, read, write, read/write, create, etc.) and produces either the File ID of the file to be opened or an indication that no file should be opened. The local directory extensions table record 138 and region table record 142 associated with the opened file are associated with the open file for later use in other processing functions which refer to the file, such as read, write, and close.

At page 41, replace the paragraph at lines 15-16 with:

The process of deleting a file, for a given pathname, is described here with reference to [FIGURE 27] FIGURES 27(a) and 27(b).

FROM
Intellectual Property Group of
Pillsbury Winthrop LLP
Attorneys at Law
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In re PATENT APPLICATION of
Inventor(s) Farber et al
Appln. No. 09/283,160 (series code ↑ ↑ serial no.)
Filed: April 1, 1999
TITLE: IDENTIFYING AND REQUESTING DATA IN A NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Group Art Unit: 2771
Examiner: HOMERE
Atty. Dkt. PM 252465 M#
Date: October 9, 2001

Name or type of signed paper being transmitted:
Terminal Disclaimer by Attorney of REcord

MESSAGE:
Examiner Homere, Here's the Terminal Disclaimer along with an authorization to charge the appropriate fee. Thanks,
Brian Siritzky

URGENT EXAMINER HOMERE URGENT
703 308 6647

Official
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Name Brian Siritzky Sig. _____ Date October 9, 2001

007018/0252465
C# / M#

PAT-286 7/99

FROM
Intellectual Property Group of
Pillsbury Winthrop LLP
Attorneys at Law
1600 Tysons Boulevard
McLean, VA 22102
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Our facsimile #: (703) 905-2500

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Group Art Unit: 2771
Examiner: HOMERE
Atty. Dkt. PM 252465
M#
Date: October 9, 2001

Name or type of signed paper being transmitted:
Terminal Disclaimer by Attorney of REcord

MESSAGE:
Examiner Homere, Here's the Terminal Disclaimer along with an authorization to charge the appropriate fee. Thanks,
Brian Siritzky

URGENT EXAMINER HOMERE URGENT
703 308 6647

(ATTN: Atty/Sec... Transmit only one paper herewith. For papers not acceptable by fax, see back side or LAN Forms Directory PAT-286 Rear. Do not file originals but fasten them in our file (left side) with this sheet and fax receipt on top. Do NOT send the originals nor a confirmation copy to the PTO.)

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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Name Brian Siritzky Sig. Date October 9, 2001

007018/0252465
C# / M#

PAT-286 7/99

 #10

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of
Inventor(s): Farber et al

PATENT APPLICATION

Appln. No 09/283160
series code ↑ ↑ serial no.

Group Art Unit: 2771

Filed: April 1, 1999

Examiner: Jean HOMERE

Title: IDENTIFYING AND REQUESTING DATA IN A NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

TERMINAL DISCLAIMER

(By Attorney)

Re Double-Patenting Rejection

Hon. Commissioner of Patents and Trademarks
Washington, D C. 20231

Sir:

The undersigned petitioner, an attorney of record, is hereby acting for the undernamed entities which are jointly the 100% owners of all rights, title and interests in and to the subject application:

1. ☐ by virtue of being the inventor(s) and having not assigned this application
2. ☒ as shown by the Assignment recorded 10/5/2000 on Reel 011233 at Frame 0164 (date)
3. ☐ as shown by the attached copy of the Assignment filed for recordal on _____ (date)
4. ☒ and, if the assignor in that Assignment is not the original owner (inventor(s)), the chain of title from the original owner to that Assignment as recorded on Reel 9873 at Frame 0463 Reel _____ at Frame _____ Reel _____ at Frame _____

and hereby disclaims (except as provided below) the terminal part of the statutory term of any patent granted on the subject application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. 154 to 156 and 173, as presently shortened (if at all) by any terminal disclaimer of:

5. ☐ any patent granted in regard to U.S. Application No. 0 / _____ filed _____ *
6. ☒ the earlier granted United States Patent No. 5,978,791 *

to which said entities also have legal title. Petitioner hereby reserves the right to extend the term of the patent, which issues on this application, for regulatory delay or otherwise as the law allows. Petitioner hereby agrees that any patent so granted on the subject application shall be enforceable only for and during such period that it and the patent in the above line numbered 5 or 6 are commonly owned. This agreement runs with any patent granted on the subject application and is binding upon the grantee, its successors or assigns.

10/11/2001 BMALLI 00000002 033975 09283160
01 FC:148 110.00 CH

Official

In making the above disclaimer, petitioner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 to 156 and 173 of the patent in line numbered 5 or 6 above, as presently shortened by any terminal disclaimer, of the above-listed patent in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is otherwise terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Entities: **Digital Island, Inc.** and **Kinetech, Inc.**

Atty. Sig. _____

Attorney of Record

Name: Brian Siritzky

Reg. No.: 37497

Date: October 9, 2001

* Attorney and client: Please note on that other file and also this appln. file not to assign either separately in view of this disclaimer

☒ Terminal disclaimer fee under 37 CFR 1.20(d) is enclosed.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Farber et al.
Appln. No.: 09 (Series Code ↑) 283,160 (Serial No. ↑)
Filed: April 1, 1999
Hon. Commissioner of Patents
Washington, D.C. 20231

Group Art Unit 2771
Examiner. Homere, Jean
Atty. Dkt. P 252465 (M#) TrueNames (Client Ref)
Appln. Title: IDENTIFYING AND REQUESTING DATA IN A NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Sir:

REPLY/AMENDMENT/LETTER

Date: October 9, 2001

This is a reply/amendment/letter in the above-identified application and includes the herewith attachment of same date and subject which is incorporated hereinto by reference and the signature below is treated as the signature to the attachment in absence of a signature thereto

FEE REQUIREMENTS FOR CLAIMS AS AMENDED

1. Small Entity claim
A ☒ NOT made
B. ☐ Withdrawn
C. ☐ made herewith
D ☐ made previously
For B & C See Required Separate Paper (Pat-256)

	Claims remaining after amendment	Highest number previously paid for		Present Extra	Large/Small Entity	Additional Fee	Fee Code Lg/Sm
2. Total Effective Claims		**minus	0	0	x $18/$9 =	+ $0	103/203
3 Independent Claims		***minus	0	0	x $84/$42 =	+ $0	102/202
4. If amendment enters proper multiple dependent claim(s) into this application for first time (leave blank if this is a reissue application) ... add					+ $280/$140 =	+ $0	104/204
5. Original due Date: ☐ NONE							
6 Petition is hereby made to extend the original due date to cover the date this response is filed for which the requisite fee is attached (1 mo) (2 mos) (3 mos) (Usable only for ≤ 2mo OA - - - 4 mos) (Usable only for 30 day/1mo.OA - - - 5 mos)				$110/$55 = $400/$200 = $920/$460 = $1,440/$720= $1,960/$980=	+ $0		115/215 116/216 117/217 118/218 128/228
7. Enter any previous extension fee paid since above original due date and subtract					- $0		
8. Extension Fee Attached						+ $0	
9. If Terminal Disclaimer attached, add Rule 20(d) official fee					+ $110/$55	+ $110	148/248
10. If IDS attached requires Official Fee under Rule 97 (c), ... add					+ $130	+ $0	126
or if Rule 97(d) Request ... add					+ $180		126
11. After-Final Request Fee per rules 129(a) and 17(r)					+ $740/370	+ $0	146/246
12. No. of additional inventions for examination per Rule 129(b)					x $740/370 ea	+ $0	149/249
13. Request for Continued Examination (RCE)					+ $740/370	+ $0	1179/1279
14. Petition fee for						+ $0	
15. TOTAL FEE ~~ENCLOSED~~ AUTHORIZED =						$110	

16. *If the entry in this space is less than entry in next space, the "Present Extra" result is "0"
17. **If the "Highest number previously paid for" in this space is less than 20, write "20" in this space
18 ***If the "Highest number previously paid for" in this space is less than 3, write "3" in this space

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(Our Order No. 018404 (C#) 0000003 (M#)

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This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal sheet is filed.

Query: Is appeal deadline now? If so, file Notice of Appeals separately

Pillsbury Winthrop LLP
Intellectual Property Group
By Atty. Brian Siritzky Reg. No. 37497
Sig.
1600 Tysons Boulevard
McLean, VA 22102
Tel: (703) 905-2000
Fax: (703) 905-2500
Tel. (703) 905-2185

Atty/Sec: BS/BS

NOTE: File this cover sheet in duplicate with PTO receipt (PAT-103A) and attachments

PAT-120 10/01

30227099_1.DOC

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10/17/01
A.W.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of :

FARBER ET AL. : Group Art Unit: 2177

Appln. No.: 09/283,160 : Examiner: HOMERE, J.

Filed: April 1, 1999

EXPEDITED EXAMINATION

For: **IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA** (As Amended)

October 10, 2001

* * * * * *

DRAWING CHANGE AUTHORIZATION REQUEST

Honorable Commissioner of Patents
And Trademarks
Washington, D.C. 20231

Sir:

Submitted herewith are sixteen (16) sheets of proposed drawing corrections with the changes thereto marked in red. When formal drawings were prepared for this case, Figures 1, 16-19, 26 and 27, originally each on one page, had each to be split over two pages. The only changes made have been to the figure numbers (e.g., Figure 1 becomes Figures 1(a) and 1(b), etc.). The specification is being amended by a Supplemental Amended filed herewith.

No new matter has been added by these drawing changes, and their approval is respectfully requested.

Respectfully submitted,

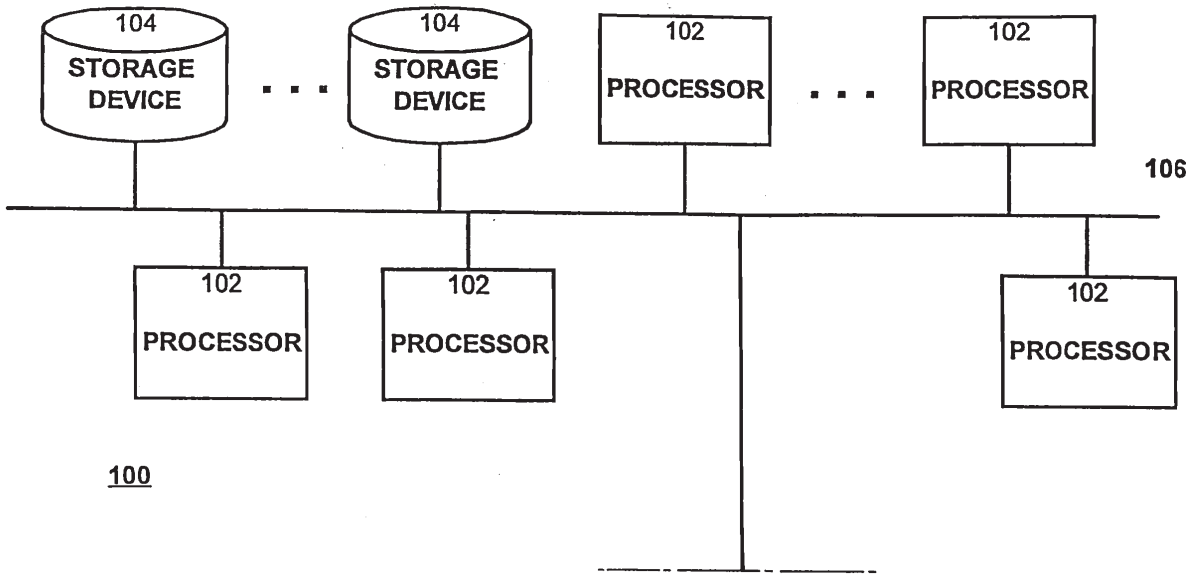
Approved
10/24/01

By _____

Brian Siritzky
Reg. No. 37497
Tel. No.: (703) 905-2185
Fax No.: (703) 905-2500

1600 Tysons Boulevard,
McLean, Virginia 22102
(703) 905-2000

FIG. 1(a)


104
STORAGE DEVICE
104
STORAGE DEVICE
102
PROCESSOR
102
PROCESSOR
106
102
PROCESSOR
102
PROCESSOR
102
PROCESSOR
100

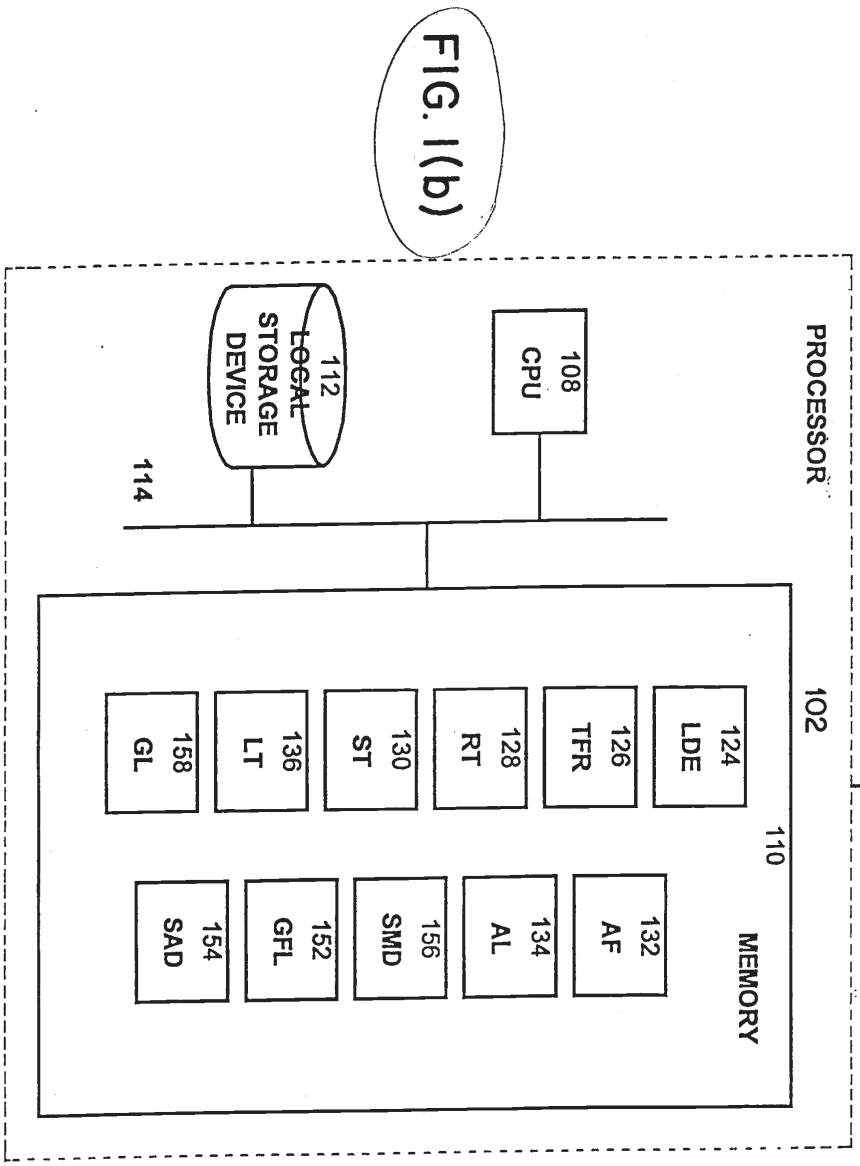
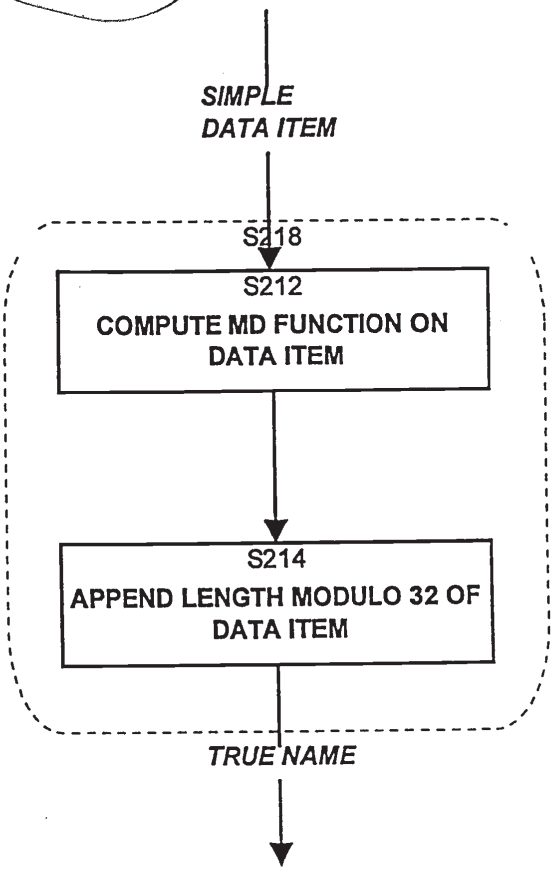

PROCESSOR
102
MEMORY
110
124
LDE
126
TFR
128
RT
130
ST
136
LT
158
GL
132
AF
134
AL
156
SMD
152
GFL
154
SAD
108
CPU
112
LOCAL
STORAGE
DEVICE
114

FIG. 1(b)

FIG. 10(a)


SIMPLE
DATA ITEM
S218
S212
COMPUTE MD FUNCTION ON
DATA ITEM
S214
APPEND LENGTH MODULO 32 OF
DATA ITEM
TRUE NAME

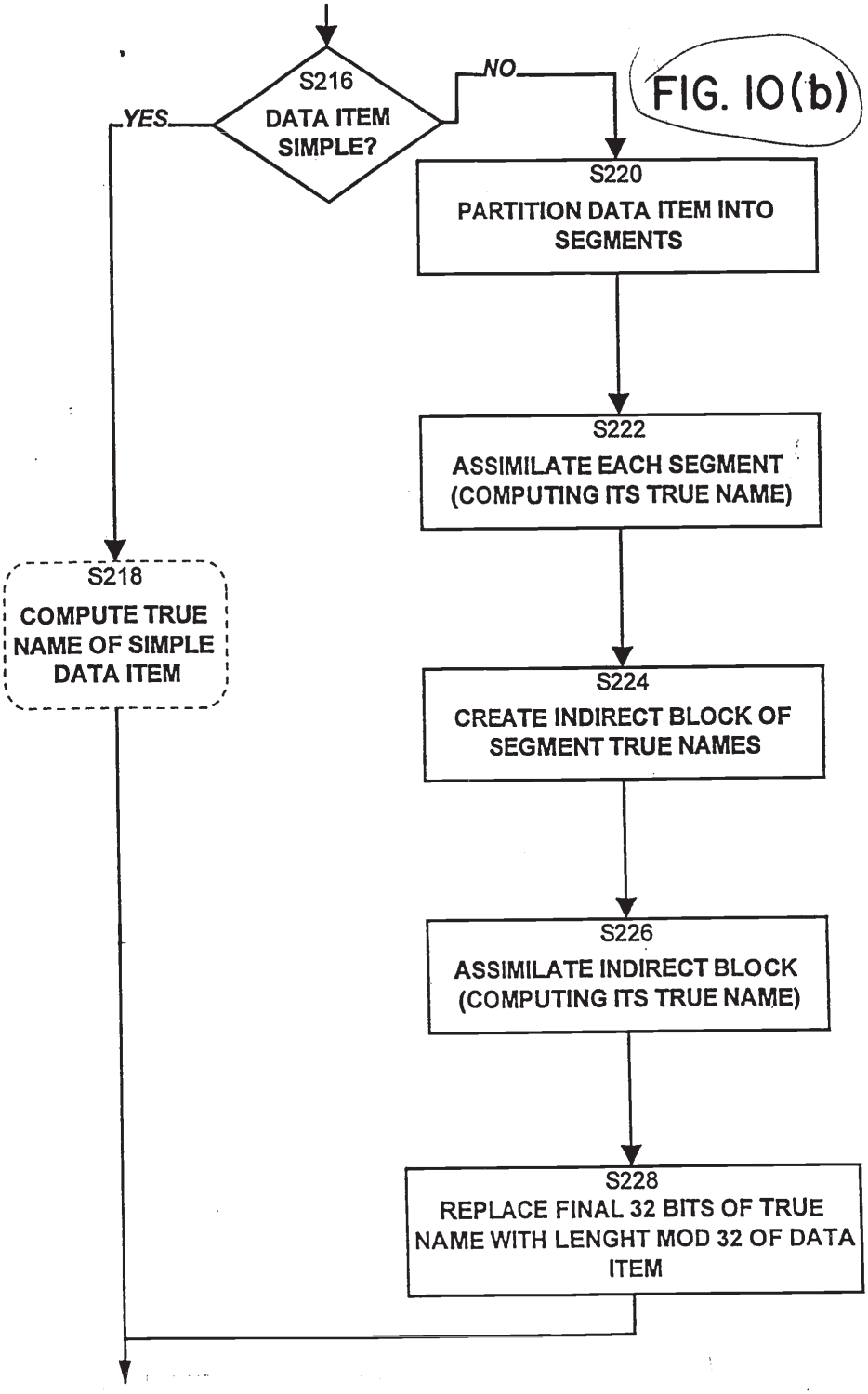

S216
DATA ITEM SIMPLE?
YES
NO
S218
COMPUTE TRUE NAME OF SIMPLE DATA ITEM
S220
PARTITION DATA ITEM INTO SEGMENTS
S222
ASSIMILATE EACH SEGMENT (COMPUTING ITS TRUE NAME)
S224
CREATE INDIRECT BLOCK OF SEGMENT TRUE NAMES
S226
ASSIMILATE INDIRECT BLOCK (COMPUTING ITS TRUE NAME)
S228
REPLACE FINAL 32 BITS OF TRUE NAME WITH LENGHT MOD 32 OF DATA ITEM

FIG. 10(b)

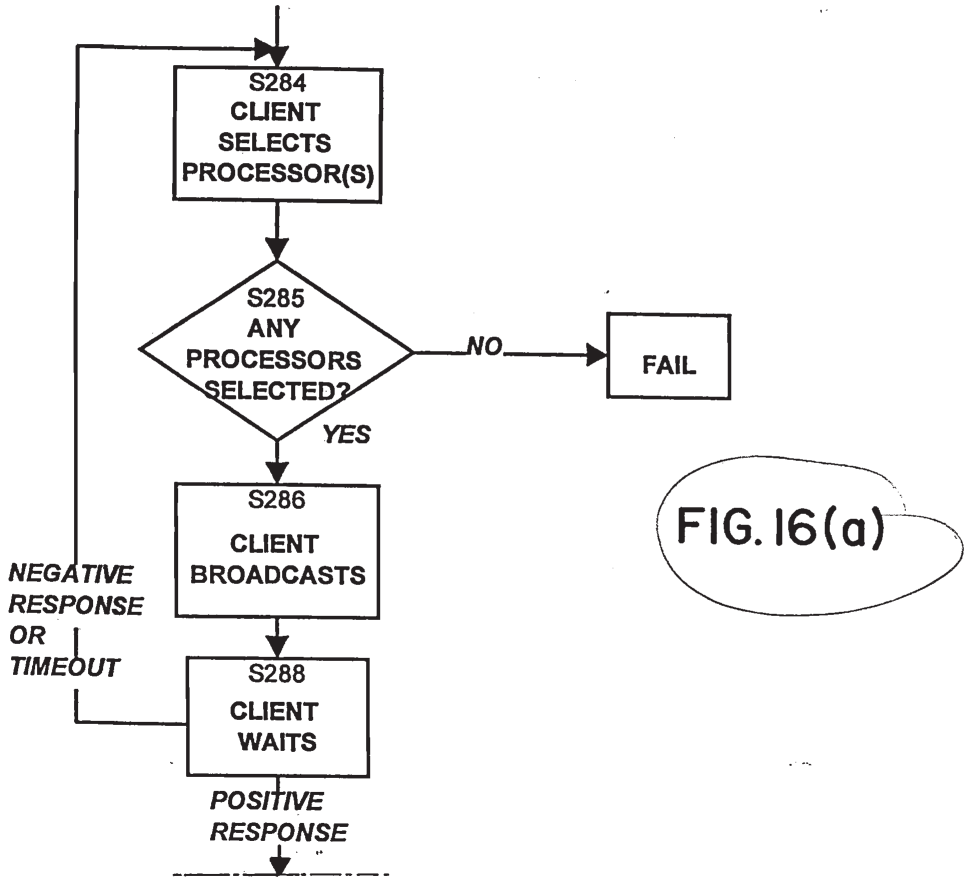

S284
CLIENT
SELECTS
PROCESSOR(S)
S285
ANY
PROCESSORS
SELECTED?
NO
FAIL
YES
S286
CLIENT
BROADCASTS
NEGATIVE
RESPONSE
OR
TIMEOUT
S288
CLIENT
WAITS
POSITIVE
RESPONSE

FIG. 16(a)

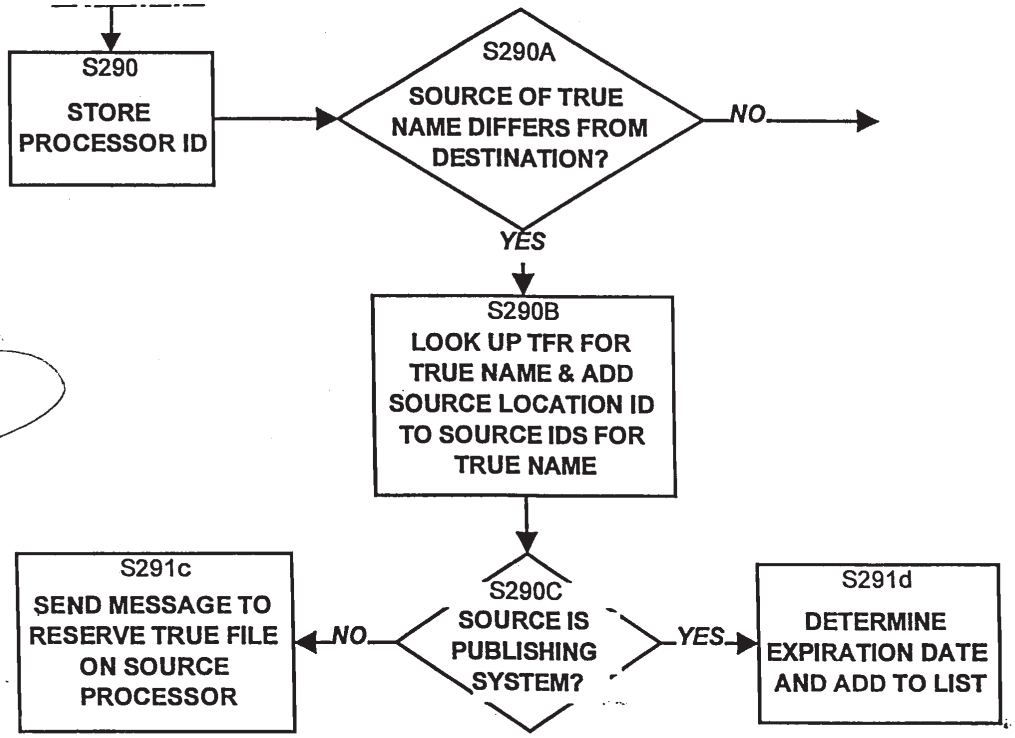

S290
STORE PROCESSOR ID
S290A
SOURCE OF TRUE NAME DIFFERS FROM DESTINATION?
NO
YES
S290B
LOOK UP TFR FOR TRUE NAME & ADD SOURCE LOCATION ID TO SOURCE IDS FOR TRUE NAME
S290C
SOURCE IS PUBLISHING SYSTEM?
NO
YES
S291c
SEND MESSAGE TO RESERVE TRUE FILE ON SOURCE PROCESSOR
S291d
DETERMINE EXPIRATION DATE AND ADD TO LIST

FIG. 16(b)

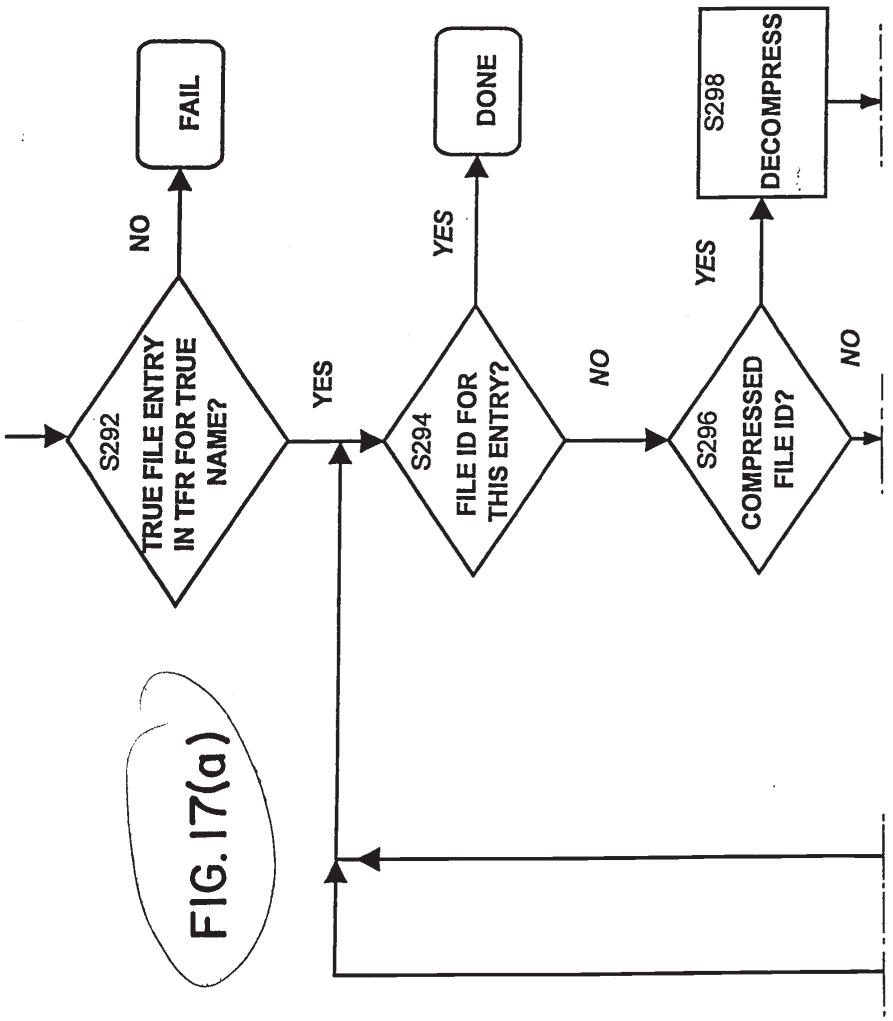

S292
TRUE FILE ENTRY IN TFR FOR TRUE NAME?
NO
FAIL
YES
S294
FILE ID FOR THIS ENTRY?
YES
DONE
NO
S296
COMPRESSED FILE ID?
YES
S298
DECOMPRESS
NO

FIG. 17(a)

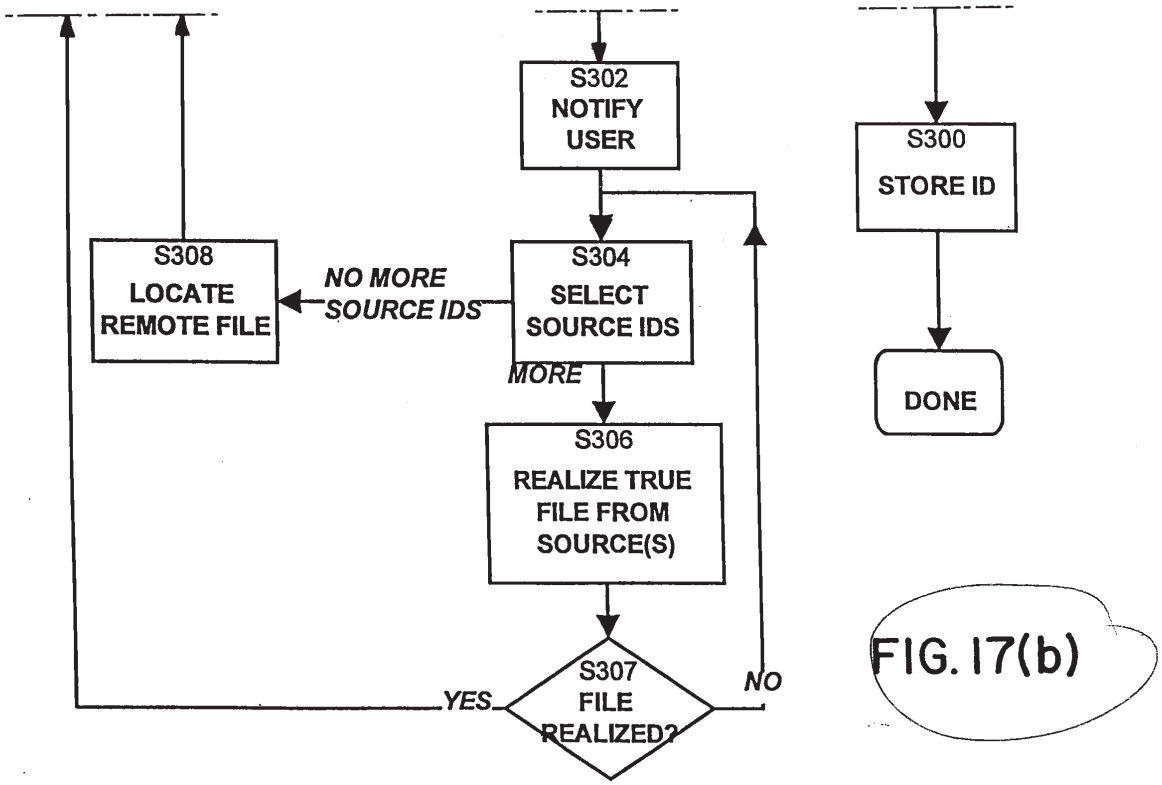

S302
NOTIFY USER
S300
STORE ID
S308
LOCATE REMOTE FILE
NO MORE SOURCE IDS
S304
SELECT SOURCE IDS
MORE
DONE
S306
REALIZE TRUE FILE FROM SOURCE(S)
S307
FILE REALIZED?
YES
NO

FIG. 17(b)

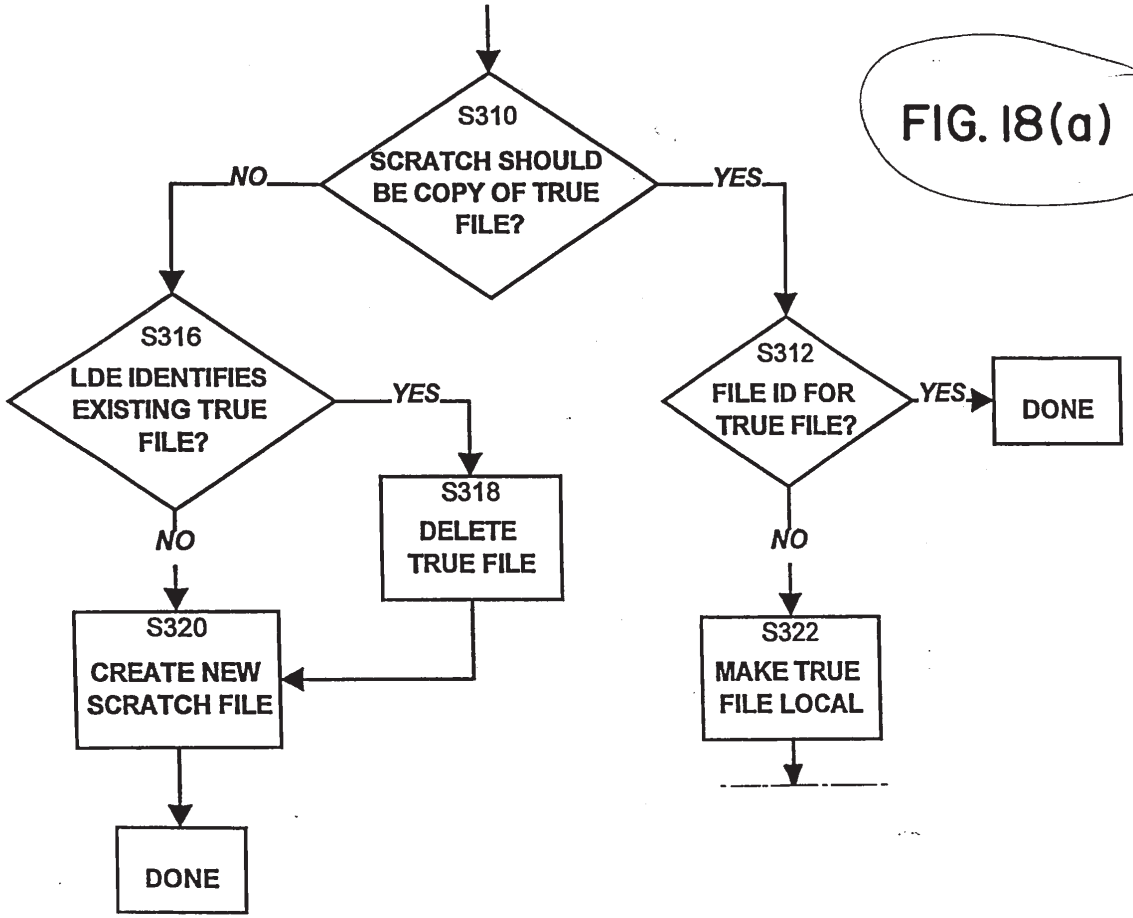

S310
SCRATCH SHOULD BE COPY OF TRUE FILE?
NO
YES
S316
LDE IDENTIFIES EXISTING TRUE FILE?
YES
NO
S318
DELETE TRUE FILE
S320
CREATE NEW SCRATCH FILE
DONE
S312
FILE ID FOR TRUE FILE?
YES
DONE
NO
S322
MAKE TRUE FILE LOCAL

FIG. 18(a)

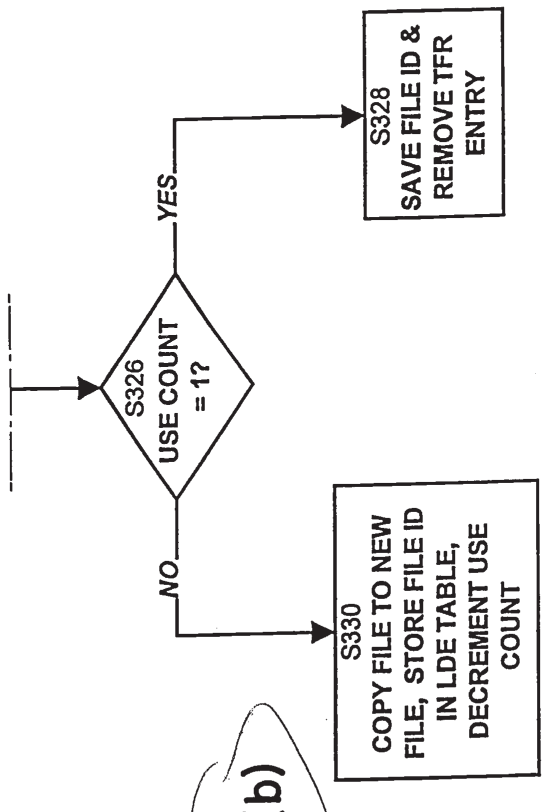

S326
USE COUNT
= 1?
YES
NO
S328
SAVE FILE ID &
REMOVE TFR
ENTRY
S330
COPY FILE TO NEW
FILE, STORE FILE ID
IN LDE TABLE,
DECREMENT USE
COUNT

FIG. 18(b)

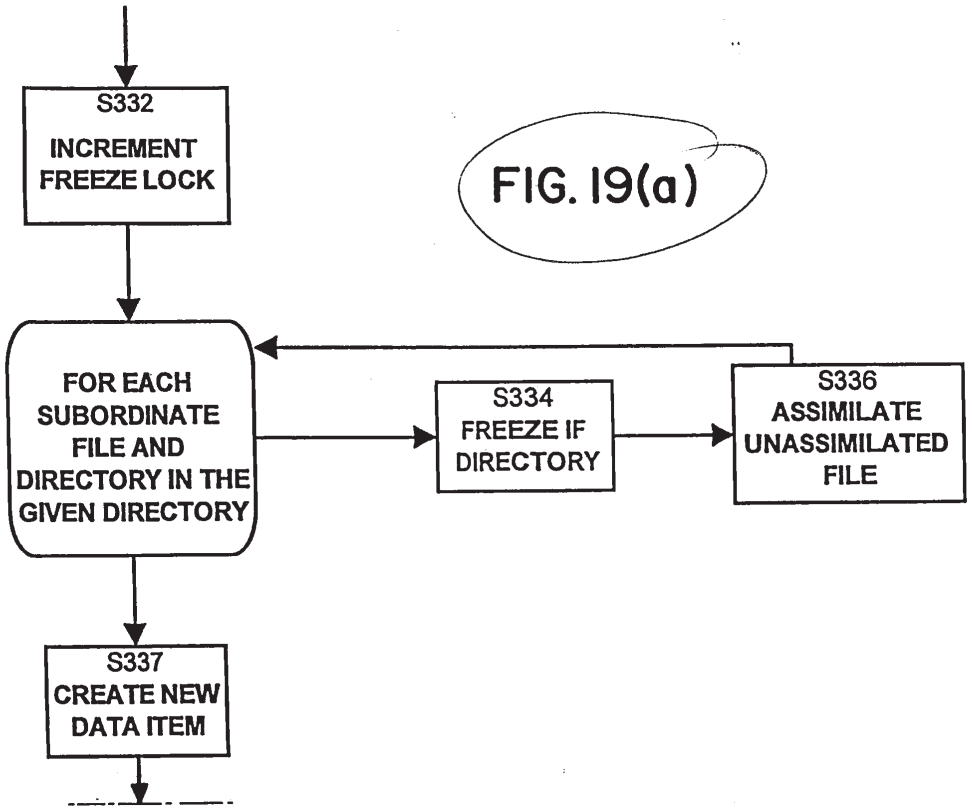

S332
INCREMENT FREEZE LOCK
FOR EACH SUBORDINATE FILE AND DIRECTORY IN THE GIVEN DIRECTORY
S334
FREEZE IF DIRECTORY
S336
ASSIMILATE UNASSIMILATED FILE
S337
CREATE NEW DATA ITEM

FIG. 19(a)

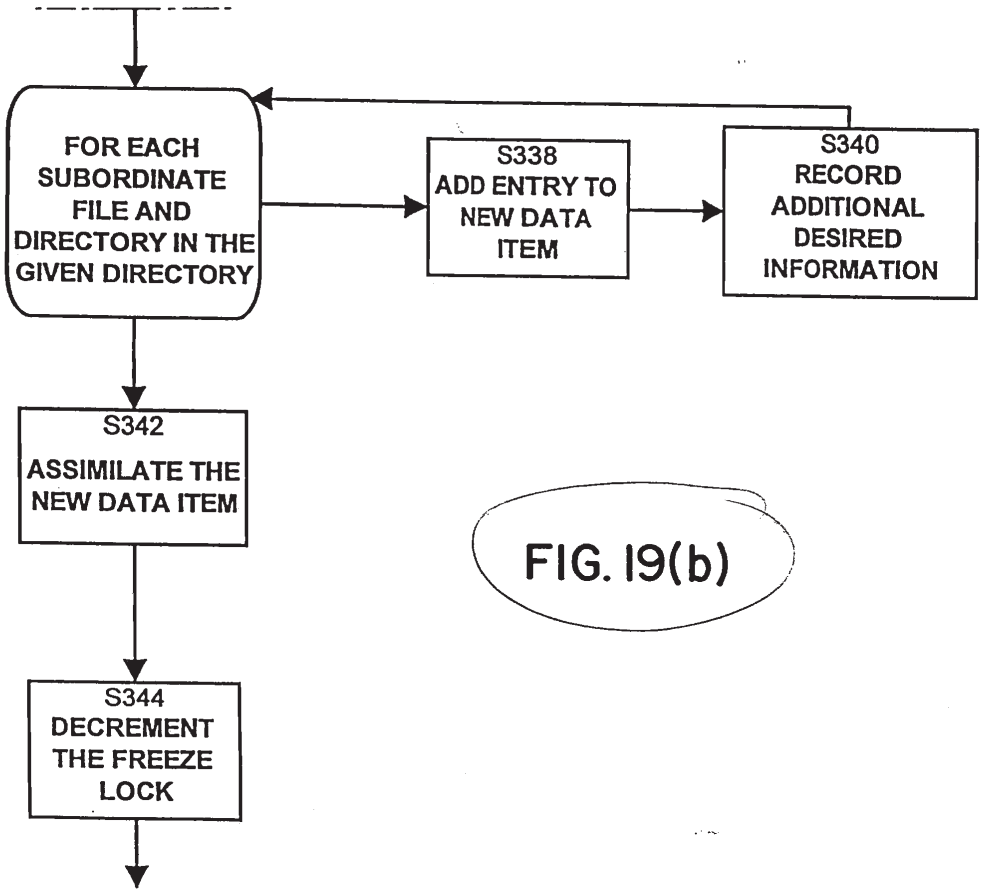
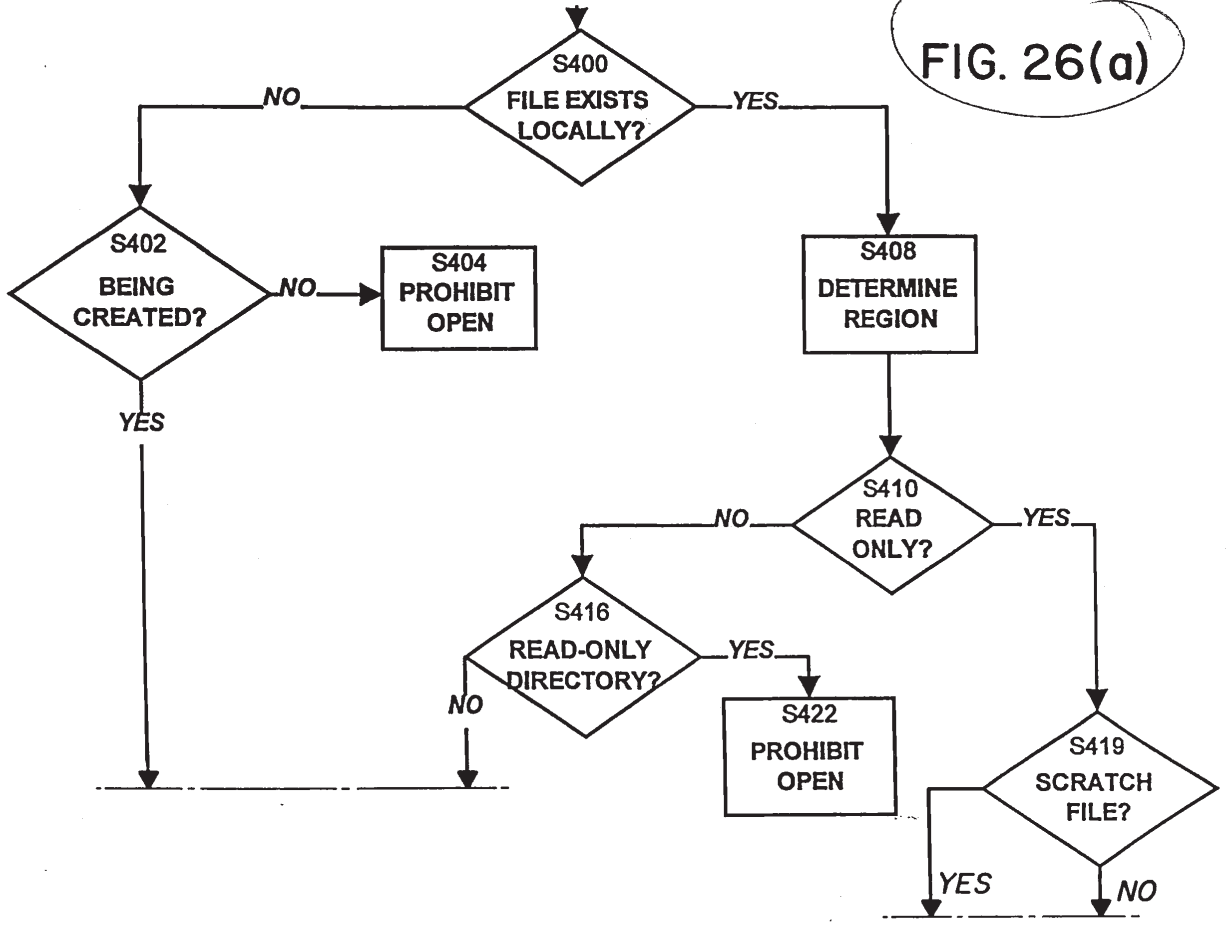

FOR EACH SUBORDINATE FILE AND DIRECTORY IN THE GIVEN DIRECTORY
S338
ADD ENTRY TO NEW DATA ITEM
S340
RECORD ADDITIONAL DESIRED INFORMATION
S342
ASSIMILATE THE NEW DATA ITEM
S344
DECREMENT THE FREEZE LOCK

FIG. 19(b)

FIG. 26(a)


S400
FILE EXISTS LOCALLY?
NO
YES
S402
BEING CREATED?
NO
S404
PROHIBIT OPEN
YES
S408
DETERMINE REGION
S410
READ ONLY?
NO
YES
S416
READ-ONLY DIRECTORY?
YES
NO
S422
PROHIBIT OPEN
S419
SCRATCH FILE?
YES
NO

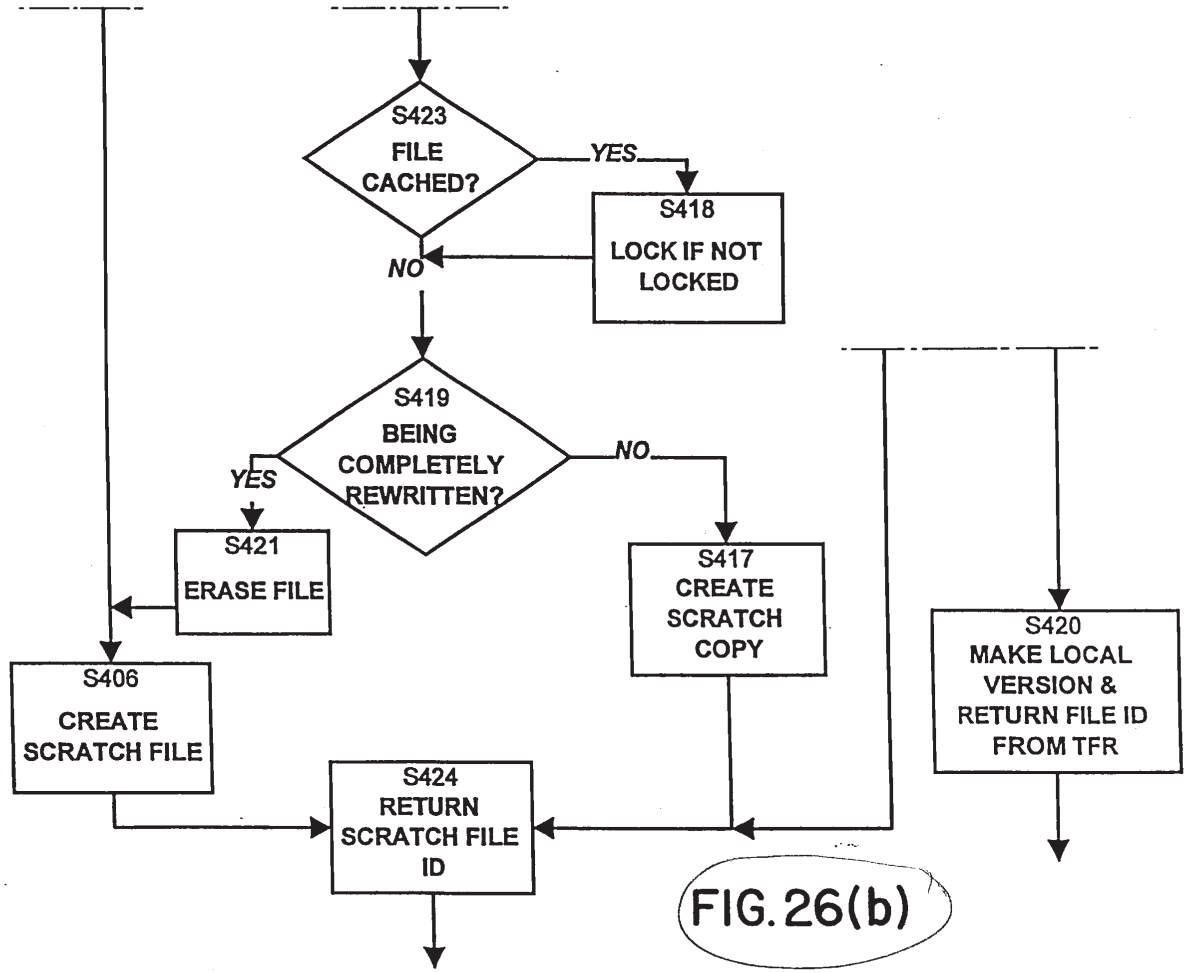

S423
FILE CACHED?
YES
S418
LOCK IF NOT LOCKED
NO
S419
BEING COMPLETELY REWRITTEN?
YES
NO
S421
ERASE FILE
S417
CREATE SCRATCH COPY
S420
MAKE LOCAL VERSION & RETURN FILE ID FROM TFR
S406
CREATE SCRATCH FILE
S424
RETURN SCRATCH FILE ID

FIG. 26(b)

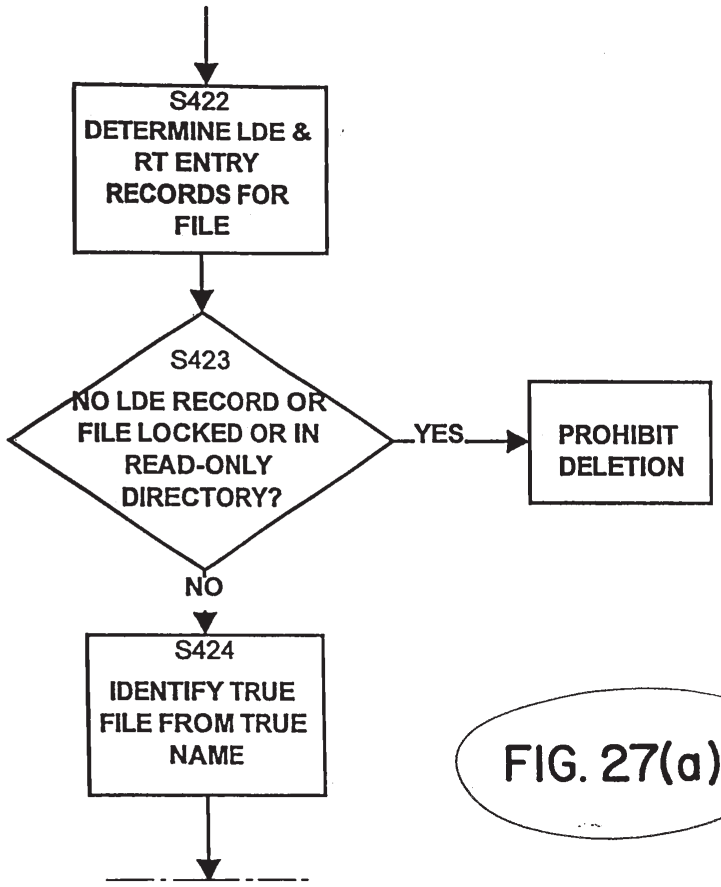

S422
DETERMINE LDE & RT ENTRY RECORDS FOR FILE
S423
NO LDE RECORD OR FILE LOCKED OR IN READ-ONLY DIRECTORY?
YES
PROHIBIT DELETION
NO
S424
IDENTIFY TRUE FILE FROM TRUE NAME

FIG. 27(a)

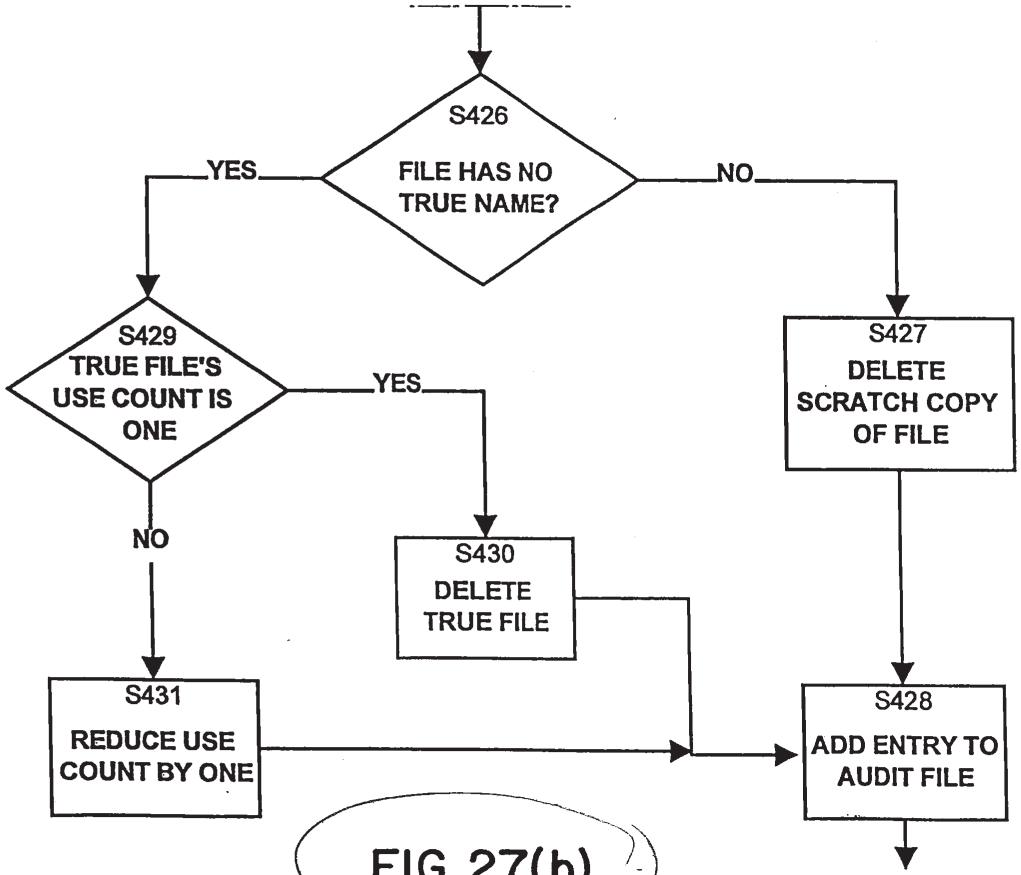

S426
FILE HAS NO TRUE NAME?
YES
NO
S429
TRUE FILE'S USE COUNT IS ONE
YES
NO
S427
DELETE SCRATCH COPY OF FILE
S430
DELETE TRUE FILE
S431
REDUCE USE COUNT BY ONE
S428
ADD ENTRY TO AUDIT FILE

FIG. 27(b)

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/283,160	04/01/99	FARBER D	PM252465

TM31/1025

PILLSBURY MADISON & SUTRO
INTELLECTUAL PROPERTY GROUP
1100 NEW YOUK AVENUE NW
NINTH FLOOR EAST TOWER
WASHINGTON DC 20005-3918

EXAMINER	
HOMERE,J	#19
ART UNIT	**PAPER NUMBER**
2177	

DATE MAILED: 10/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev.11/00)

1- File Copy

Notice of Allowability

Application No.	Applicant(s)
09/283,160	Farber et al.
Examiner	**Art Unit**
Jean R. Homere	2177

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed on 10/10/2001*

2. ☒ The allowed claim(s) is/are *54-106, 109 and 120, now renumbered as 1-55*

3. ☐ The drawings filed on _____ are acceptable as formal drawings.

4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

   a) ☐ All b) ☒ Some* c) ☒ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____.
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   *Certified copies not received: _____

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION. This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).**

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

7. ☒ Applicant MUST submit NEW FORMAL DRAWINGS

   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

   1) ☐ hereto or 2) ☐ to Paper No. _____.

   (b) ☒ including changes required by the proposed drawing correction filed *Oct 10, 2001*, which has been approved by the examiner.

   (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

1 ☐ Notice of References Cited (PTO-892)
2 ☐ Notice of Informal Patent Application (PTO-152)
3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
4 ☐ Interview Summary (PTO-413), Paper No. _____.
5 ☒ Information Disclosure Statement(s) (PTO-1449), Paper No(s). 9
6 ☐ Examiner's Amendment/Comment
7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
8 ☐ Examiner's Statement of Reasons for Allowance
9 ☐ Other

JEAN R. HOMERE
PRIMARY EXAMINER
ART UNIT 2177

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

TM31/1025

PILLSBURY MADISON & SUTRO
INTELLECTUAL PROPERTY GROUP
1100 NEW YOUK AVENUE NW
NINTH FLOOR EAST TOWER
WASHINGTON DC 20005-3918

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
09/283,160	04/01/99	055	HOMERE, J	2177	10/25/01
First Named Applicant FARBER,			35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION: IDENTIFYING DATA REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH AR E BASED ON CONTENTS OF DATA

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 PM252465	707-002.000	Z99	UTILITY	YES	$640.00	01/25/02

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

#14
1/17/02
A.W.

EXPEDITED EXAMINATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Match and Return

In re PATENT APPLICATION of

FARBER et al.

Appln. No. 09/283,160

Filed: April 1, 1999

OIPE NOV 21 2001 PATENT & TRADEMARK OFFICE

Batch: Z99

Group Art Unit: 2177

Examiner: Homere, Jean R.

For: **Identifying and Requesting Data In Network Using Identifiers Which Are Based On Contents Of Data** (As Amended)

* * * * *

November 21, 2001

COMMUNICATION REGARDING PRIORITY PRINTING

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Match and Return

Sir:

This case is on Accelerated Examination. Accordingly, pursuant to MPEP §708.02 and §1309, it is respectfully submitted that this application be given top priority for printing. The Issue Fee Transmittal and the issue fee check is enclosed.

Respectfully submitted,

PILLSBURY WINTHROP, LLP

By _____
for Brian Siritzky
Jean-Paul Hoffman
No. 42,663
Reg. No. 37497
Tel. No.: (703) 905-2185
Fax No.: (703) 905-2500

1600 Tysons Boulevard,
McLean, Virginia 22102
(703) 905-2000

Match and Return

#15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

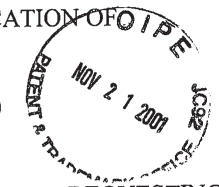
OFFICE OF PUBLICATIONS

In re PATENT APPLICATION OF

FARBER et al.

Appln. No.: 09/283,160

Filed: April 1, 1999



Batch No.: Z99

Group Art Unit: 2177

Examiner: J. Homere

Title: IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA (As Amended)

November 21, 2001

* * * * *

REQUEST FOR RETURN OF FORM PTO-1449

Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

A Form PTO-1449 was filed for this Application on April 1, 1999. Please send a copy of the Form PTO-1449, with the Examiner's initials in the left column. A copy of the Form PTO-1449 filed on April 1, 1999 is enclosed.

Respectfully submitted,

Pillsbury Winthrop LLP

By:_____

Brian Siritzky
Reg. No.: 37497
Tel. No.: (703) 905-2185
Fax No.: (703) 905-2000

for Jean-Paul Horstman
RD. 42,663

BS/JPH:ksh
1600 Tysons Boulevard
McLean, VA 22102
(703) 905-2000

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No.: R.53(B)(1) Div. of 08/960,079

Filing Date: April 1, 1999

Examiner: Homere, J. | Group Art Unit: 2776

Date: April 1, 1999 Page 1 of 3

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,888,681	12/1989	BARNES			
	BR	4,972,367	11/1990	BURKE			
	CR	5,050,212	09/1991	DYSON			
	DR	5,202,982	04/1993	GRAMLICH			
	ER	5,208,858	05/1993	VOLLERT			
	FR	5,301,316	05/1994	HAMILTON			
	GR	5,343,527	08/1994	MOORE			
	HR	4,571,700	02/1996	EMRY, JR.			
	IR	4,675,810	06/1987	GRUNER			
	JR	5,050,074	09/1991	MARCA			
	KR	5,276,901	01/1994	HOWELL			
	LR	5,384,565	01/1995	CANNON			
	MR	5,202,982	04/1993	GRAMLICH			
	NR	5,357,623	10/1994	MEGORY-COHEN			

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract Enclosed	English Abstract No	Translation Readily Available Enclose	Translation Readily Available No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Bert dem Boer et al., Collisions for the compression function of MD_5, pp. 292-304
	WR	Sakti Pramanik et al., Multi-Directory Hasing, 1993, Info. Sys., Vol. 18, No. 1, pp. 63-74
	XR	Murlidhar Koushik, Dynamic Hashing with Distributed Overflow Space: A File Organization with Good Insertion Performance, 1993, Info. Sys., Vol. 18, No. 5, pp. 299-317
	YR	Witold Litwin et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech. Report No. HPL-93-21, June 1993, pp. 1-22
	ZR	Yuliang Zheng et al., HAVAL - A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp. 83-105
	AAR	Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlinearity, Pieprzky, pp. 156-164

Examiner _____ Date Considered: _____

FORM PTO-1449 (modified) To: U.S. Department of Commerce (PM&S FORM PAT-1449) Patent and Trademark Office	Atty. Dkt. No.	M#	Client Ref.
		252465	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Applicant: FARBER et al.		
	Appln. No.: R.53(B)(1) Div. of 08/960,079		
	Filing Date: April 1, 1999		
Date: April 1, 1999 Page 2 of 3	Examiner: Homere, J.	Group Art Unit: 2776	

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	3,668,647	06/1992	EVANGELISTI			
	BR	4,215,402	07/1980	MITCHELL			
	CR	4,290,105	09/1981	CICHELLI			
	DR	4,376,299	03/1983	RIVEST			
	ER	4,405,829	09/1983	RIVEST			
	FR	4,412,285	10/1983	NECHES			
	GR	4,414,624	11/1983	SUMMER, JR.			
	HR	4,441,155	04/1984	FLETCHER			
	IR	4,464,713	08/1984	BENHASE			
	JR	5,772,933	03/1986	MATICK			
	KR	4,642,793	02/1987	MEADEN			
	LR	4,691,2999	09/1987	RIVEST			
	MR	4,725,945	02/1988	KRONSTADT			
	NR	4,773,039	09/1988	ZAMORA			

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Witold Litwin et al., Linear Hashing for Distributed Files, ACM SIGMOD, May 1993, pp. 327-336
	WR	Ming-Ling Lo et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993
	XR	Thomas A. Berson, Differential Cryptanalysis Mod 2^{32} with Applications to MD5, pp. 69-81
	YR	William Perrizo et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244
	ZR	Vijay Kumar, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113
	AAR	Birgit Pfitzman, Sorting Out Signature Schemes, November 1993, 1st Conf. Computer & Comm. Security '93, p. 74-85

Examiner Date Considered:

FORM PTO-1449 (modified) To: U.S. Department of Commerce (PM&S FORM PAT-1449) Patent and Trademark Office	Atty. Dkt. No.	M#	Client Ref.
		252465	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Applicant: FARBER et al.		
	Appln. No.: R.53(B)(1) Div. of 08/960,079		
	Filing Date: April 1, 1999		
Date: April 1, 1999 Page 3 of 3	Examiner: Homere, J.	Group Art Unit: 2776	

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,887,235	12/1989	HOLLOWAY			
	BR	4,888,681	12/1989	BARNES			
	CR	4,490,782	12/1984	DIXON			
	DR	4,972,367	11/1990	BURKE			
	ER	4,922,414	05/1990	HOLLOWAY			
	FR	5,057,837	10/1991	COLWELL			
	GR	5,007,658	12/1991	BENDERT			
	HR	5,025,421	06/1991	CHO			
	IR	5,129,081	07/1992	KOBAYASHI			
	JR	5,129,082	07/1992	TIRFING			
	KR	5,144,667	09/1992	POGUE, JR.			
	LR	5,179,680	01/1993	COLWELL			
	MR	5,301,286	04/1994	RAJANI			
	NR	5,404,508	04/1995	KONRAD			

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	SR	Zhiyu Tian et al., A New Hashing Function: Statistical Behaviour and Algorithm, pp. 3-13
	TR	G. L. Friedman, Digital Camera with Apparatu for Authentication of Images Produced from an Image File, NASA CASE NO. NPO-19108-1-CU, Serial No. 08/159,980, November 24, 1993
	UR	H. Goodman, Ada, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277
	VR	Advances in Cryptology-EUROCRYPT'93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993 Proceedings
	WR	Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993
	XR	Advances in Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings

Examiner Date Considered:

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with fees, to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

B-FT

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

TM31/1025

PILLSBURY MADISON & SUTRO
INTELLECTUAL PROPERTY GROUP
1100 NEW YOUK AVENUE NW
NINTH FLOOR EAST TOWER
WASHINGTON DC 20005-3918

OIPE NOV 21 2001 PATENT & TRADEMARK OFFICE 2800

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/283,160	04/01/99	055	HOMERE, J 2177	10/25/01

First Named Applicant: FARBER, 35 USC 154(b) term ext. = 0 Days.

TITLE OF INVENTION: IDENTIFYING DATA REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 PM252465	707-002.000	Z99	UTILITY	YES	~~$640.00~~ $1280.00	01/25/02

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.
   - ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
   - ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
   1 PILLSBURY WINTHROP LLP
   2 INTELLECTUAL PROPERTY
   3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
   PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.
   (A) NAME OF ASSIGNEE
   1. KINETECH, INC. 2. DIGITAL ISLAND, INC.
   (B) RESIDENCE: (CITY & STATE OR COUNTRY)
   1. Northbrook, IL 2. San Francisco, CA
   Please check the appropriate assignee category or categories (will not be printed on the patent)
   ☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):
   - ☒ Issue Fee
   - ☐ Advance Order - # of Copies

4b. The following fees or deficiency in these fees should be charged to:
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The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) for Brian Siritzky Reg. No. 37497 (Date) NOV. 21 2001

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

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#1785

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attention: OFFICE OF PUBLICATIONS

In re PATENT APPLICATION of
Inventor(s): FARBER et al.
Appln. No.: 09 (Series Code ↑) 283,160 (Serial No. ↑)
Filed: April 1, 1999

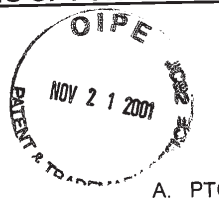
Allowed: October 25, 2001
Batch No.: Z99
Atty. Dkt. P 252465 (M#) (Client Ref)

#15
1/17/02
A.W.

Title: IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA (As Amended)

Date: November 21, 2001

FILING OF FORMAL DRAWING(S)



Hon. Commissioner of Patents
Washington, D.C. 20231

Sir:

1. Please accept the herewith 31 sheet(s)
2. of formal drawing(s) on ☒ A4 ☐ 11" size paper
3. of Figure(s) 1a-1b, 2-9, 10a-10b, 11-15, 16a-16b, 17a-17b, 18a-18b, 19a-19b, 20-25, 26a-26b, 27a-27b and 28
4. of which Figure(s) ___ is/are **black and white photographic drawings** (DO NOT use this form for photographic drawings in color (see PAT-280).
5. ☐ which is/are in lieu of the informal drawing(s) filed earlier.
6. ☒which include the corrections required/approved by the Draftsperson/Examiner in the ☐Office Action dated Or ☒Notice of Allowability (PTO-37) dated October 25, 2001.

NOTE

A. PTO waived requirement for 3 sets of B/W photos June 9, 1998, 1211 0G 34;
B. PTO waived requirement for petition and petition fee for B/W photos August 4, 1998, 1213 0G 108.
C. Petition and fee are still required for photographs which are in color. See Rule 84(a)(2).

A,B,C were confirmed in 9/8/00 Rule 84 changes

EXTENSIONS NOT AVAILABLE Re NOTICES OF ALLOWABILITY ISSUED ON/AFTER 11/7/00		Large/Small Entity		Fee Code
7. Original due date: January 25, 2002	☐ NONE			
8. Petition is hereby made to extend the original due date to cover The date this response is filed for which the requisite fee is attached	(1 mo)	$110/$55 =		115/215
	(2 mos)	$400/$200 =	+0	116/216
	(3 mos)	$920/$460 =		117/217
		TOTAL FEE ENCLOSED		**$0**

9.

(Our Deposit Account No. 03-3975)
(Our Order No. 7018 (C#) 252465 (M#)

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficiencies only) now or hereafter relative to this application and the resulting Official Document under Rule 20, or credit any overpayment, to our Accounting/Order Nos. shown above, for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal sheet is filed.

Pillsbury Winthrop LLP
Intellectual Property Group

1600 Tysons Boulevard
McLean, VA 22102
Tel: (703) 905-2000

By Atty: **Brian Siritzky** **Reg. No. 37497**

Sig: for Jean-Paul Hoffman No. 42663

Fax: (703) 905-2500
Tel: **(703) 905-2185**

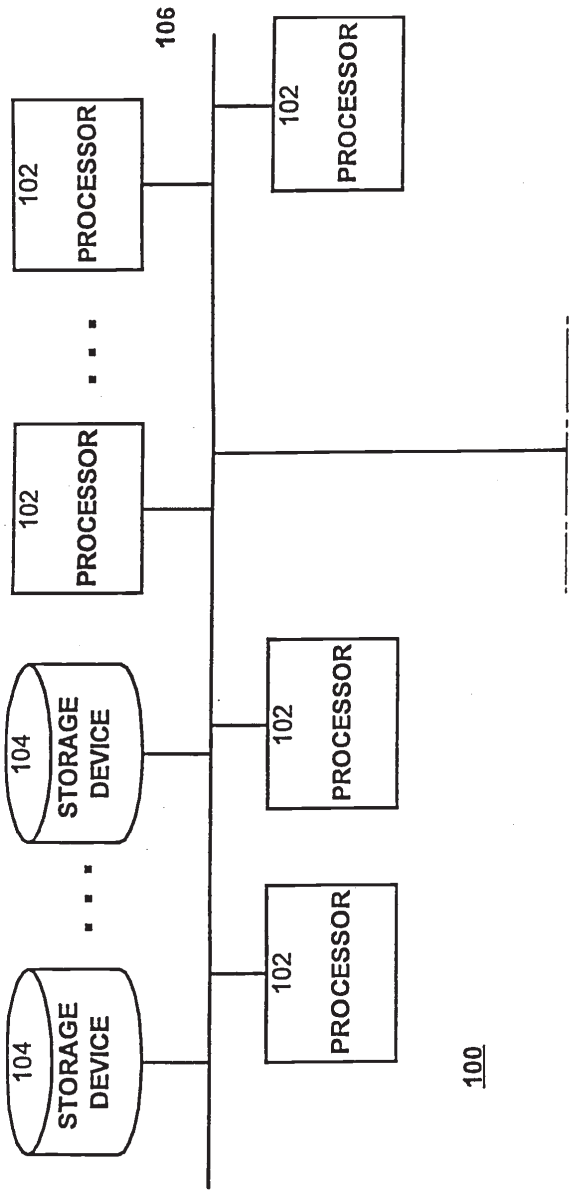
Atty/Sec: BS/ksh

NOTE: File this cover sheet in duplicate with PTO receipt (PAT-103A) and attachments

30240803_1.DOC

PAT-125 11/01

FIG. 1(a)


106
102
PROCESSOR
102
PROCESSOR
102
PROCESSOR
102
PROCESSOR
104
STORAGE DEVICE
104
STORAGE DEVICE
100

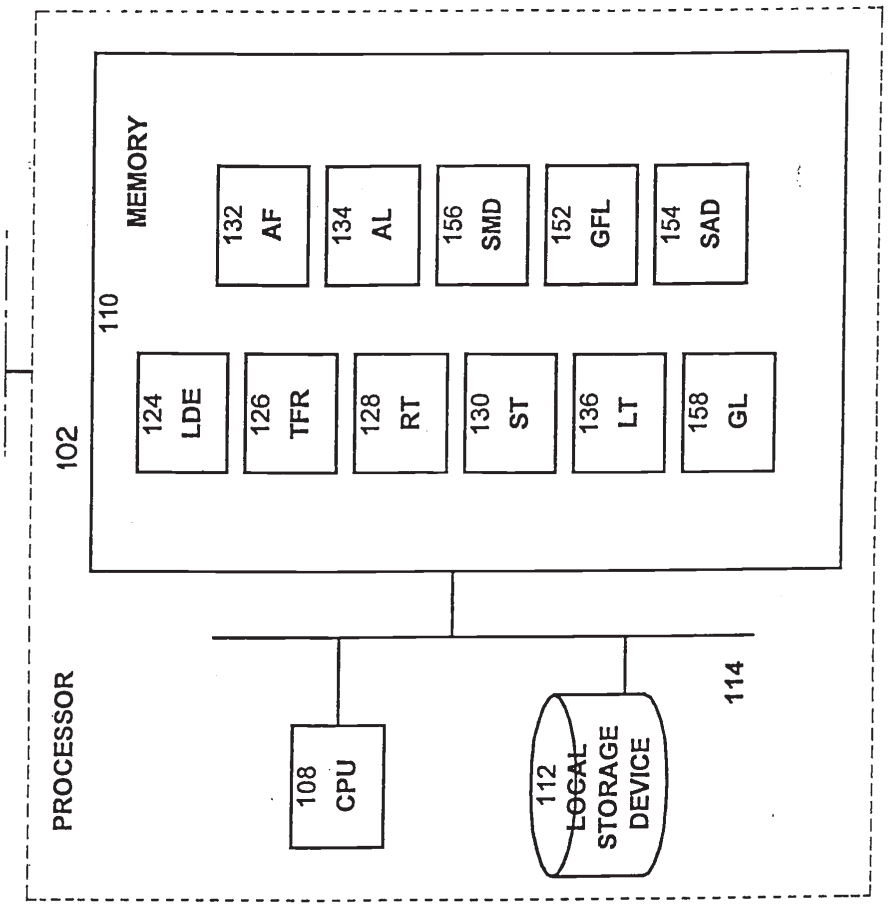

PROCESSOR
102
MEMORY
110
124 LDE
126 TFR
128 RT
130 ST
136 LT
158 GL
132 AF
134 AL
156 SMD
152 GFL
154 SAD
108 CPU
112 LOCAL STORAGE DEVICE
114

FIG. 1(b)

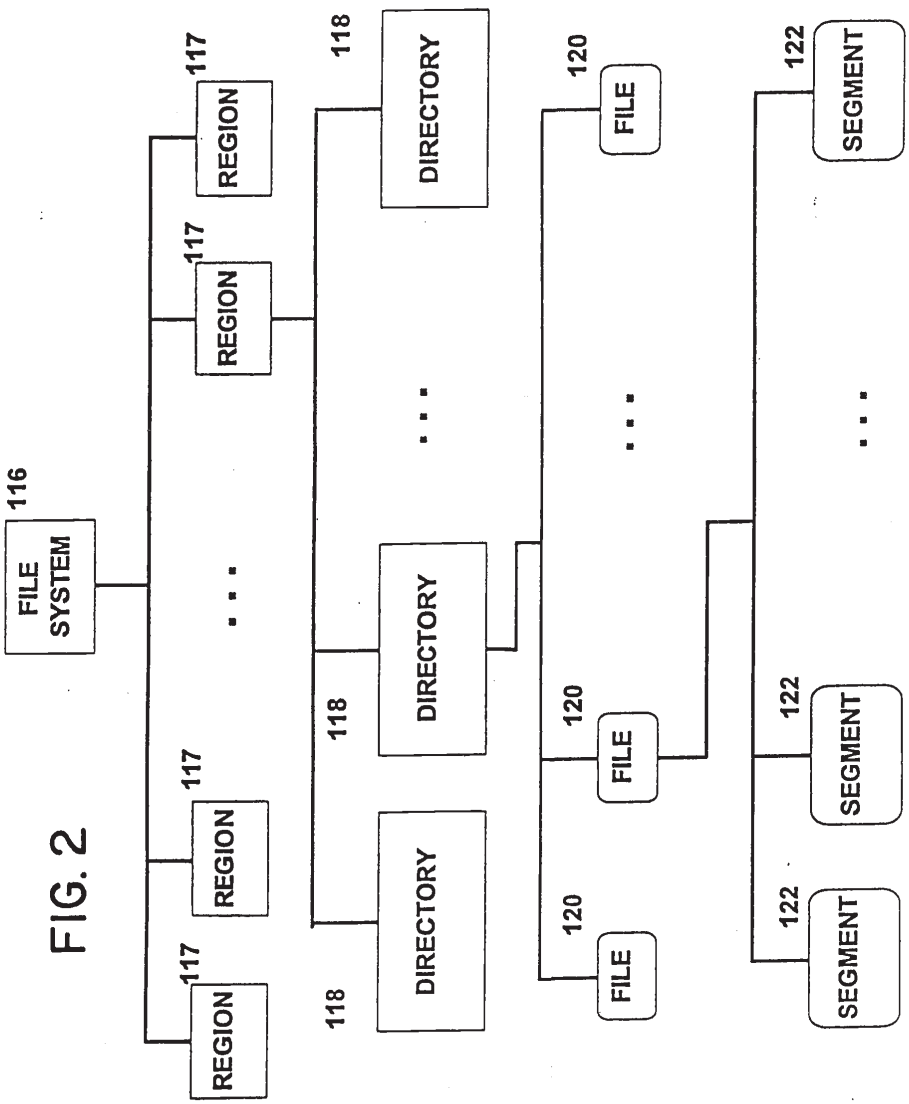

116
FILE SYSTEM
117
REGION
117
REGION
117
REGION
118
DIRECTORY
118
DIRECTORY
118
DIRECTORY
120
FILE
120
FILE
120
FILE
122
SEGMENT
122
SEGMENT
122
SEGMENT

FIG. 2

FIG. 3

138

Region ID
Pathname
True Name
Type
File ID
Time of last access
Time of last modification
Safe flag
Lock flag
Size
Owner

FIG. 4

140

True Name
File ID
Compressed File ID
Source IDs
Dependent processors
Use count
Time of last access
Expiration
Grooming delete count

142

Region ID
Region file system
Region pathname
Region status
Mirror processor(s)
Mirror duplication count
Policy

FIG. 5

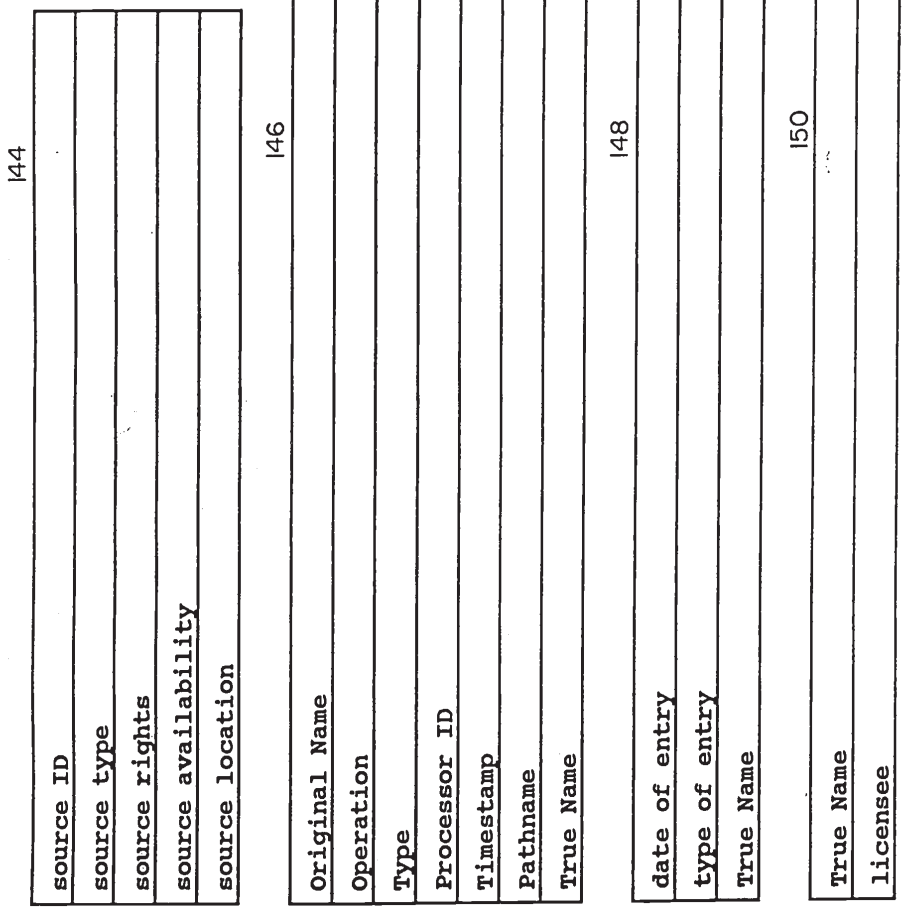


FIG. 6

FIG. 7

FIG. 8

FIG. 9

FIG. 10(a)

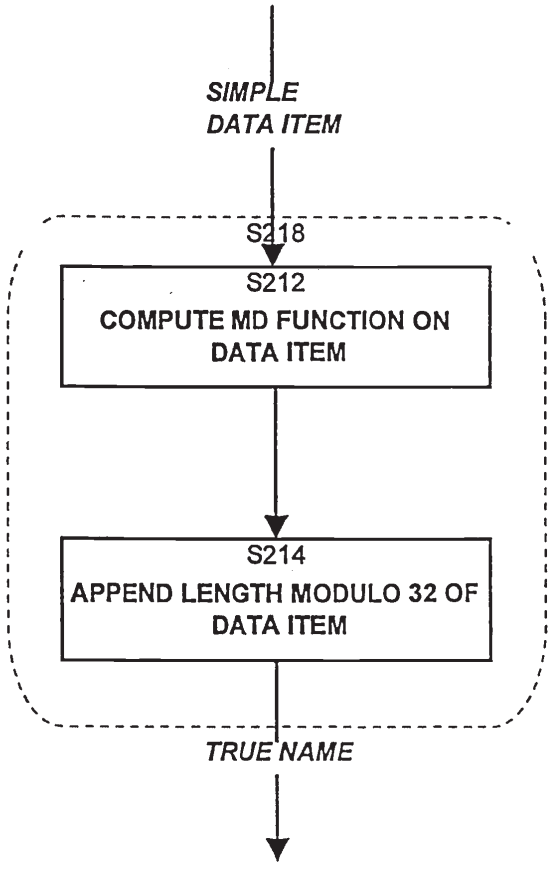
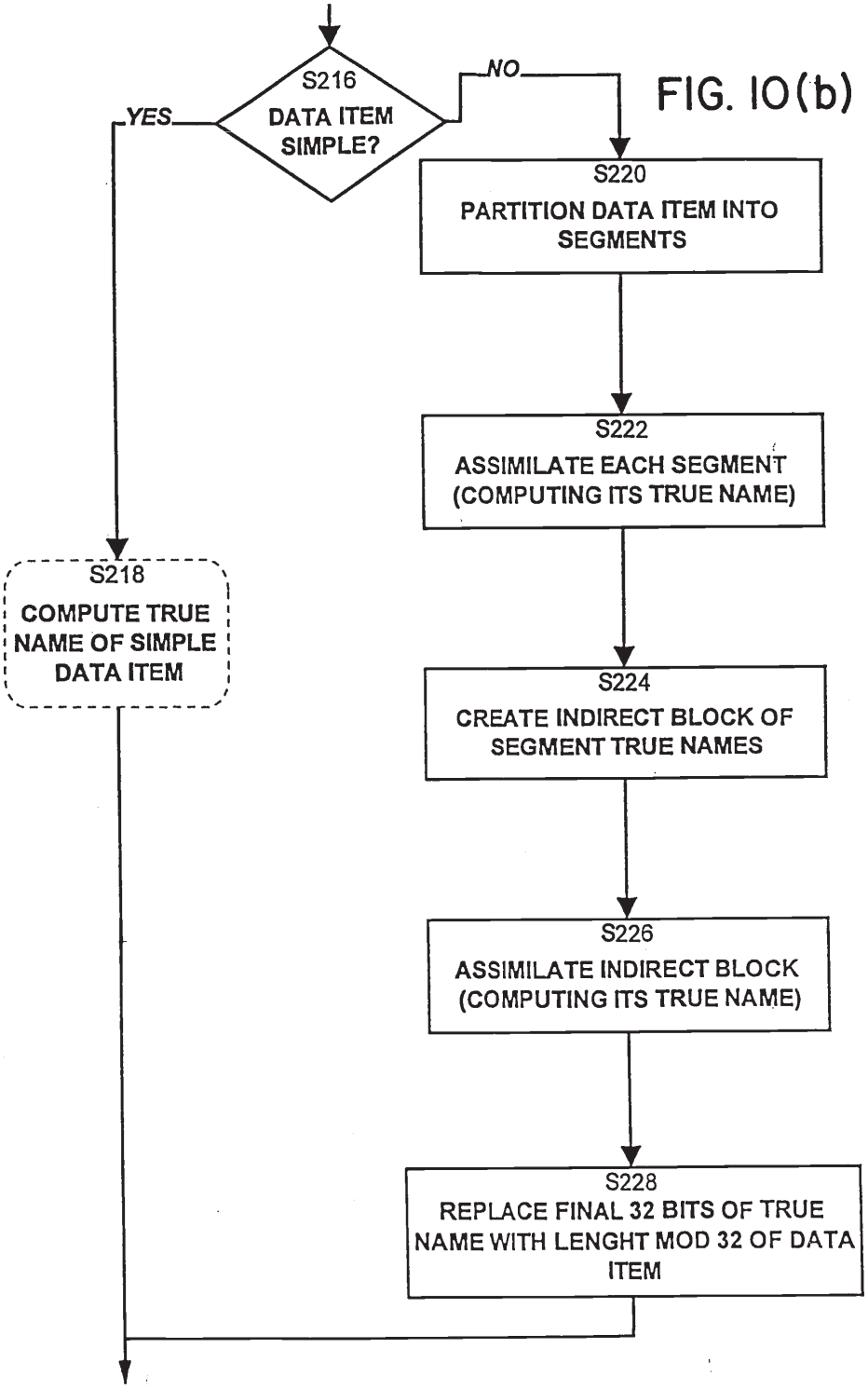

SIMPLE
DATA ITEM
S218
S212
COMPUTE MD FUNCTION ON
DATA ITEM
S214
APPEND LENGTH MODULO 32 OF
DATA ITEM
TRUE NAME

FIG. 10(b)


S216
DATA ITEM SIMPLE?
YES
NO
S218
COMPUTE TRUE NAME OF SIMPLE DATA ITEM
S220
PARTITION DATA ITEM INTO SEGMENTS
S222
ASSIMILATE EACH SEGMENT (COMPUTING ITS TRUE NAME)
S224
CREATE INDIRECT BLOCK OF SEGMENT TRUE NAMES
S226
ASSIMILATE INDIRECT BLOCK (COMPUTING ITS TRUE NAME)
S228
REPLACE FINAL 32 BITS OF TRUE NAME WITH LENGHT MOD 32 OF DATA ITEM

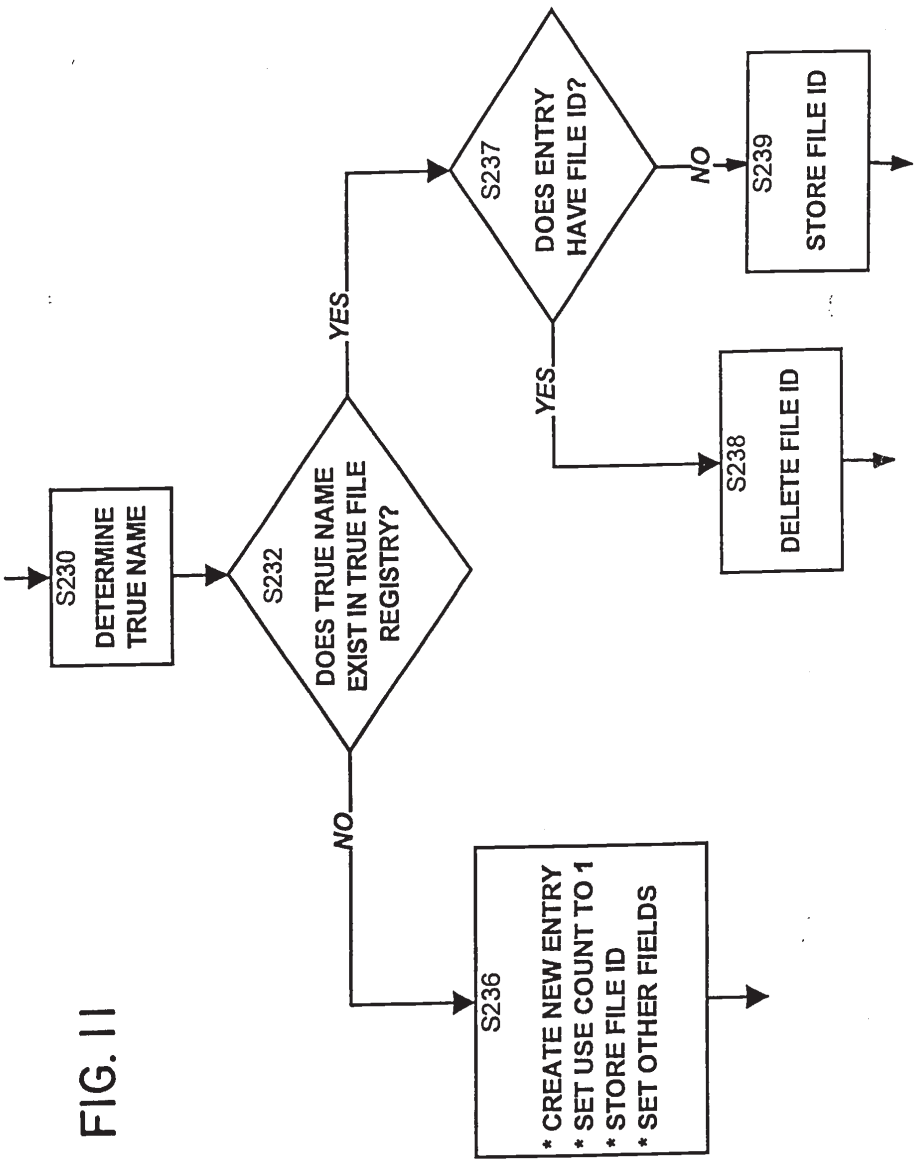

S230
DETERMINE TRUE NAME
S232
DOES TRUE NAME EXIST IN TRUE FILE REGISTRY?
YES
NO
S237
DOES ENTRY HAVE FILE ID?
YES
NO
S238
DELETE FILE ID
S239
STORE FILE ID
S236
* CREATE NEW ENTRY
* SET USE COUNT TO 1
* STORE FILE ID
* SET OTHER FIELDS

FIG. 11

FIG. 12

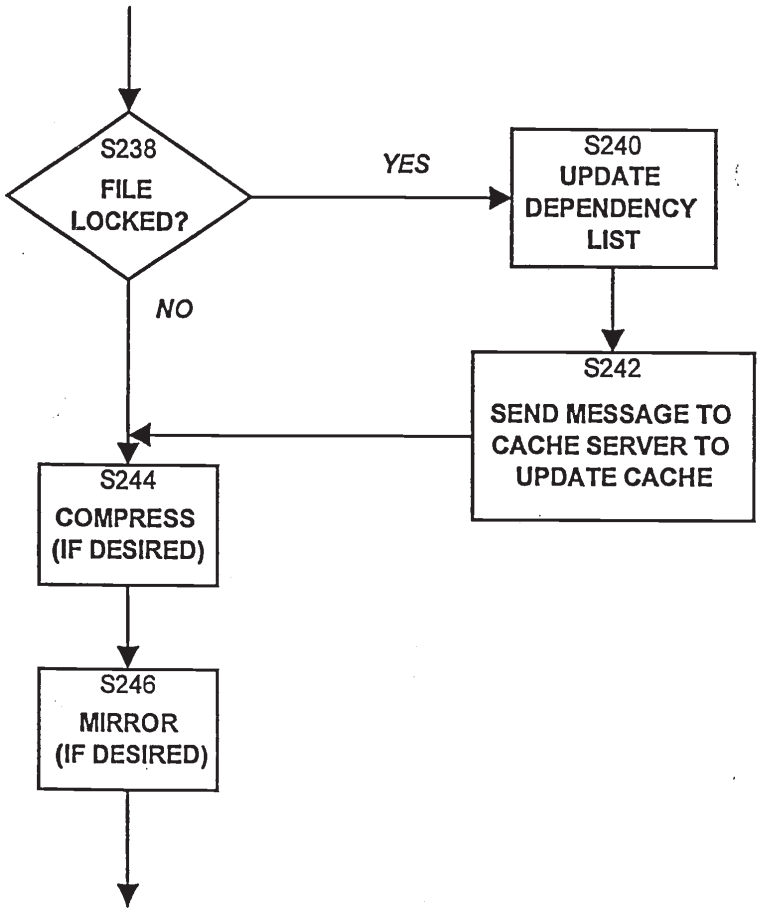
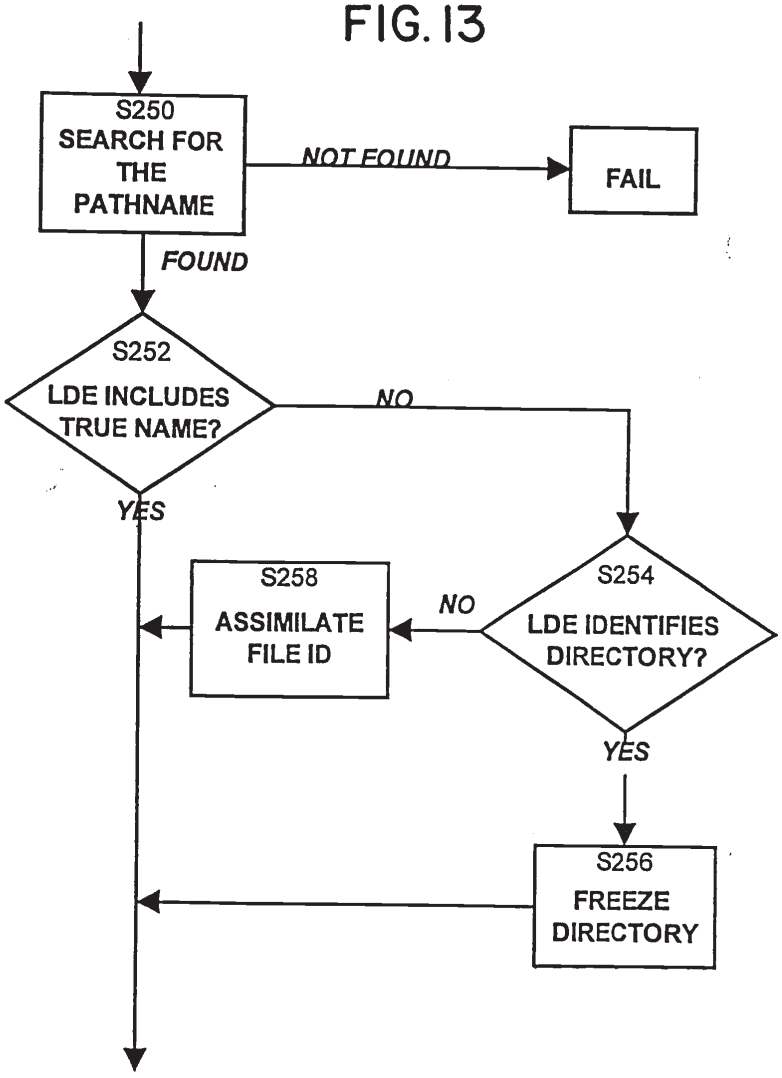

S238
FILE LOCKED?
YES
S240
UPDATE DEPENDENCY LIST
NO
S242
SEND MESSAGE TO CACHE SERVER TO UPDATE CACHE
S244
COMPRESS (IF DESIRED)
S246
MIRROR (IF DESIRED)

FIG. 13


S250
SEARCH FOR THE PATHNAME
NOT FOUND
FAIL
FOUND
S252
LDE INCLUDES TRUE NAME?
NO
YES
S254
LDE IDENTIFIES DIRECTORY?
NO
S258
ASSIMILATE FILE ID
YES
S256
FREEZE DIRECTORY

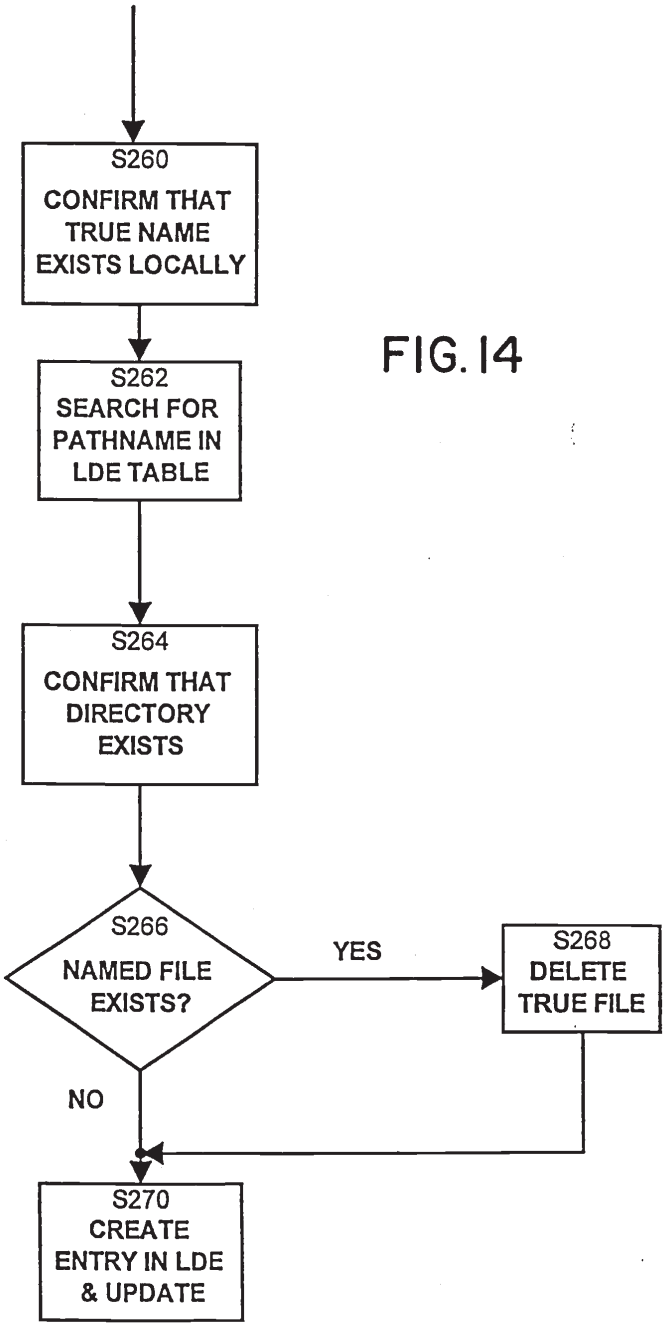

S260
CONFIRM THAT TRUE NAME EXISTS LOCALLY
S262
SEARCH FOR PATHNAME IN LDE TABLE
S264
CONFIRM THAT DIRECTORY EXISTS
S266
NAMED FILE EXISTS?
YES
S268
DELETE TRUE FILE
NO
S270
CREATE ENTRY IN LDE & UPDATE

FIG. 14

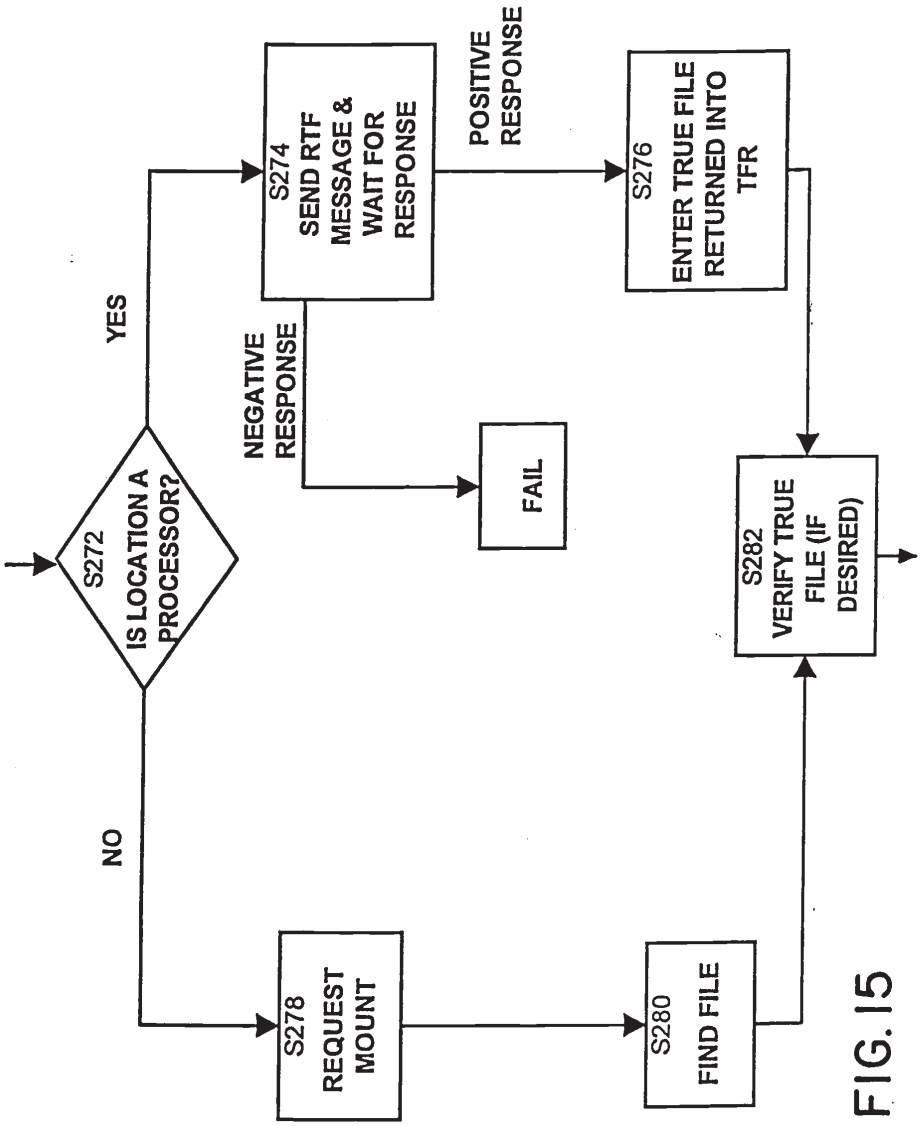

S272
IS LOCATION A PROCESSOR?
YES
NO
S274
SEND RTF MESSAGE & WAIT FOR RESPONSE
POSITIVE RESPONSE
NEGATIVE RESPONSE
FAIL
S276
ENTER TRUE FILE RETURNED INTO TFR
S278
REQUEST MOUNT
S280
FIND FILE
S282
VERIFY TRUE FILE (IF DESIRED)

FIG. 15

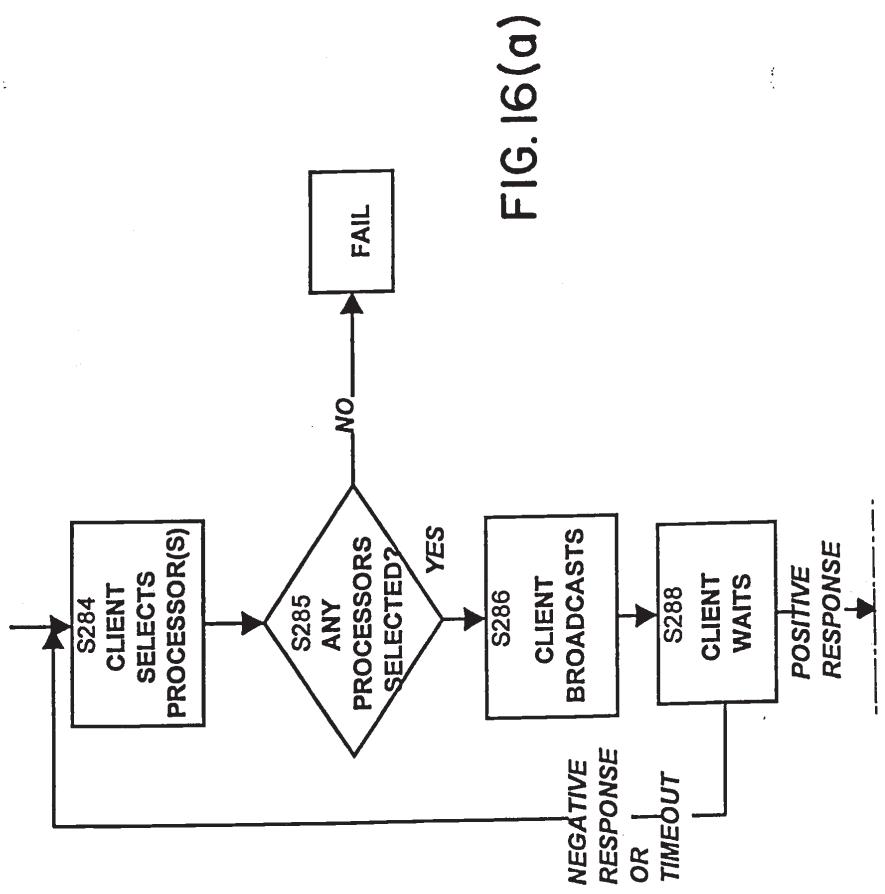

S284
CLIENT
SELECTS
PROCESSOR(S)
S285
ANY
PROCESSORS
SELECTED?
NO
FAIL
YES
S286
CLIENT
BROADCASTS
S288
CLIENT
WAITS
POSITIVE
RESPONSE
NEGATIVE
RESPONSE
OR
TIMEOUT

FIG. 16(a)

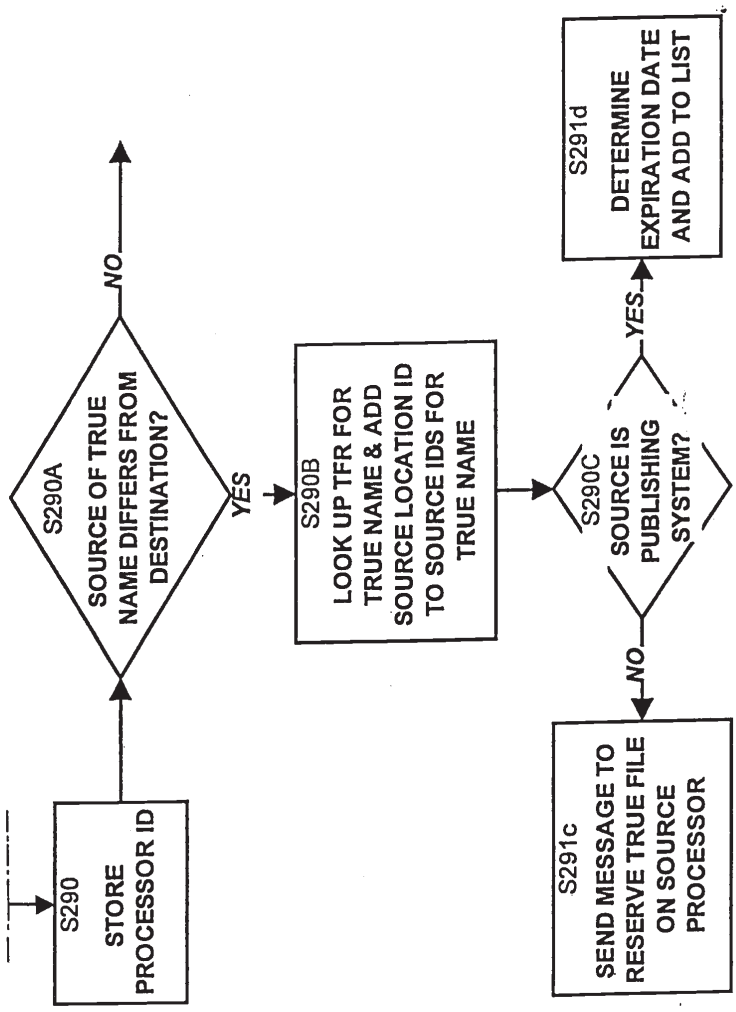

S290
STORE PROCESSOR ID
S290A
SOURCE OF TRUE NAME DIFFERS FROM DESTINATION?
NO
YES
S290B
LOOK UP TFR FOR TRUE NAME & ADD SOURCE LOCATION ID TO SOURCE IDS FOR TRUE NAME
S290C
SOURCE IS PUBLISHING SYSTEM?
YES
NO
S291d
DETERMINE EXPIRATION DATE AND ADD TO LIST
S291c
SEND MESSAGE TO RESERVE TRUE FILE ON SOURCE PROCESSOR

FIG. 16(b)

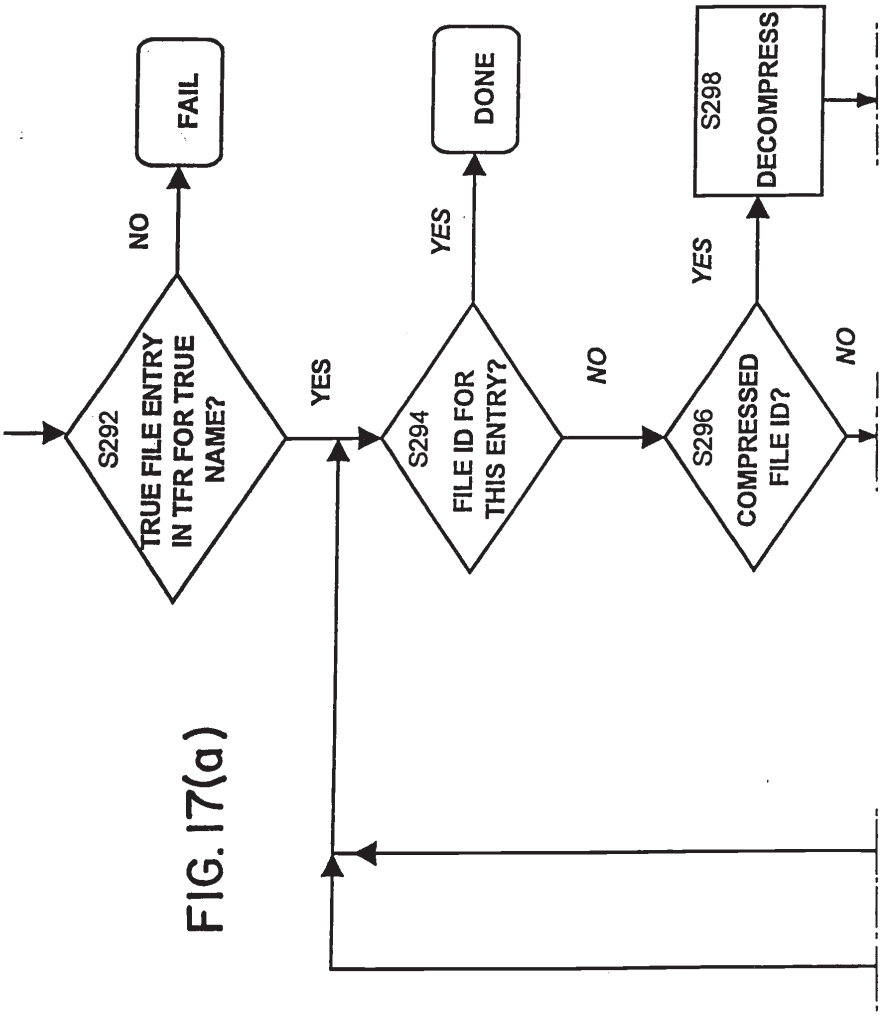

S292
TRUE FILE ENTRY IN TFR FOR TRUE NAME?
NO
FAIL
YES
S294
FILE ID FOR THIS ENTRY?
YES
DONE
NO
S296
COMPRESSED FILE ID?
YES
S298
DECOMPRESS
NO

FIG. 17(a)

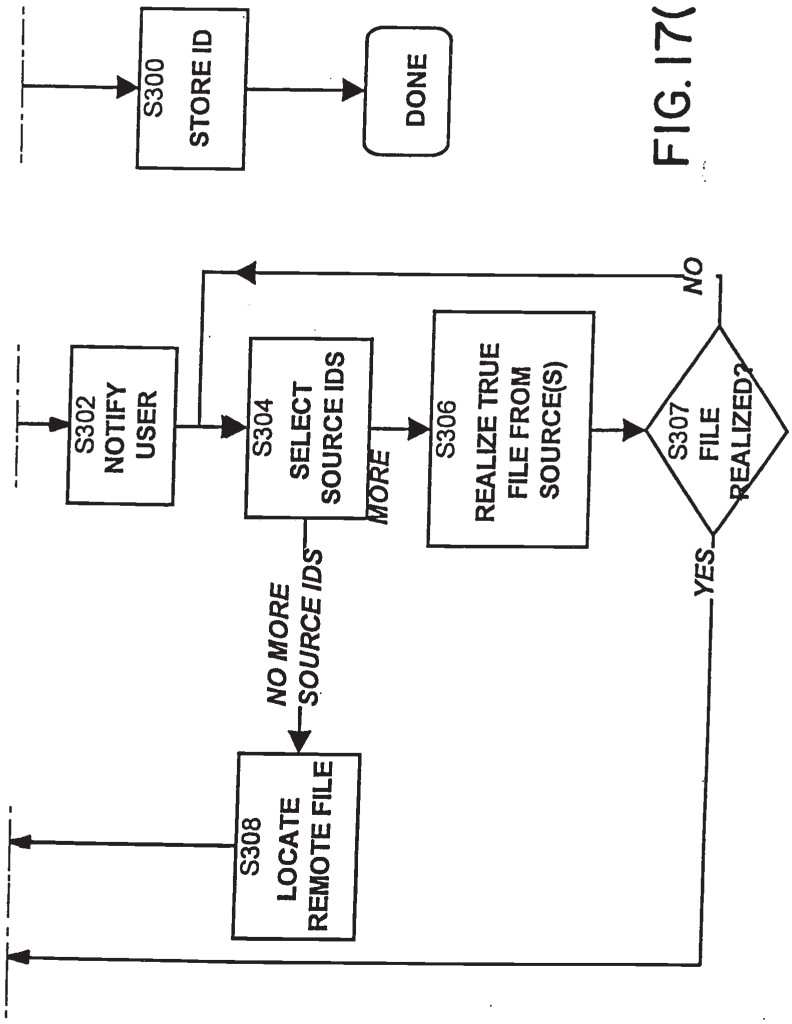
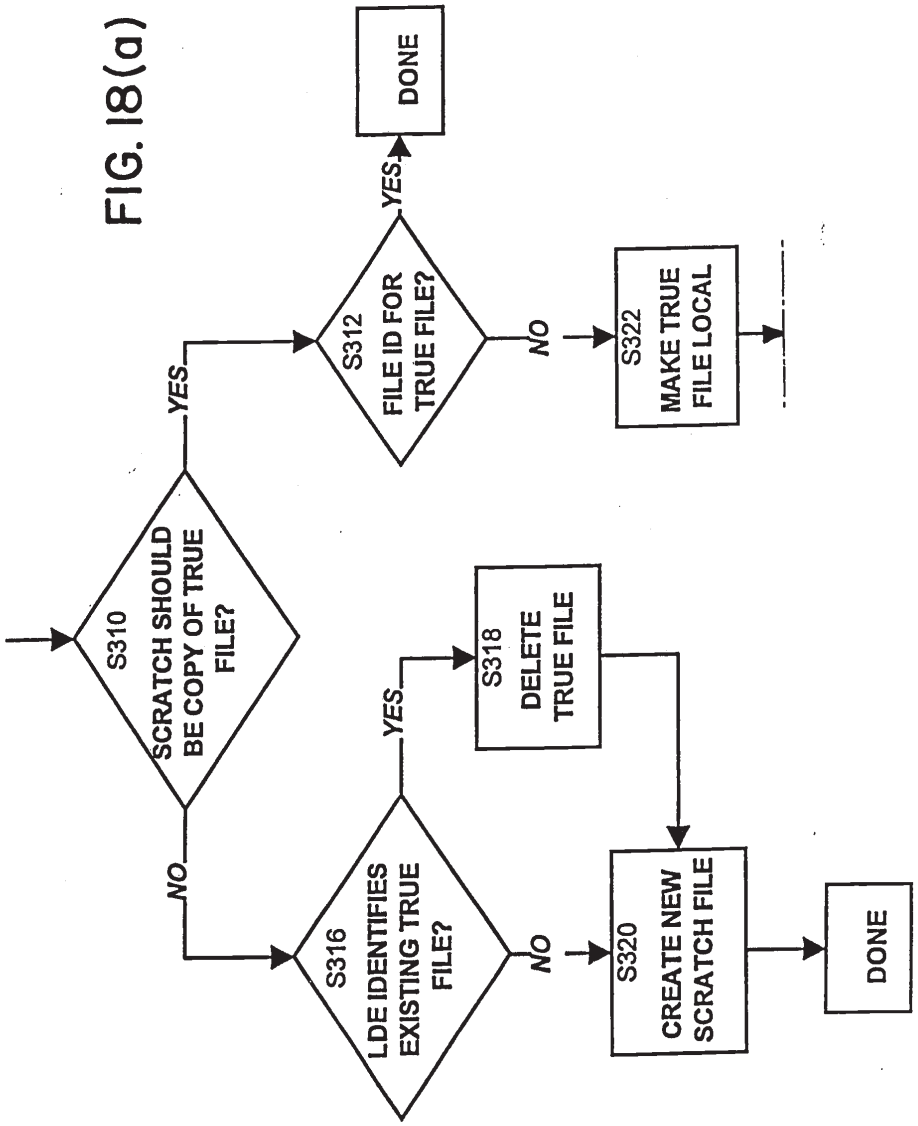

S300
STORE ID
DONE
S302
NOTIFY USER
S304
SELECT SOURCE IDS
MORE
NO MORE SOURCE IDS
S306
REALIZE TRUE FILE FROM SOURCE(S)
S307
FILE REALIZED?
NO
YES
S308
LOCATE REMOTE FILE

FIG. 17(b)

FIG. 18(a)


S310
SCRATCH SHOULD BE COPY OF TRUE FILE?
YES
NO
S312
FILE ID FOR TRUE FILE?
YES
NO
DONE
S322
MAKE TRUE FILE LOCAL
S316
LDE IDENTIFIES EXISTING TRUE FILE?
YES
NO
S318
DELETE TRUE FILE
S320
CREATE NEW SCRATCH FILE
DONE

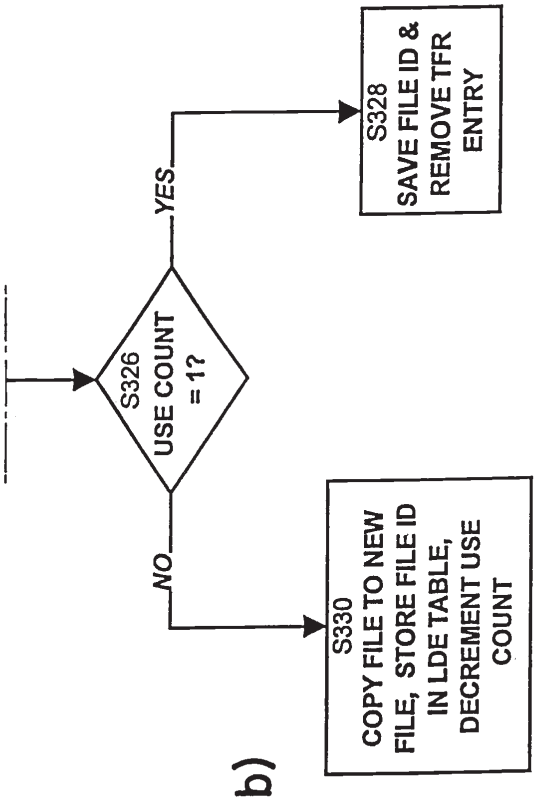

S326
USE COUNT = 1?
YES
NO
S328
SAVE FILE ID & REMOVE TFR ENTRY
S330
COPY FILE TO NEW FILE, STORE FILE ID IN LDE TABLE, DECREMENT USE COUNT

FIG. 18(b)

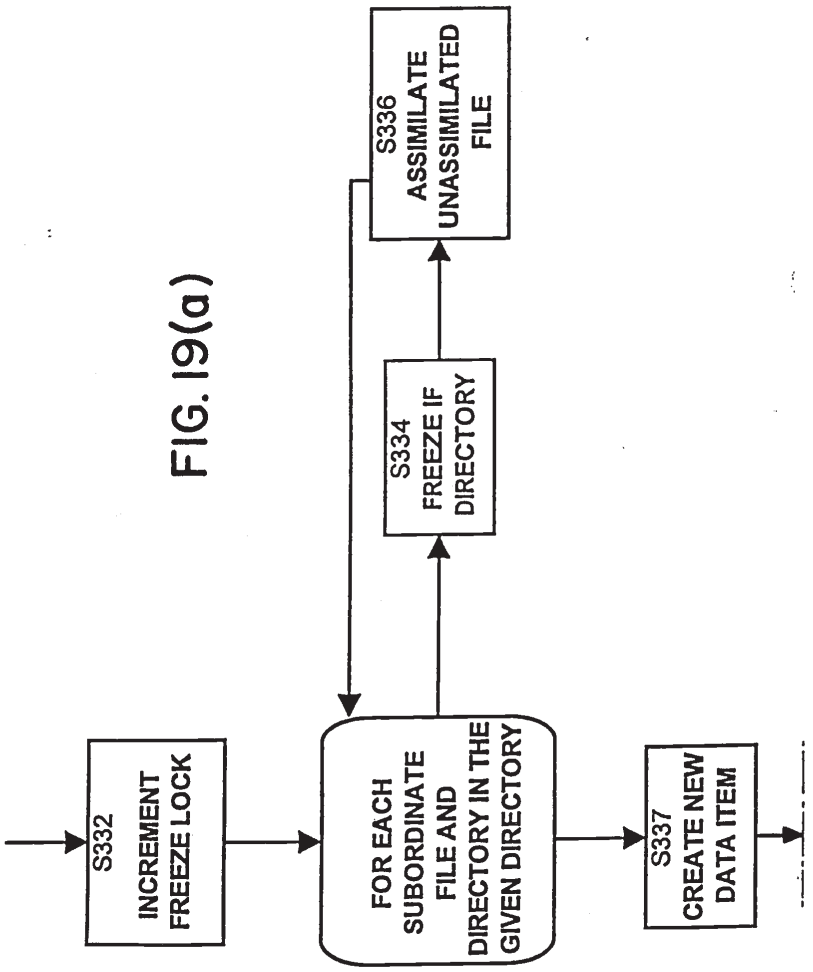

S332
INCREMENT FREEZE LOCK
FOR EACH SUBORDINATE FILE AND DIRECTORY IN THE GIVEN DIRECTORY
S334
FREEZE IF DIRECTORY
S336
ASSIMILATE UNASSIMILATED FILE
S337
CREATE NEW DATA ITEM

FIG. 19(a)

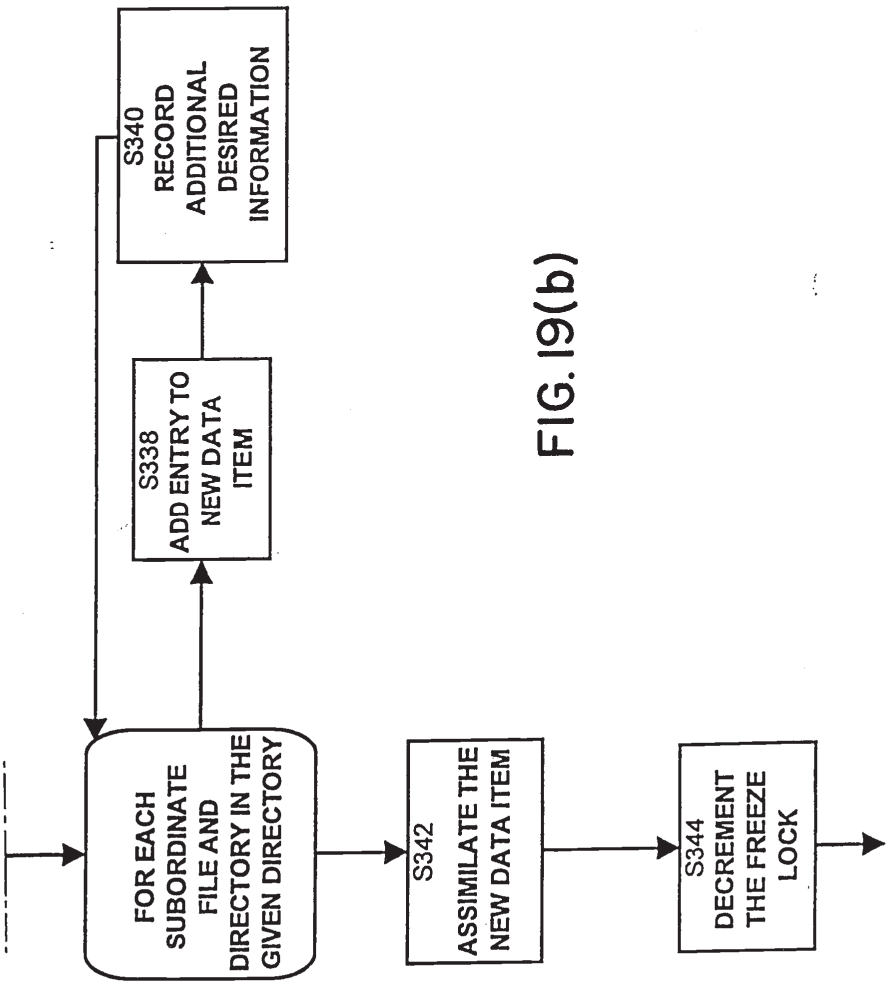

FOR EACH SUBORDINATE FILE AND DIRECTORY IN THE GIVEN DIRECTORY
S338 ADD ENTRY TO NEW DATA ITEM
S340 RECORD ADDITIONAL DESIRED INFORMATION
S342 ASSIMILATE THE NEW DATA ITEM
S344 DECREMENT THE FREEZE LOCK

FIG. 19(b)

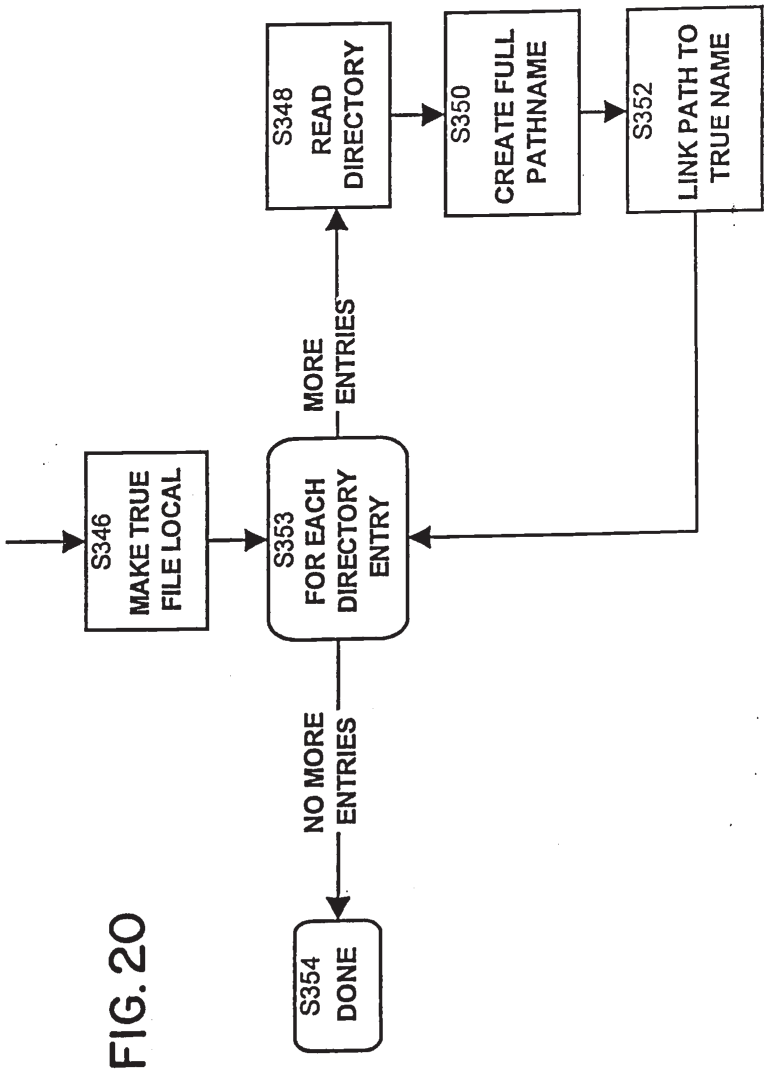

S346
MAKE TRUE FILE LOCAL
S353
FOR EACH DIRECTORY ENTRY
MORE ENTRIES
S348
READ DIRECTORY
S350
CREATE FULL PATHNAME
S352
LINK PATH TO TRUE NAME
NO MORE ENTRIES
S354
DONE

FIG. 20

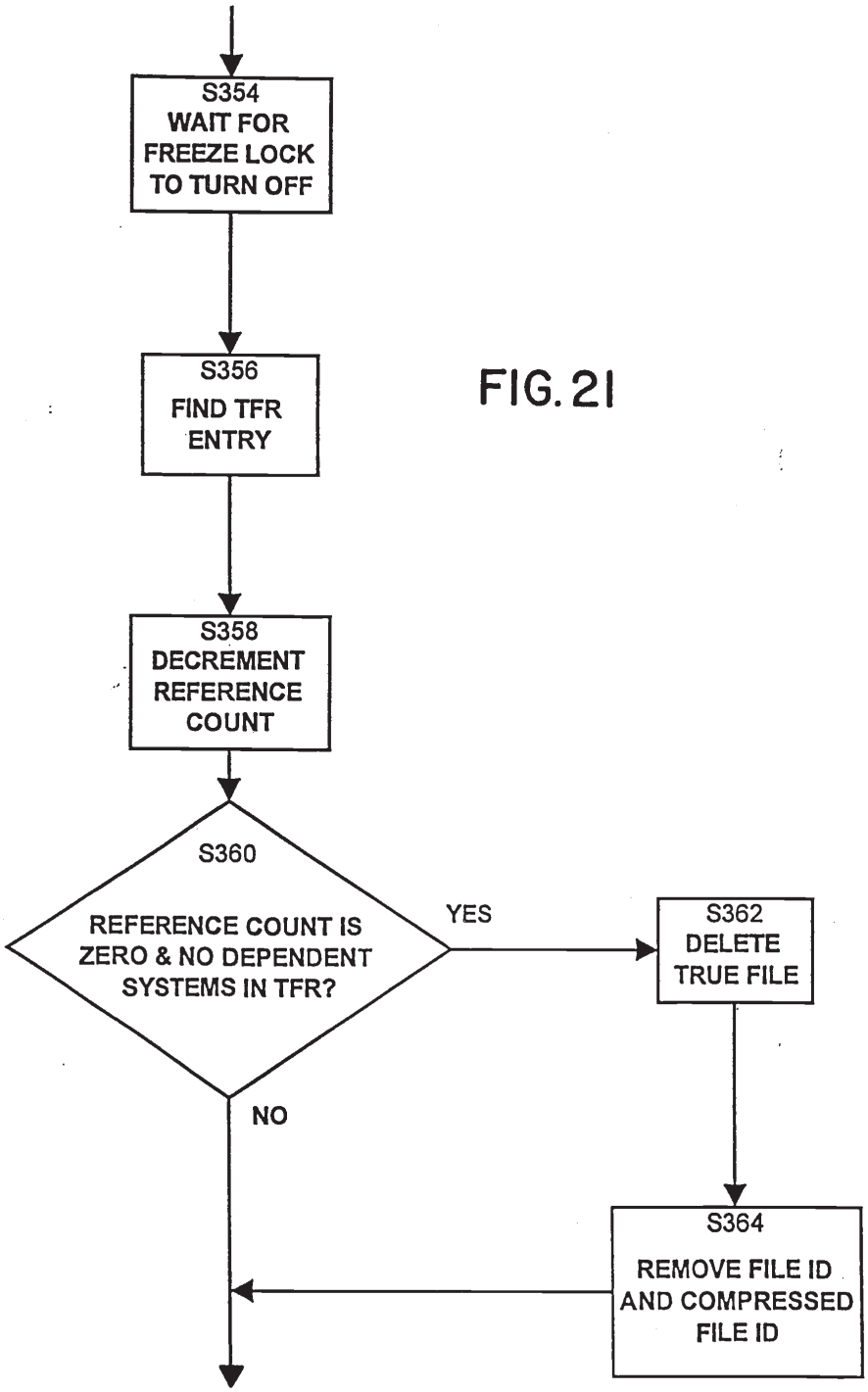

S354
WAIT FOR FREEZE LOCK TO TURN OFF
S356
FIND TFR ENTRY
S358
DECREMENT REFERENCE COUNT
S360
REFERENCE COUNT IS ZERO & NO DEPENDENT SYSTEMS IN TFR?
YES
NO
S362
DELETE TRUE FILE
S364
REMOVE FILE ID AND COMPRESSED FILE ID

FIG. 21

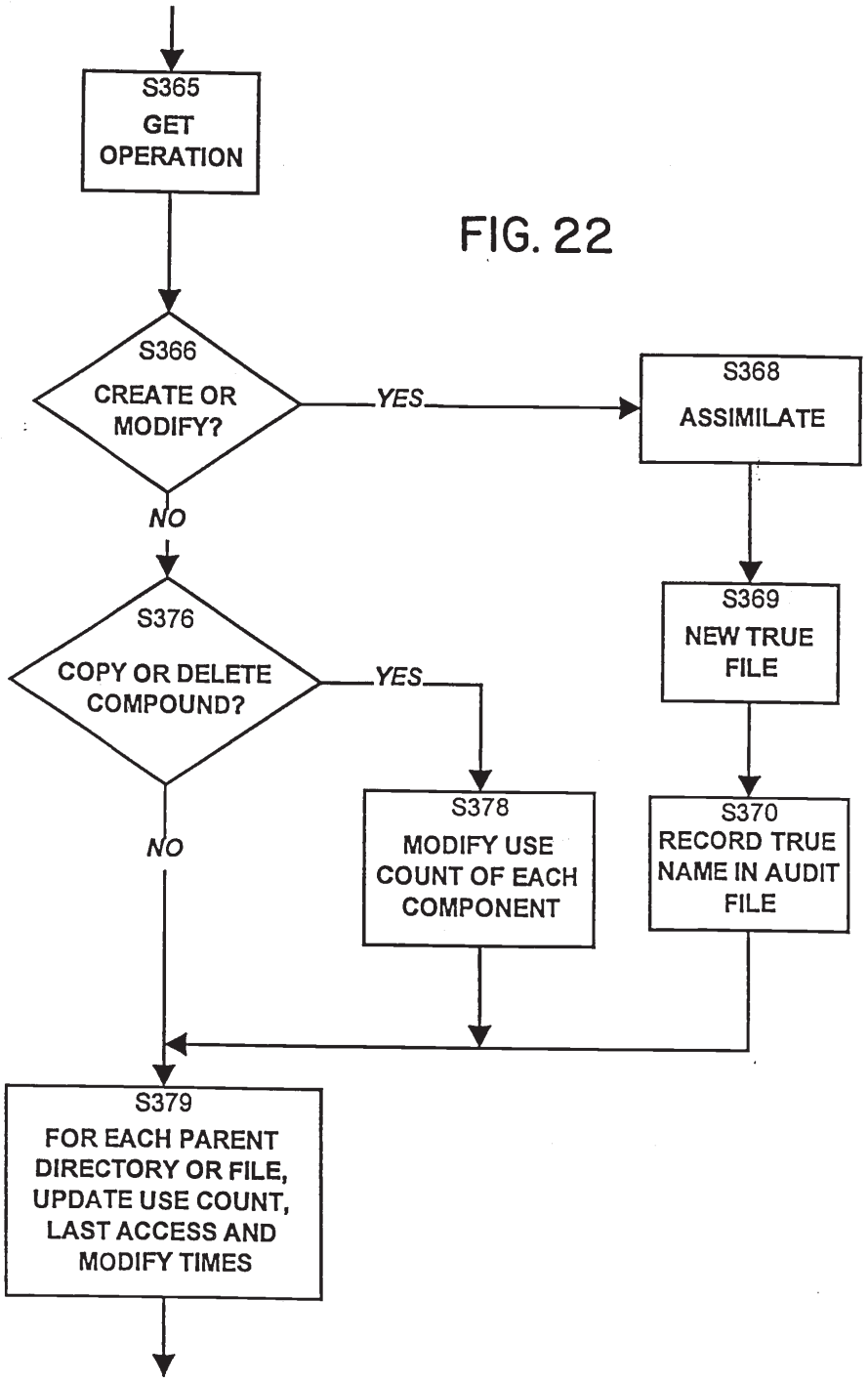
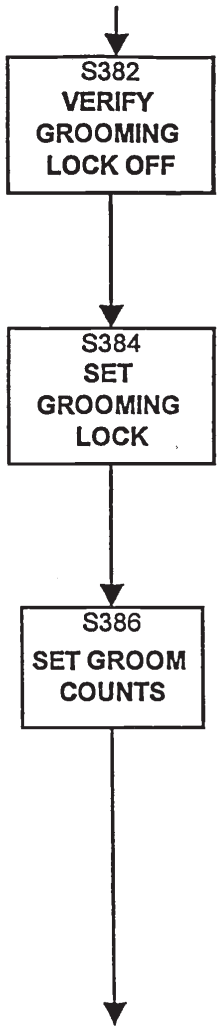

S365
GET OPERATION
S366
CREATE OR MODIFY?
YES
S368
ASSIMILATE
NO
S369
NEW TRUE FILE
S376
COPY OR DELETE COMPOUND?
YES
S378
MODIFY USE COUNT OF EACH COMPONENT
S370
RECORD TRUE NAME IN AUDIT FILE
NO
S379
FOR EACH PARENT DIRECTORY OR FILE, UPDATE USE COUNT, LAST ACCESS AND MODIFY TIMES

FIG. 22

FIG. 23


S382
VERIFY
GROOMING
LOCK OFF
S384
SET
GROOMING
LOCK
S386
SET GROOM
COUNTS

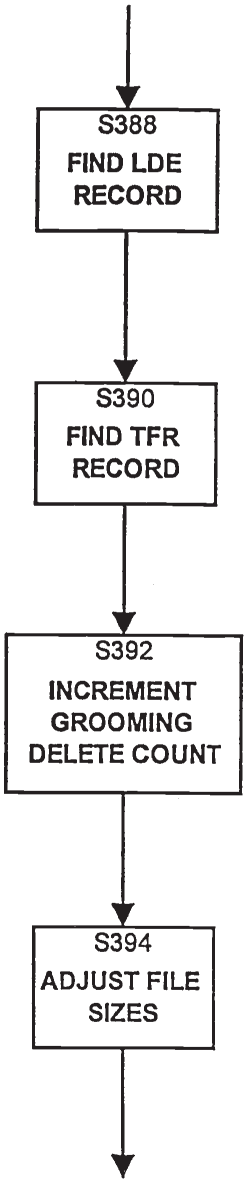

S388
FIND LDE RECORD
S390
FIND TFR RECORD
S392
INCREMENT GROOMING DELETE COUNT
S394
ADJUST FILE SIZES

FIG. 24

FIG. 25

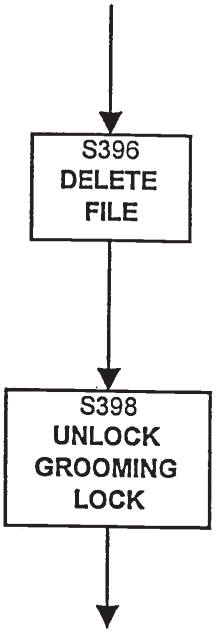
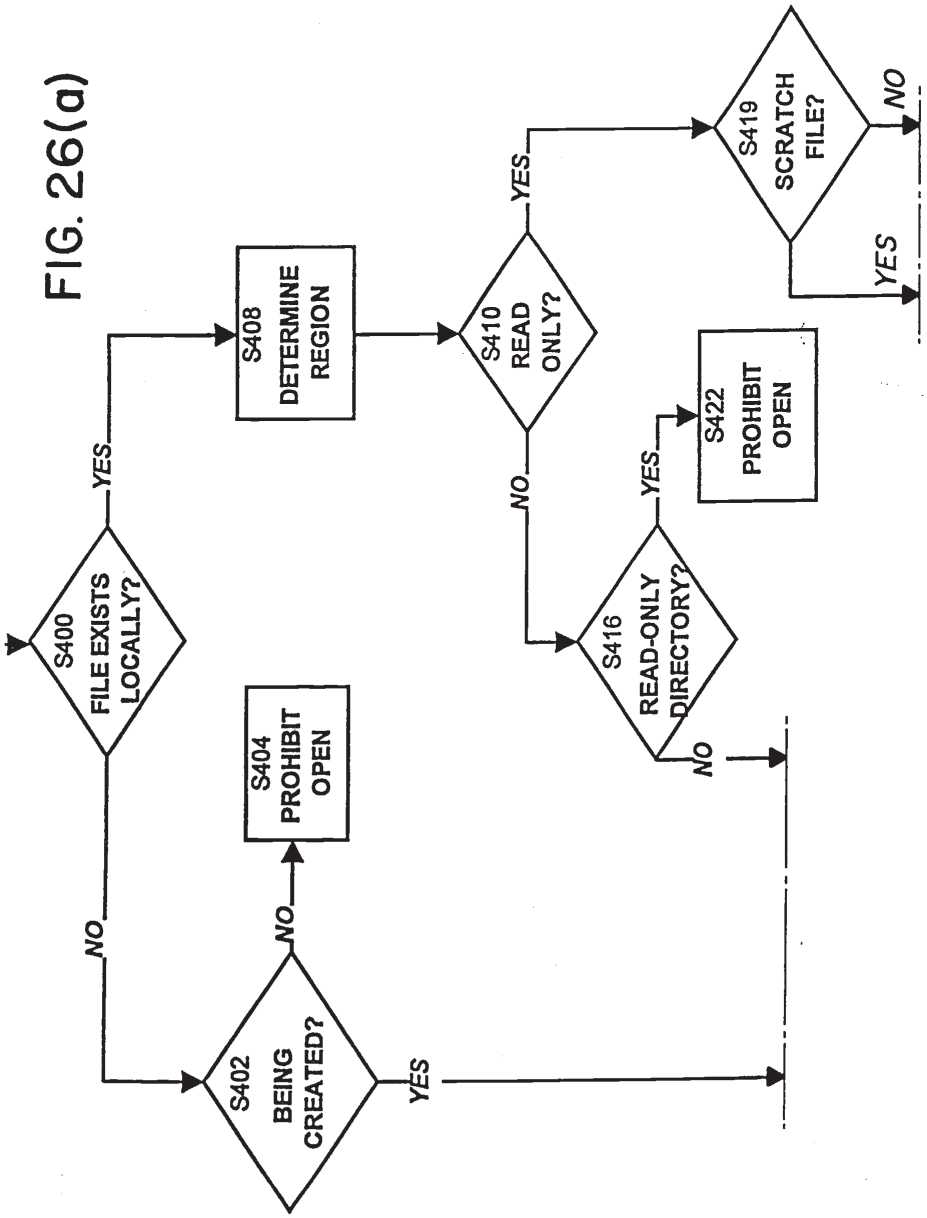


FIG. 26(a)


S400
FILE EXISTS LOCALLY?
YES
NO
S402
BEING CREATED?
NO
YES
S404
PROHIBIT OPEN
S408
DETERMINE REGION
S410
READ ONLY?
YES
NO
S416
READ-ONLY DIRECTORY?
YES
NO
S422
PROHIBIT OPEN
S419
SCRATCH FILE?
NO
YES

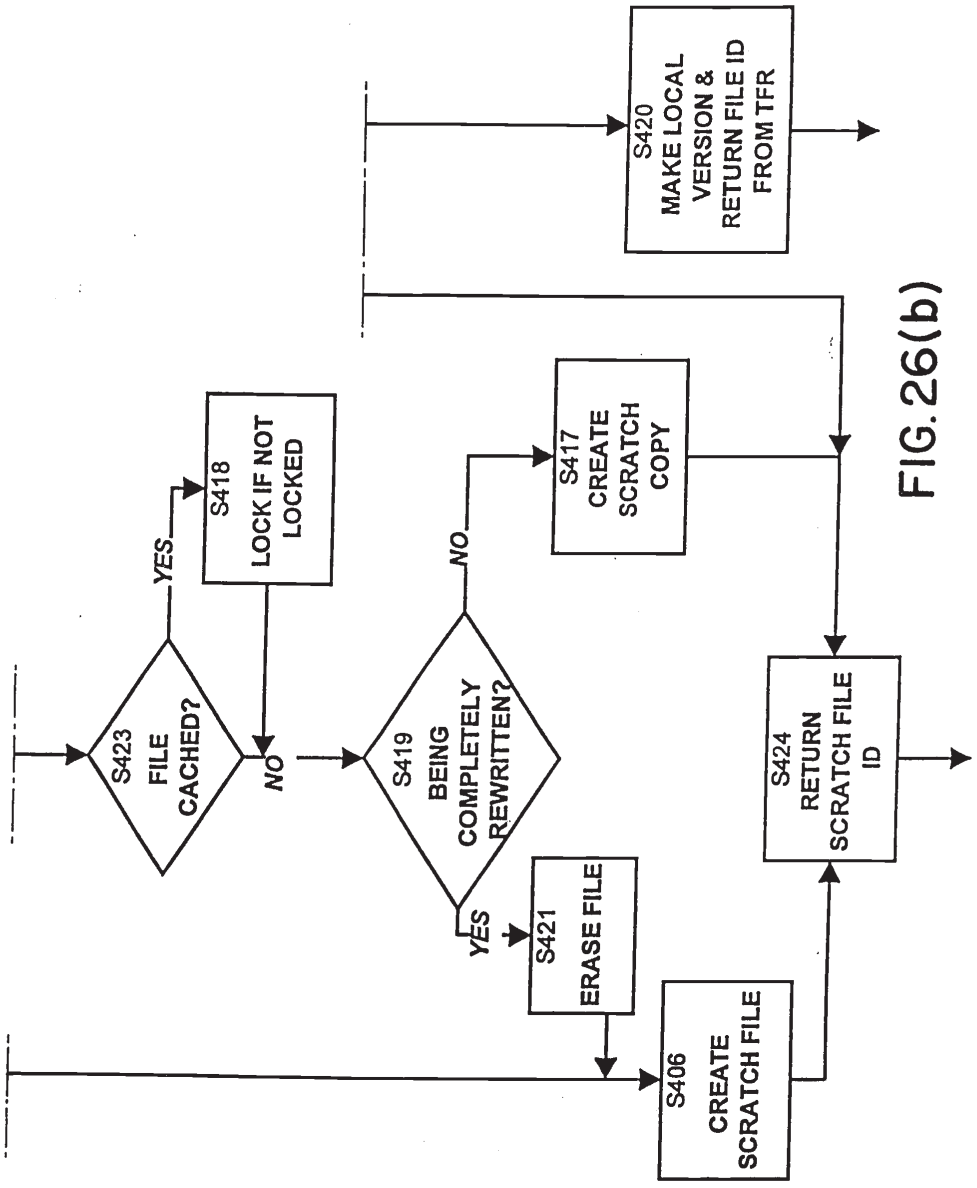

S420
MAKE LOCAL VERSION & RETURN FILE ID FROM TFR
S423
FILE CACHED?
YES
NO
S418
LOCK IF NOT LOCKED
S419
BEING COMPLETELY REWRITTEN?
NO
YES
S417
CREATE SCRATCH COPY
S421
ERASE FILE
S406
CREATE SCRATCH FILE
S424
RETURN SCRATCH FILE ID

FIG. 26(b)

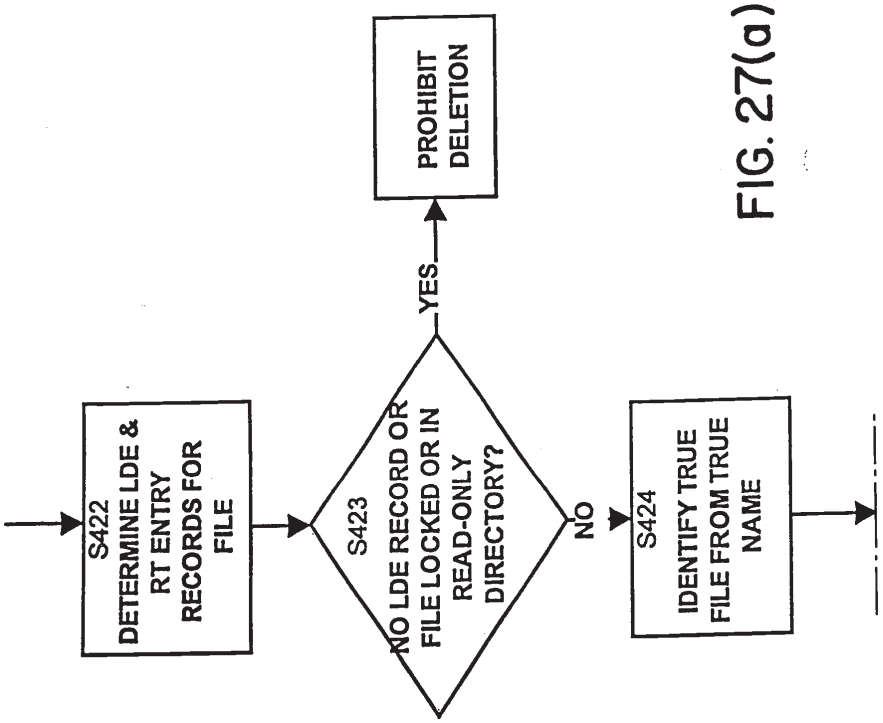

S422
DETERMINE LDE & RT ENTRY RECORDS FOR FILE
S423
NO LDE RECORD OR FILE LOCKED OR IN READ-ONLY DIRECTORY?
YES
PROHIBIT DELETION
NO
S424
IDENTIFY TRUE FILE FROM TRUE NAME

FIG. 27(a)

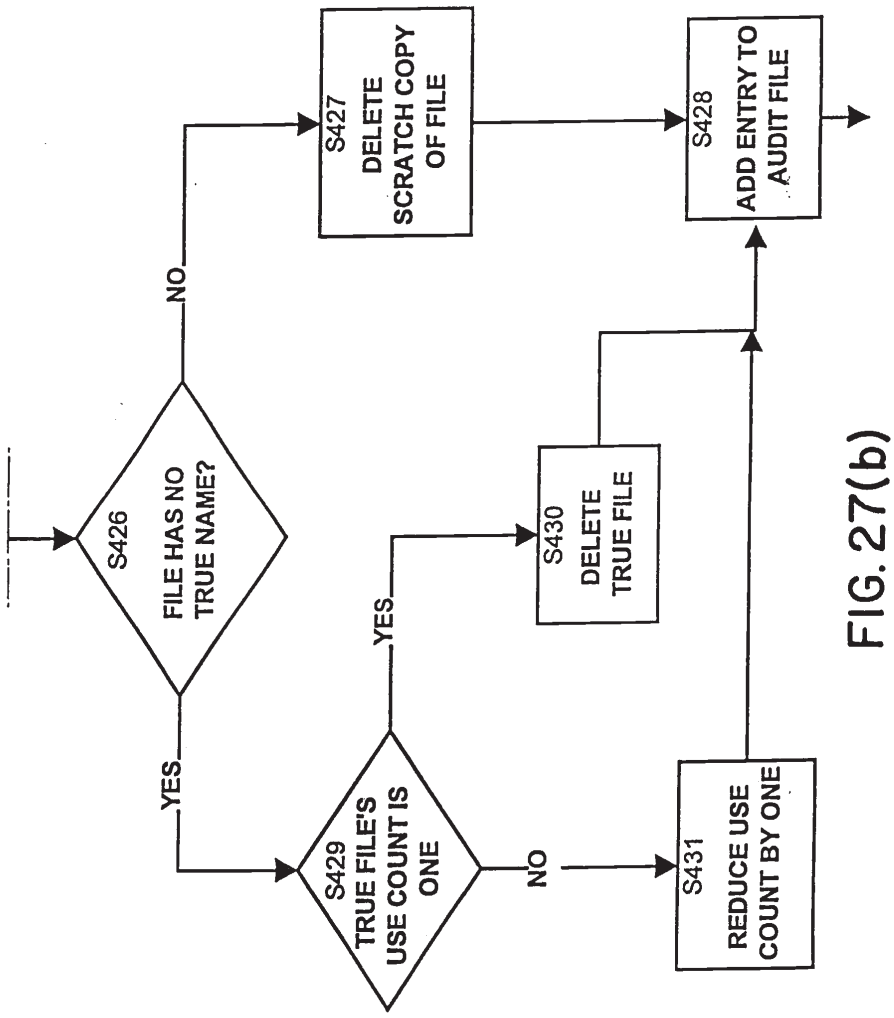
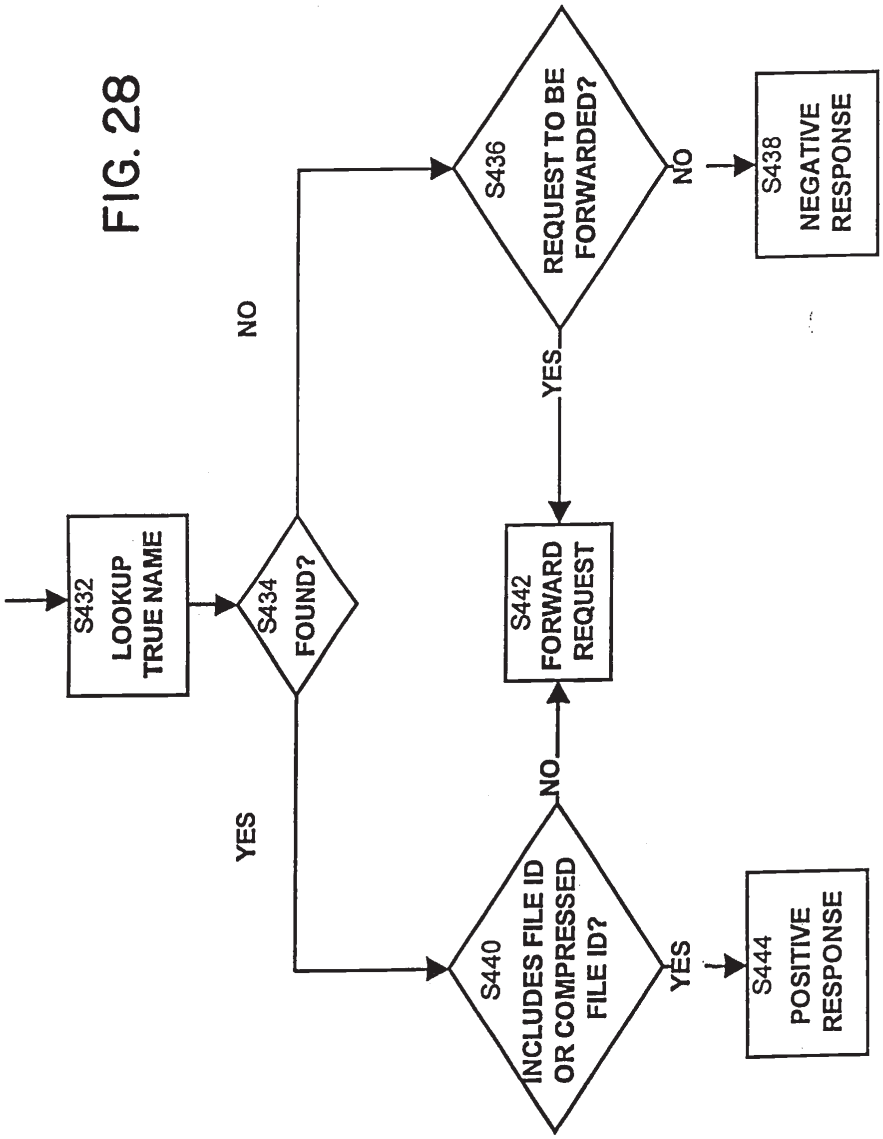

S426
FILE HAS NO TRUE NAME?
NO
YES
S427
DELETE SCRATCH COPY OF FILE
S428
ADD ENTRY TO AUDIT FILE
S429
TRUE FILE'S USE COUNT IS ONE
YES
NO
S430
DELETE TRUE FILE
S431
REDUCE USE COUNT BY ONE

FIG. 27(b)

FIG. 28


S432
LOOKUP TRUE NAME
S434
FOUND?
NO
YES
S436
REQUEST TO BE FORWARDED?
NO
S438
NEGATIVE RESPONSE
YES
S442
FORWARD REQUEST
YES
S440
INCLUDES FILE ID OR COMPRESSED FILE ID?
NO
YES
S444
POSITIVE RESPONSE

H C

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/283,160	04/01/1999	DAVID A. FARBER	PM252465	9574

7590 01/25/2002

PILLSBURY MADISON & SUTRO
INTELLECTUAL PROPERTY GROUP
1100 NEW YOUK AVENUE NW
NINTH FLOOR EAST TOWER
WASHINGTON, DC 200053918

EXAMINER
HOMERE, JEAN RAYMOND

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 01/25/2002 #16

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

H. G

09/283,160

UNITED STATES PARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
			1-1 G

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

The References submitted as Part of the Present IDS have not been considered because applicant failed to Provide copies therefrs, and failed to fill in the class/subclass of the cited Patents.

Jean R. Homere
Primary Examiner
2177

PTO-90C (Rev. 2/95)
*U.S. GPO: 1998-437-638/80022

1- File Copy

FROM
Intellectual Property Group of
Pillsbury Winthrop LLP
Attorneys at Law
1600 Tysons Boulevard
McLean, VA 22102

Telephone: (703) 905-2000

Our Facsimile #: (703) 905-2500

Official

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FACSIMILE TRANSMISSION

TO: UNITED STATES PATENT AND TRADEMARK OFFICE

FACSIMILE #: (703) 746-7239

No. Pages (Including this page) 12 FAX Opr: Brian Siritzky

IF YOU DO NOT RECEIVE CLEARLY ALL PAGES, PLEASE CONTACT US IMMEDIATELY
By Telephone AT: (703)905-2185 (local)
or (703) 905-2000(local)

->->-> USPTO:
PLEASE ACKNOWLEDGE CLEAR RECEIPT OF ALL PACES INDICATED ABOVE BY FAXING THIS PAGE BACK TO ONE OF OUR FACSIMILE NUMBERS STATED ABOVE

In re PATENT APPLICATION of
Inventor(s) Farber et al
Appln. No. 09/283,160
series code ↑ ↑ serial no.
Filed: April 1, 1999

Group Art Unit: 2177
Examiner: Homere, J.
Atty. Dkt. PM 252465
M#
Date: January 31, 2002

TITLE: IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Name or type of signed paper being transmitted:
Response

MESSAGE:
U R G E N T!!

U R G E N T

Please deliver this fax to Primary Examiner HOMERE as soon as possible.

Examiner Homere,
As promised, here's the Form 1449 with the class/subclass filled in. I've also provided a copy of the 1st 2 pages of the parent patent and a formal response to your last communication. Please call me if anything else is needed.
Thanks,
Brian Siritzky

(ATTN: Atty/Sec.: Transmit only one paper herewith. For papers not acceptable by fax, see back side or LAN Forms Directory PAT-286 Rev. Do not file originals but fasten them in our file (left side) with this sheet and fax receipt on top. Do NOT send the originals nor a confirmation copy to the PTO.)

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Name Brian Siritzky Sig. Date 1/31/2002

007108/0252465
C# / M#

PAT-286 7/99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of

FARBER et al.

Group Art Unit: 2177

Examiner: Homere, Jean R.

Appln. No. 09/283,160

Filed: April 1, 1999

EXPEDITED EXAMINATION

For: **IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA** (As Amended)

* * * * *

January 31, 2002

RESPONSE TO COMMUNICATION OF 01/25/2002

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Applicant thanks Primary Examiner Homere for the courtesy extended during the telephone call with Brian Siritzky on January 30, 2002.

Submitted herewith are copies of the form PTO-1449 (three pages) that was submitted upon the filing of this application. As promised, Applicant has edited this form to include the class and subclass for each cited U.S. patent. In addition, the following changes were made to the forms:

- applicant corrected two spelling errors in the other references (WR on page 1 & TR on page 2);
- three duplicate citations have been struck out (MR on pg. 1, BR and DR on pg. 3)
- two citations (JR and LR) on page 2 were corrected.

All of the references listed on these three pages of the Form 1449 were of record (cited by Applicant or the PTO) in the parent of this application (Appln. No.

08/960,079, now U.S. Pat. No. 5,978,791) and are listed on the face of the '791 patent that issued from the parent. (A copy of the first two pages of the '791 patent is also enclosed.)

Applicant also includes a copy of the request for filing of this application and refers, in particular, to item 12, on page 3, which states:

> **INFORMATION DISCLOSURE STATEMENT:** Attached is Form PTO-1449 listing all of the documents cited by Applicant and the PTO in the parent application(s) relied upon under 35 USC 120 and referenced in item 9 above. Per Rule 98(d) copies of those documents are not required now. Please consider those documents and advise that they have been considered in this new application as by returning a copy of the enclosed Form PTO-1449 with the Examiner's initials in the left column per MPEP 609. .

Applicants respectfully submit that in view of their compliance with 37 C.F.R. § 1.98(d), copies of the references cited in the PTO-1449 forms are not required to be provided to the Patent Office.

Please consider the documents cited on the enclosed Form 1449 (3 pages) and advise that they have been considered in this application as by returning to the undersigned (by facsimile please) a copy of the enclosed Forms PTO-1449 with the Examiner's initials in the left column per MPEP 609.

The Examiner is respectfully reminded that this application is under **expedited examination**.

Respectfully submitted,

PILLSBURY WINTHROP, LLP

By _____

Brian Siritzky
Reg. No. 37497
Tel. No.: (703) 905-2185
Fax No.: (703) 905-2500

1600 Tysons Boulevard,
McLean, Virginia 22102
(703) 905-2000

To: U.S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Dkt No 252465

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No.: R.53(B)(1) Div. of 08/960,079

Filing Date: April 1, 1999

Date: April 1, 1999 Page 1 of 3

Examiner: Homere, J. Group Art Unit 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,888,681	12/1989	BARNES	364	200	
	BR	4,972,367	11/1990	BURKE	364	900	
	CR	5,050,212	09/1991	DYSON	380	25	
	DR	5,202,982	04/1993	GRAMLICH	365	600	
	ER	5,208,858	05/1993	VOLLERT	380	43	
	FR	5,301,316	05/1994	HAMILTON	395	600	
	GR	5,343,527	08/1994	MOORE	480	4	
	HR	4,571,700	02/1996	EMRY, JR.	364	900	
	IR	4,675,810	06/1987	GRUNER	364	200	
	JR	5,050,074	09/1991	MARCA	364	200	
	KR	5,276,901	01/1994	HOWELL	395	800	
	LR	5,384,565	01/1995	CANNON	340	825.44	
	MR	~~5,202,982~~	~~04/1993~~	~~GRAMLICH~~	~~395~~	~~600~~	
	NR	5,357,623	10/1994	MEGORY-COHEN	395	425	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Bert den Boer et al., Collisions for the compression function of MD5, pp. 292-304
	WR	Sakti Pramanik et al., Multi-Directory Hashing, 1993, Info. Sys., Vol. 18, No. 1, pp. 63-74
	XR	Murlidhar Koushik, Dynamic Hashing with Distributed Overflow Space A File Organization with Good Insertion Performance, 1993, Info. Sys . Vol 18, No. 5, pp. 299-317
	YR	Witold Litwin et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech. Report No. HPL-93-21, June 1993, pp. 1-22
	ZR	Yuliang Zheng et al., HAVAL - A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp. 83-105
	AAR	Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlineanty, Pieprzky, pp. 156-164

Examiner Date Considered:

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant

PAT-1449 12/98

FORM PTO-1449 (modified)
To: U S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Dkt. No.	
	252465

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al

Appln. No.: R.53(B)(1) Div. of 08/960,079

Filing Date. April 1, 1999

Date April 1, 1999 Page 2 of 3 Examiner Homere, J Group Art Unit 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	3,668,647	06/1992	EVANGELISTI	340	172.5	
	BR	4,215,402	07/1980	MITCHELL	364	200	
	CR	4,290,105	09/1981	CICHELLI	364	200	
	DR	4,376,299	03/1983	RIVEST	364	900	
	ER	4,405,829	09/1983	RIVEST	178	22	
	FR	4,412,285	10/1983	NECHES	364	200	
	GR	4,414,624	11/1983	SUMMER, JR	364	200	
	HR	4,441,155	04/1984	FLETCHER	364	200	
	IR	4,464,713	08/1984	BENHASE	364	200	
	JR	4,577,293	03/1986	MATICK	365	189	
	KR	4,642,793	02/1987	MEADEN	364	900	
	LR	4,691,299	09/1987	RIVEST	365	185	
	MR	4,725,945	02/1988	KRONSTADT	364	200	
	NR	4,773,039	09/1988	ZAMORA	364	900	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Witold Litwin et al., Linear Hashing for Distributed Files, ACM SIGMOD, May 1993, pp 327-336
	WR	Ming-Ling Lo et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993
	XR	Thomas A Berson, Differential Cryptanalysis Mod 2^{32} with Applications to MD5, pp. 69-81
	YR	William Perrizo et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244
	ZR	Vijay Kumar, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113
	AAR	Birgit Pfitzman, Sorting Out Signature Schemes, November 1993, 1st Conf. Computer & Comm. Security '93, p. 74-85

Examiner Date Considered:

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609 Draw line through citation if not in conformance and not considered Include copy of this form with next communication to Applicant.

PAT-1449 12/88

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt No	MP	Client Ref
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No.: R 53(B)(1) Div. of 08/960,079

Filing Date: April 1, 1999

Date: April 1, 1999 Page 3 of 3

Examiner: Homere, J. Group Art Unit: 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,887,235	12/1989	HOLLOWAY	364	200	
	BR	~~4,888,681~~	~~12/1989~~	~~BARNES~~	~~364~~	~~200~~	
	CR	4,490,782	12/1984	DIXON	364	200	
	DR	~~4,972,367~~	~~11/1990~~	~~BURKE~~	~~364~~	~~900~~	
	ER	4,922,414	05/1990	HOLLOWAY	364	200	
	FR	5,057,837	10/1991	COLWELL	341	55	
	GR	5,007,658	12/1991	BENDERT	395	600	
	HR	5,025,421	06/1991	CHO	365	230.05	
	IR	5,129,081	07/1992	KOBAYASHI	365	600	
	JR	5,129,082	07/1992	TIRFING	395	600	
	KR	5,144,667	09/1992	POGUE, JR.	380	45	
	LR	5,179,680	01/1993	COLWELL	395	425	
	MR	5,301,286	04/1994	RAJANI	395	400	
	NR	5,404,508	04/1995	KONRAD	395	600	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	SR	Zhiyu Tian et al., A New Hashing Function: Statistical Behaviour and Algorithm, pp 3-13
	TR	G. L. Friedman, Digital Camera with Apparatus for Authentication of Images Produced from an Image File, NASA CASE NO. NPO-19108-1-CU, Serial No 08/159,980, November 24, 1993
	UR	H. Goodman, Ada, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277
	VR	Advances in Cryptology-EUROCRYPT'93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993 Proceedings
	WR	Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993
	XR	Advances in Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings

Examiner Date Considered.

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

PAT-1449 12/98

US005978791A

United States Patent [19]

Farber et al.

[11] Patent Number: 5,978,791

[45] Date of Patent: Nov. 2, 1999

[54] **DATA PROCESSING SYSTEM USING SUBSTANTIALLY UNIQUE IDENTIFIERS TO IDENTIFY DATA ITEMS, WHEREBY IDENTICAL DATA ITEMS HAVE THE SAME IDENTIFIERS**

[75] Inventors: **David A. Farber**, Ojai, Calif.; **Ronald D. Lachman**, Northbrook, Ill.

[73] Assignee: **Kinetech, Inc.**, Northbrook, Ill

[21] Appl. No **08/960,079**

[22] Filed. **Oct. 24, 1997**

Related U.S. Application Data

[63] Continuation of application No. 08/425,160, Apr. 11, 1995, abandoned

[51] **Int. Cl.**[6] **G06F 17/30**

[52] **U.S. Cl.** **707/2**; 707/1, 707/200

[58] **Field of Search** 707/2, 1, 200

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,668,647	6/1972	Evangelisti et al.	340/172.5
4,215,402	7/1980	Mitchell et al.	364/200
4,290,105	9/1981	Cichelli et al.	364/200
4,376,299	3/1983	Rivest	364/900
4,405,829	9/1983	Rivest et al.	178/22.1
4,412,285	10/1983	Neches et al.	364/200
4,414,624	11/1983	Summer, Jr. et al.	364/200
4,441,155	4/1984	Fletcher et al.	364/200
4,464,713	8/1984	Benhase et al.	364/200
4,490,782	12/1984	Dixon et al.	364/200
4,571,700	2/1986	Emry, Jr. et al.	364/900
4,577,293	3/1986	Matick et al.	365/189
4,642,793	2/1987	Meaden	364/900
4,675,810	6/1987	Gruner et al.	364/200
4,691,299	9/1987	Rivest et al.	365/185
4,725,945	2/1988	Kronstadt et al.	364/200
4,773,039	9/1988	Zamora	364/900
4,887,235	12/1989	Holloway et al.	364/900
4,888,681	12/1989	Barnes et al.	364/200
4,922,414	5/1990	Holloway et al.	364/200
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5,057,837	10/1991	Colwell et al.	341/55
5,129,081	7/1992	Kobayashi et al.	395/600
5,129,082	7/1992	Tirfing et al.	395/600
5,144,667	9/1992	Pogue, Jr. et al.	380/45
5,179,680	1/1993	Colwell et al.	395/425
5,202,982	4/1993	Gramlich et al.	395/600
5,208,858	5/1993	Vollert et al.	380/43
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5,301,316	4/1994	Hamilton et al.	395/600
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5,404,508	4/1995	Konrad et al.	395/600

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Ming–Ling Lo, et al, On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69–78, May 1993.

Thomas A. Berson, Differential Cryptanalysis Mod 2^{32} with Applications to MD5, pp 69–81. 1992

(List continued on next page.)

Primary Examiner—Paul V. Kulik

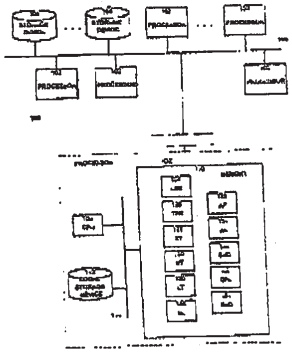
Assistant Examiner—Jean R. Homere

Attorney, Agent, or Firm—Pillsbury Madison & Sutro LLP

[57] **ABSTRACT**

In a data processing system, a mechanism identifies data items by substantially unique identifiers which depend on all of the data in the data items and only on the data in the data items. The system also determines whether a particular data item is present in the database by examining the identifiers of the plurality of data items.

48 Claims, 31 Drawing Sheets



OTHER PUBLICATIONS

William Perrizo, et al., Distributed Join Processing Performance Evaluation, 1994 Twenty-Seventh Hawaii International Conference on System Sciences, vol II, pp 236–244.

A concurrency Control Mechanism based on Extendible Hashing for Main Memory Database Systems, Vijay Kumar, pp 109–113, ACM. vol. 3, 1989

Birgit Pfitzmann, Sorting Out Signature Schemes, Nov. 1993, 1st Conf. Computer & Comm. Security '93 pp 74–85

Bert den Boer, et al., Collisions for the compression function of MD_5 pp 292–304, 1994.

Sakti Pramanik, et al., Multi-Directory Hashing, 1993, Info. Sys., vol 18, No 1, pp. 63–74.

Murlidhar Koushik, Dynamic Hashing With Distributed Overflow Space: A File Organization With Good Insertion Performance, 1993. Info. Sys., vol 18, No. 5, pp. 299–317.

Witold Litwin, et al., LH*–Linear Hashing for Distributed Files, HP Labs Tech. Report No. HPL–93–21 Jun. 1993 pp. 1–22

Yuliang Zheng, et al., HAVAL — A One–Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp. 83–105, Advances in Cryptology, AUSCRIPT '92, 1992.

Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlinearity, Pieprzky, pp. 156–164, 1993?3.

Zhiyu Tian, et al., A New Hashing Function : Statistical Behaviour and Algorithm, pp 3–13, SIGIR Forum, 1993.

G. L. Friedman, Digital Camera With Apparatus For Authentication of Images Produced From an Image File, NASA Case No NPO–19108–1–CU. Serial No. 08/8/159,980, Nov. 24, 1993.

H. Goodman, Feb 9, 1994 Ada, Object–Oriented Techniques, and Concurrency in Teaching Data Structures and File Management Report Documentation P. AD–A275 385 — 94–04277.

Advances in Cryptology–EUROCRYPT '93, Worokshop on the Theory and Application of Cryptographic TeTechniques Lofthus, Norway, May 23–27, 1993 Proceedings.s.

Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, vol. 22, Issue 2, J, Jun. 1993

Advances in Cryptology–AUSCRYPT '92 — Worurkshop on the Theory and Application of Cryptographic TeTechniques Gold Coast, Queensland, Australia Dec 13–16, 1 1992 Proceedings

Search Report dated Jun 24, 1996.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REQUEST FOR FILING
(RULE 53(b)(1))

For Design or Utility Applications (DO NOT USE FOR CIPs)

Rule 53(b)(1) PATENT APPLICATION.

☐ Continuation)
) application under 37 CFR 1.53(b)(1)
☒ Divisional)

of pending prior application of

Group Art Unit: 2776

Examiner: Homere, J.

Inventor(s): FARBER et al.

Parent Appln. No.: 08 (Series Code ⇧) | 960,079 (⇧ Serial No.)

Atty Dkt. PM 252465 (New M#) | (Client Ref)

Parent Filed: October 24, 1997

This Case Filed April , 1999

(Our Deposit Account No. 03-3975

(Our Order No. 7018/252465 (C# / New M#)

Title: IDENTIFYING DATA IN A DATA PROCESSING SYSTEM

Date: April 1, 1999

Asst. Commissioner of Patents
Washington, DC 20231

(Parent Matter No. 243063)

Sir:

To effect the above-requested filing today:

1. **Attached** is a copy **(which must be filed)** of this application, including:

☒ Abstract
☒ Specification and claims (94 pages) **(must be attached)**
☒ Drawings **(must be attached if originally filed):** 24 sheet(s)/set: ☒ 1 set informal. ☐ Formal of size ☐ A4 ☐ 11"

1A. Always X one box, only:
(1) ☒ Signed declaration or oath as originally filed in prior application attached
(2) ☐ NO declaration or fee is enclosed; therefore, this is a filing under Rule 53(f).

2 ☐ This application is hereby filed by less than all of the inventors named in the prior application. Petition is hereby made requesting deletion as inventor(s) of the following who is/are **not** inventor(s) of the invention being claimed in this application:

1. _____ 2. _____
3. _____ 4. _____
5. _____ 6. _____
7. _____ 8. _____
9. _____ 10. _____

3. The entire disclosure of the prior application is considered as being part of the disclosure of the accompanying application and is hereby incorporated therein by reference thereto.

PAT-108 12/95

4 ☐ Priority is claimed under 35 U.S.C. 119/365 based on filing in _____ of (country)

Application No.	Filing Date	Application No	Filing Date
(1) _____	_____	(4) _____	_____
(2) _____	_____	(5) _____	_____
(3) _____	_____	(6) _____	_____

a. ☐ _____ (No.) Certified copy/copies attached
b. ☐ Certified copy/copies previously filed on _____ in U.S. Application No _____/_____, filed on _____ (series code ⇧ ⇧ serial no.)
c. ☐ Certified copy/copies filed during International stage of PCT/ _____/_____, filed _____

4 (a) ☐ Domestic priority is claimed from PCT/ _____/_____.
(b) ☐ Benefit is claimed of Provisional Application No. 60/_____, filed _____.

5. ☒ Prior application is assigned to kiNETech, Inc.

by assignment recorded June 23, 1995 (Date) Reel 7593 Frame 0036.

6. ☒ Attached is the following number of Assignments (including original and all later successive ones by different assignors) 1 and respective new Cover Sheets (Do **NOT** file old cover sheets.)

(Assignments in parent **must be refiled** with new Cover Sheets in this continuing application if you want it/them recorded against the continuing application.)

Please return the recorded Assignment to the undersigned.

7. ☒ The power of attorney in the prior application is to Dale S. Lazar, Reg. No. 28,872

(Name and Reg. No.)
whose current address is as in item 8 below.

a. ☒ Recognize as associate attorney Brian Siritzky, Reg. No. 37,497

(Name, Reg. No. and Address)

8 **Address all future communications to Intellectual Property Group of Pillsbury Madison & Sutro LLP, Ninth Floor, East Tower 1100 New York Avenue, N.W., Washington, D.C. 20005-3918**

9. ☒ **Amend the specification** by inserting before the first line the sentence:--This is a ☐ continuation ☒ division of Application No. 08/960,079, filed October 24, 1997 (series code ⇧ ⇧ serial no.) which is a continuation of 08/425,160, filed April 11, 1995, now abandoned. --

9. (a) ☐ **Amend the specification** by inserting before the first line: --This application claims the benefit of Provisional Application No. 60/_____, filed _____ --

10 ☒ It has been recently determined that this new continuing application is entitled to small entity status. Hence:
(No.) Verified Statement(s) establishing "small entity" status under Rules 9 & 27 were/are:
☒ filed in above prior application (and hence applicable hereto)
☒ attached

11. Petition to extend the life of the above prior application to at least the date hereof
(one box) ☐ is being concurrently filed in that prior application (Use Form PAT-111).
(must be) ☐ was previously filed in that prior application (Check length of prior extension)
(X'd) ☒ is not necessary for copendency (**Double check** before X'ing this box).

PAT-108 12/88

12. ☒ **INFORMATION DISCLOSURE STATEMENT:** Attached is Form PTO-1449 listing all of the documents cited by Applicant and the PTO in the parent application(s) relied upon under 35 USC 120 and referenced in item 9 above. Per Rule 98(d) copies of those documents are not required now Please consider those documents and advise that they have been considered in this new application as by returning a copy of the enclosed Form PTO-1449 with the Examiner's initials in the left column per MPEP 609. .

13. ☐ Attached is a Rule 103(a) Petition to Suspend Action

14. ☒ **PRELIMINARY AMENDMENT to be entered before fee calculation:** (Do not make amendments here except for correction of improper multiple dependencies or cancellation of whole claims or multiple dependencies for purpose of reducing the filing fee per MPEP §§ 506 and 607; do not cancel all claims).

Please cancel claims 1-45 and 50-53 without prejudice The remaining claims correspond to non-elected Groups III & IV from the Examiner's Restriction Requirement of June 4, 1996.

FILING FEE

THE FOLLOWING FILING FEE IS BASED ON

->->->->CLAIMS AS FILED AND **CHANGED BY PRELIMINARY AMENDMENT IN ITEM 14**<-<-<-<-

NOTE: If box 1A2 is X'd, do not pay fees, but leave lines 15-22 and 27-32 blank

				Large/Small Entity		Fee Code
15 Basic Filing Fee . . . . . Design Application 16. Basic Filing Fee . . . . . Not Design Application				$310/$155 $760/$380	+380	106/26 101/201
17. Total Effective Claims	5	minus 20 =	0	x $18/$9	+0	103/203
18 Independent Claims	3	minus 3 =	0	x $78/$39	+0	102/202
19 If any proper multiple dependent claim (ignore improper) is present.				$260/$130	+0	104/204
20				Subtotal =	$380	
21. If "petition" box 13 above is X'd, add petition fee. $130					+0	122
21A. If box 6 above is X'd, add Assignment recording fee . . $ 40					+40	581
22				TOTAL FILING FEE ATTACHED =	$420	

(carry forward to Item 31)

23. ☐ ATTACHED

24. ☐ Preliminary Amendment attached (to be entered after assigning Appln. No.)

25. ☐ The following PRELIMINARY AMENDMENT is to be entered after assigning Appln. No.:

26

ADDITIONAL FEE CALCULATION FOR PRELIMINARY AMENDMENT PER BOXES 24/25

		Claims remaining after amendment		Highest number previously paid for		Present Extra			Additional Fee	
						Large/Small Entity				File Code
27.	Total Effective Claims	*	minus **	20	=	0	x $18/$9	=	$ 0	(103/203)
28	Independent Claims	*	minus ***	3	=	0	x $78/$39	=	+ 0	(102/202)
29	If amendment enters proper multiple dependent claim(s) into this application for the first time, add (per application) ..... $260/$130								+ 0	(104/204)
30.							ADDITIONAL FEE		$ 0	
31							plus FEE from item 22 on page 3		+ 420	
32.							**TOTAL FEE ATTACHED**		$ 420	

33. "If the entry in this space is less than the entry in the next space, the "Present Extra" result is "0"

34. **"If the "Highest number previously paid for" (see item 17 above) is less than 20, write "20" in this space

35. If the "Highest number previously paid for" (see item 18 above) is less than 3, write "3" in this space

CHARGE STATEMENT: Upon the filing of a Declaration pursuant to Rule 60(b) or 60(d), the Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos shown in the heading hereof for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed.

Pillsbury Madison & Sutro LLP
Intellectual Property Group

1100 New York Avenue, N.W.
Ninth Floor, East Tower
Washington, D.C. 20005-3918
Tel: (202) 861-3000
DSL/BS:kim
Atty./Sec.

By Atty: Dale S. Lazar **Reg. No.** 28872
Sig: _____
Fax: (202) 822-0944
Tel: (202) 861-3527

NOTE No. 1: File this Request in duplicate with 2 postcard receipts (PAT-103) & attachments
NOTE No. 2: Is extension in parent necessary for copendency? DOUBLE CHECK item 11 above.

#18
4/9/02
AM

FROM
Intellectual Property Group of
Pillsbury Winthrop LLP
Attorneys at Law
1600 Tysons Boulevard
McLean, VA 22102

Telephone: (703) 905-2000

Our Facsimile #: (703) 905-2500

FACSIMILE TRANSMISSION

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FACSIMILE #: (703) 746-7239

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->->-> USPTO:
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In re PATENT APPLICATION of
Inventor(s) Farber et al
Appln. No. 09/283,160
series code ↑ ↑ serial no.
Filed: April 1, 1999

TITLE: IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Group Art Unit: 2177
Examiner: Homere, J.
Atty. Dkt. PM 252465 M#
Date: Feb. 13, 2002

Name or type of signed paper being transmitted:
COPY OF EARLIER FILED RESPONSE

MESSAGE:
URGENT!! ***URGENT!!*** MATCH & RETURN

Please deliver this fax to Primary Examiner Jean HOMERE as soon as possible.

Examiner Homere,
Since we talked last week, I have not yet received copies of the initialed forms 1449 I sent you on 1/31/2002. So I am resending these forms. Please initial these forms and return them to me by fax at (703) 905-2500.
I have also enclosed a copy of my submission of 1/31/2002, including the 1st 2 pages of the parent of this application.
Thanks very much for your continued help with this matter,
Sincerely,
Brian Siritzky

(ATTN. Atty/Sec : Transmit only one paper herewith. For papers not acceptable by fax, see back side of LAN Forms Directory PAT-286 Rev. Do not file originals but fasten them in our file (left side) with this sheet and fax receipt on top. Do NOT send the originals nor a confirmation copy to the PTO.)

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PAT-286 7/99

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(PM&S FORM PAT-1449)
Patent and Trademark Office

Dkt. No.	(###)	Client Ref.
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al

Appln. No.: R.53(B)(1) Div of 08/960,079

Filing Date: April 1, 1999

Date: April 1, 1999 Page 1 of 3

Examiner: Homere, J. Group Art Unit: 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,888,681	12/1989	BARNES	364	200	
	BR	4,972,367	11/1990	BURKE	364	900	
	CR	5,050,212	09/1991	DYSON	380	25	
	DR	5,202,982	04/1993	GRAMLICH	365	600	
	ER	5,208,858	05/1993	VOLLERT	380	43	
	FR	5,301,316	05/1994	HAMILTON	395	600	
	GR	5,343,527	08/1994	MOORE	480	4	
	HR	4,571,700	02/1996	EMRY, JR.	364	900	
	IR	4,675,810	06/1987	GRUNER	364	200	
	JR	5,050,074	09/1991	MARCA	364	200	
	KR	5,276,901	01/1994	HOWELL	395	800	
	LR	5,384,565	01/1995	CANNON	340	825.44	
	MR	~~5,202,982~~	~~04/1993~~	~~GRAMLICH~~	~~395~~	~~600~~	
	NR	5,357,623	10/1994	MEGORY-COHEN	395	425	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Bert den Boer et al., Collisions for the compression function of MD5, pp. 292-304
	WR	Sakti Pramanik et al., Multi-Directory Hashing, 1993, Info. Sys., Vol 18, No. 1, pp 63-74
	XR	Murlidhar Koushik, Dynamic Hashing with Distributed Overflow Space A File Organization with Good Insertion Performance, 1993, Info Sys., Vol. 18, No 5, pp 299-317
	YR	Witold Litwin et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech Report No. HPL-93-21, June 1993, pp 1-22
	ZR	Yuliang Zheng et al., HAVAL - A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp. 83-105
	AAR	Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlinearity, Pieprzky, pp. 156-164

Examiner Date Considered:

*EXAMINER Initial if citation considered, whether or not citation is in conformance with MPEP § 609 Draw line through citation if not in conformance and not considered Include copy of this form with next communication to Applicant.

PAT-1449 12/98

FORM PTO-1449 (modified)

To: U.S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt No	MM	Client Ref.
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No.: R.53(B)(1) Div. of 08/960,079

Filing Date: April 1, 1999

Date: April 1, 1999 Page 2 of 3

Examiner Homere, J. Group Art Unit 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	3,668,647	06/1992	EVANGELISTI	340	172.5	
	BR	4,215,402	07/1980	MITCHELL	364	200	
	CR	4,290,105	09/1981	CICHELLI	364	200	
	DR	4,376,299	03/1983	RIVEST	364	900	
	ER	4,405,829	09/1983	RIVEST	178	22	
	FR	4,412,285	10/1983	NECHES	364	200	
	GR	4,414,624	11/1983	SUMMER, JR	364	200	
	HR	4,441,155	04/1984	FLETCHER	364	200	
	IR	4,464,713	08/1984	BENHASE	364	200	
	JR	4,577,293	03/1986	MATICK	365	189	
	KR	4,642,793	02/1987	MEADEN	364	900	
	LR	4,691,299	09/1987	RIVEST	365	185	
	MR	4,725,945	02/1988	KRONSTADT	364	200	
	NR	4,773,039	09/1988	ZAMORA	364	900	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
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	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	VR	Witold Litwin et al., Linear Hashing for Distributed Files, ACM SIGMOD, May 1993, pp. 327-336
	WR	Ming-Ling Lo et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993
	XR	Thomas A. Berson, Differential Cryptanalysis Mod 2^{32} with Applications to MD5, pp. 69-81
	YR	William Perrizo et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244
	ZR	Vijay Kumar, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113
	AAR	Birgit Pfitzman, Sorting Out Signature Schemes, November 1993, 1st Conf. Computer & Comm. Security '93, p. 74-85

Examiner Date Considered:

*EXAMINER Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant

PAT-1449 12/98

To. U S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Dkt. No. 252465

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant FARBER et al

Appln No R 53(B)(1) Div. of 08/960,079

Filing Date April 1, 1999

Date. Apnl 1, 1999 Page 3 of 3

Examiner Homere, J. Group Art Unit: 2776

U.S PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR	4,887,235	12/1989	HOLLOWAY	364	200	
	BR	~~4,888,681~~	~~12/1989~~	~~BARNES~~	~~364~~	~~200~~	
	CR	4,490,782	12/1984	DIXON	364	200	
	DR	~~4,972,367~~	~~11/1990~~	~~BURKE~~	~~364~~	~~900~~	
	ER	4,922,414	05/1990	HOLLOWAY	364	200	
	FR	5,057,837	10/1991	COLWELL	341	55	
	GR	5,007,658	12/1991	BENDERT	395	600	
	HR	5,025,421	06/1991	CHO	365	230.05	
	IR	5,129,081	07/1992	KOBAYASHI	365	600	
	JR	5,129,082	07/1992	TIRFING	395	600	
	KR	5,144,667	09/1992	POGUE, JR	380	45	
	LR	5,179,680	01/1993	COLWELL	395	425	
	MR	5,301,286	04/1994	RAJANI	395	400	
	NR	5,404,508	04/1995	KONRAD	395	600	

FOREIGN PATENT DOCUMENTS

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	OR										
	PR										
	QR										
	RR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	SR	Zhiyu Tian et al., A New Hashing Function: Statistical Behaviour and Algorithm, pp. 3-13
	TR	G. L. Friedman, Digital Camera with Apparatus for Authentication of Images Produced from an Image File, NASA CASE NO NPO-19108-1-CU, Serial No 08/159,980, November 24, 1993
	UR	H. Goodman, Ada, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277
	VR	Advances in Cryptology-EUROCRYPT'93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993 Proceedings
	WR	Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993
	XR	Advances in Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings

Examiner Date Considered

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

PAT-1449 12/98

FROM
Intellectual Property Group of
Pillsbury Winthrop LLP
Attorneys at Law
1600 Tysons Boulevard
McLean, VA 22102

Telephone: (703) 905-2000

Our facsimile #: (703) 905-2500

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In re PATENT APPLICATION of
Inventor(s) Farber et al
Appln. No. 09/283,160
series code ↑ ↑ serial no.
Filed: April 1, 1999
TITLE: IDENTIFYING AND REQUESTING DATA IN NETWORK USING IDENTIFIERS WHICH ARE BASED ON CONTENTS OF DATA

Group Art Unit: 2177
Examiner: Homere, J.
Atty. Dkt. PM 252465
M#
Date: March 26, 2002

Name or type of signed paper being transmitted:
Response

MESSAGE:
U R G E N T !! U R G E N T

Please deliver this fax to Primary Examiner HOMERE as soon as possible.

Examiner Homere,
Per your request, here's the Form 1449 with the class/subclass filled in. I've also provided a copy of the 1st 2 pages of the parent patent. Please call me if anything else is needed.
Thanks,
Brian Siritzky

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Name Brian Siritzky Sig. _____ Date 3/26/2002

007108/0252465
C# / M#

PAT-286 7/99

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Patent and Trademark Office

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Dkt No	252465
Applicant	FARBER et al
Appln No	09/283,160 (R.53(B)(1) Div of 08/960,079)
Filing Date	April 1, 1999
Examiner	Homere, J
Group Art Unit	2776

Date: April 1, 1999 Page 1 of 3

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	4,888,681	12/1989	BARNES	364	200	
	BR	4,972,367	11/1990	BURKE	364	900	
	CR	5,050,212	09/1991	DYSON	380	25	
	DR	5,202,982	04/1993	GRAMLICH	365	600	
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	FR	5,301,316	05/1994	HAMILTON	395	600	
	GR	5,343,527	08/1994	MOORE	480	4	
	HR	4,571,700	02/1996	EMRY, JR.	364	900	
	IR	4,675,810	06/1987	GRUNER	364	200	
	JR	5,050,074	09/1991	MARCA	364	200	
	KR	5,276,901	01/1994	HOWELL	395	800	
	LR	5,384,565	01/1995	CANNON	340	825 44	
	MR	~~5,202,982~~	~~04/1993~~	~~GRAMLICH~~	~~395~~	~~600~~	
	NR	5,357,623	10/1994	MEGORY-COHEN	395	425	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract		Translation Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
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	SR										
	TR										
	UR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

JRH	VR	Bert den Boer et al., Collisions for the compression function of MD_5, pp. 292-304
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	XR	Murlidhar Koushik, Dynamic Hashing with Distributed Overflow Space: A File Organization with Good Insertion Performance, 1993, Info Sys., Vol. 18, No 5, pp 299-317
	YR	Witold Litwin et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech Report No. HPL-93-21, June 1993, pp. 1-22
	ZR	Yuliang Zheng et al., HAVAL - A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp 83-105
	AAR	Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlinearity, Pieprzky, pp. 156-164

Examiner Jean R. Homere Date Considered: 3/26/02

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

PAT-1449 12/98

FORM PTO-1449 (modified)
To: U.S Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt. No	M#	Client Ref.
	252465	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al.

Appln. No 09/283,160 (R.53(B)(1) Div. of 08/960,079)

Filing Date April 1, 1999

Date: April 1, 1999 Page 2 of 3

Examiner Homere, J. Group Art Unit: 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	3,668,647	06/1992	EVANGELISTI	340	172.5	
	BR	4,215,402	07/1980	MITCHELL	364	200	
	CR	4,290,105	09/1981	CICHELLI	364	200	
	DR	4,376,299	03/1983	RIVEST	364	900	
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	GR	4,414,624	11/1983	SUMMER, JR.	364	200	
	HR	4,441,155	04/1984	FLETCHER	364	200	
	IR	4,464,713	08/1984	BENHASE	364	200	
	JR	4,577,293	03/1986	MATICK	365	189	
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	LR	4,691,299	09/1987	RIVEST	365	185	
	MR	4,725,945	02/1988	KRONSTADT	364	200	
	NR	4,773,039	09/1988	ZAMORA	364	900	

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	WR	Ming-Ling Lo et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993
	XR	Thomas A. Berson, Differential Cryptanalysis Mod 2^{32} with Applications to MD5, pp. 69-81
	YR	William Perrizo et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244
	ZR	Vijay Kumar, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113
	AAR	Birgit Pfitzman, Sorting Out Signature Schemes, November 1993, 1st Conf. Computer & Comm. Security '93, p. 74-85

Examiner JEAN R. HOMERE Date Considered: 3/26/02

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

PAT-1449 12/98

PTO/SB/08A (modified)
To: U.S. Department of Commerce
(PM&S FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt. No: 252465
Client Ref:

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: FARBER et al

Appln. No. 09/283,160 (R.53(B)(1) Div. of 08/960,079)

Filing Date: April 1, 1999

Date April 1, 1999 Page 3 of 3

Examiner: Homere, J. Group Art Unit: 2776

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	4,887,235	12/1989	HOLLOWAY	364	200	
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	OR										
	PR										
	QR										
	RR										

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

JRH	SR	Zhiyu Tian et al., A New Hashing Function: Statistical Behaviour and Algorithm, pp. 3-13
	TR	G. L. Friedman, Digital Camera with Apparatus for Authentication of Images Produced from an Image File, NASA CASE NO. NPO-19108-1-CU, Serial No. 08/159,980, November 24, 1993
	UR	H Goodman, Ada, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277
	VR	Advances in Cryptology-EUROCRYPT'93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993 Proceedings
	WR	Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993
	XR	Advances in Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings

Examiner: Jean R. Homere Date Considered: 3/26/02

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

PAT-1449 12/88