



US005649196A

United States Patent [19]

[11] Patent Number: 5,649,196

Woodhill et al.

[45] Date of Patent: Jul. 15, 1997

[54] SYSTEM AND METHOD FOR DISTRIBUTED STORAGE MANAGEMENT ON NETWORKED COMPUTER SYSTEMS USING BINARY OBJECT IDENTIFIERS

[75] Inventors: James R. Woodhill, Houston; Louis R. Woodhill, Richmond; William Russell More, Jr.; Jay Harris Berlin, both of Houston, all of Tex.

[73] Assignee: Legent Corporation, Pittsburgh, Pa.

[21] Appl. No.: 555,376

[22] Filed: Nov. 9, 1995

Related U.S. Application Data

- [63] Continuation of Ser. No. 85,596, Jul. 1, 1993, abandoned.
[51] Int. Cl. G06F 11/00
[52] U.S. Cl. 395/620; 395/610; 395/618; 395/200.03; 395/489; 395/497.04; 395/185.01; 395/183.17; 395/182.04; 395/180; 364/DIG. 1; 364/285; 364/285.1; 364/284.4
[58] Field of Search 395/610, 618, 395/620, 200.03, 489, 497.04, 185.01, 183.17, 182.04, 180; 364/DIG. 1

[56] References Cited

U.S. PATENT DOCUMENTS

Table with 4 columns: Patent No., Date, Inventor, and Patent No. (repeated). Rows include Logsdon et al., Cheffetz et al., Gramlich et al., Stallmo et al., Davis et al., Rudeseal et al., Altine, Ng et al., Jewett et al., and Webber et al.

OTHER PUBLICATIONS

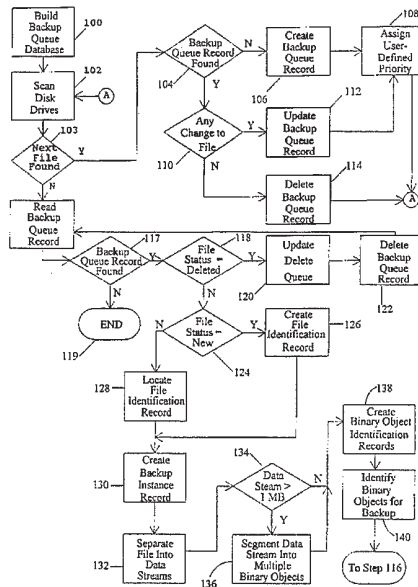
The 8th International Conference on Distributed Computing Systems, 13 Jun. 1988, San Jose, California pp. 471-479 (Relevant to claim No. 1, 2, 5, 8, 9, 18, 19) Daniel Barbara et al. 'Exploiting symmetries for low-cost comparison of file copies' see p. 471, right col., line 29-p. 472, left col., line 10 (Relevant to claim No. 3, 4, 6, 10-14, 20). Computer Technology Review, vol. 12, No. 10, Aug. 1992, Los Angeles US pp. 55-60 Daniel Masters 'Distributed Network Processing Speeds Up Network Backup' see p. 60, left col., line 18-line 31 (Relevant claim No. 10).

Primary Examiner—Paul V. Kulik
Assistant Examiner—Jean R. Homere
Attorney, Agent, or Firm—Kirkpatrick & Lockhart LLP

[57] ABSTRACT

The present invention is directed to a system and method for the distributed management of the storage space and data on a networked computer system wherein the networked computer system includes at least two storage devices for storing data files comprised of one or more binary objects. The distributed storage management system includes a device for selectively copying the binary objects stored on one of the storage devices to another of the storage devices and another device for calculating a current value for a binary object identifier for selected binary objects stored on the storage devices wherein the calculation of the binary object identifier is based upon the actual data contents of the associated binary object. The distributed storage management system further includes a device for storing the current value of the binary object identifier as a previous value of the binary object identifier, another device for comparing the current value of the binary object identifier associated with a particular binary object to one or more previous values of the binary object identifier associated with that particular binary object and a device for commanding the device for selectively copying binary objects in response to the device for comparing.

18 Claims, 14 Drawing Sheets



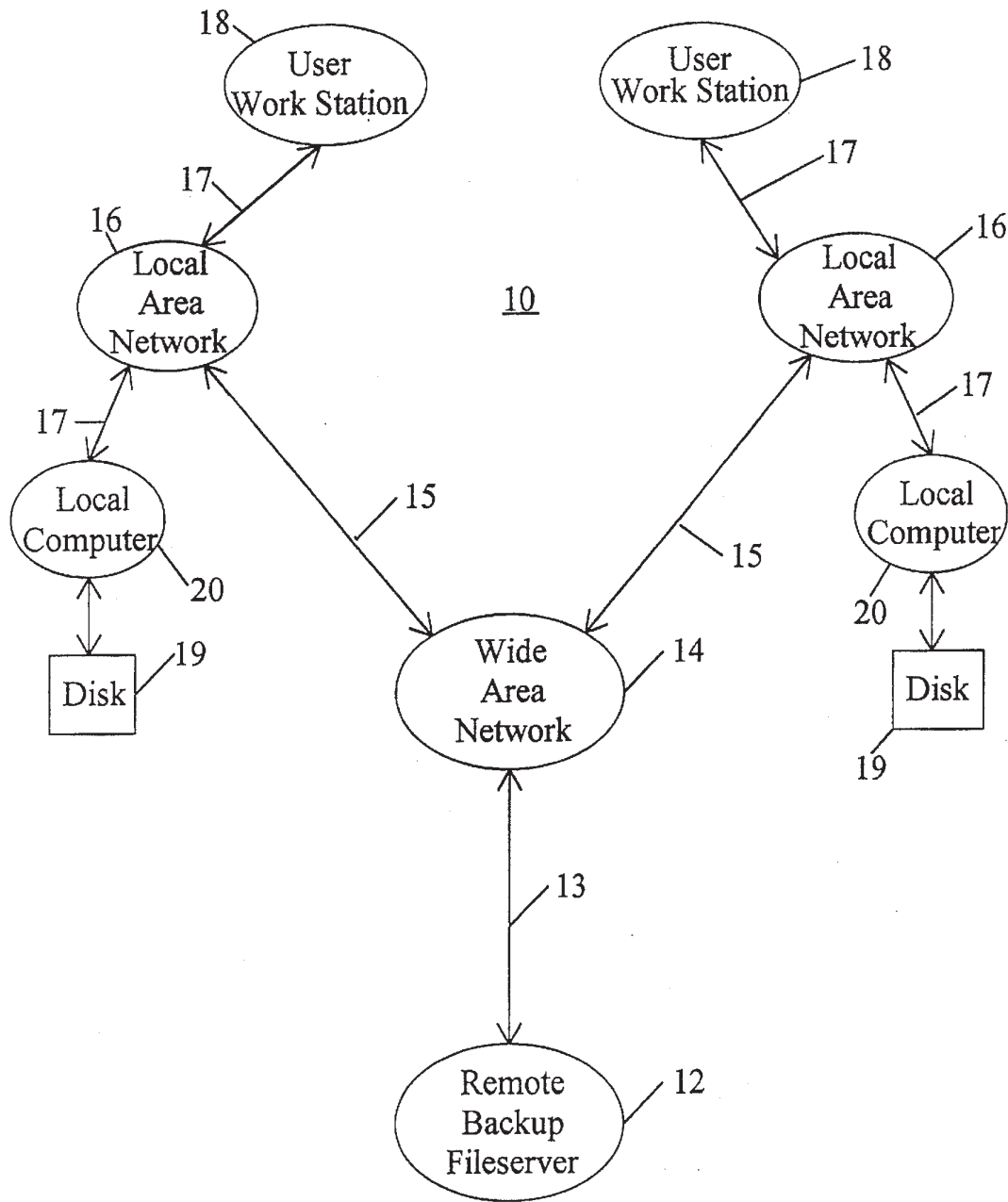


FIG. 1

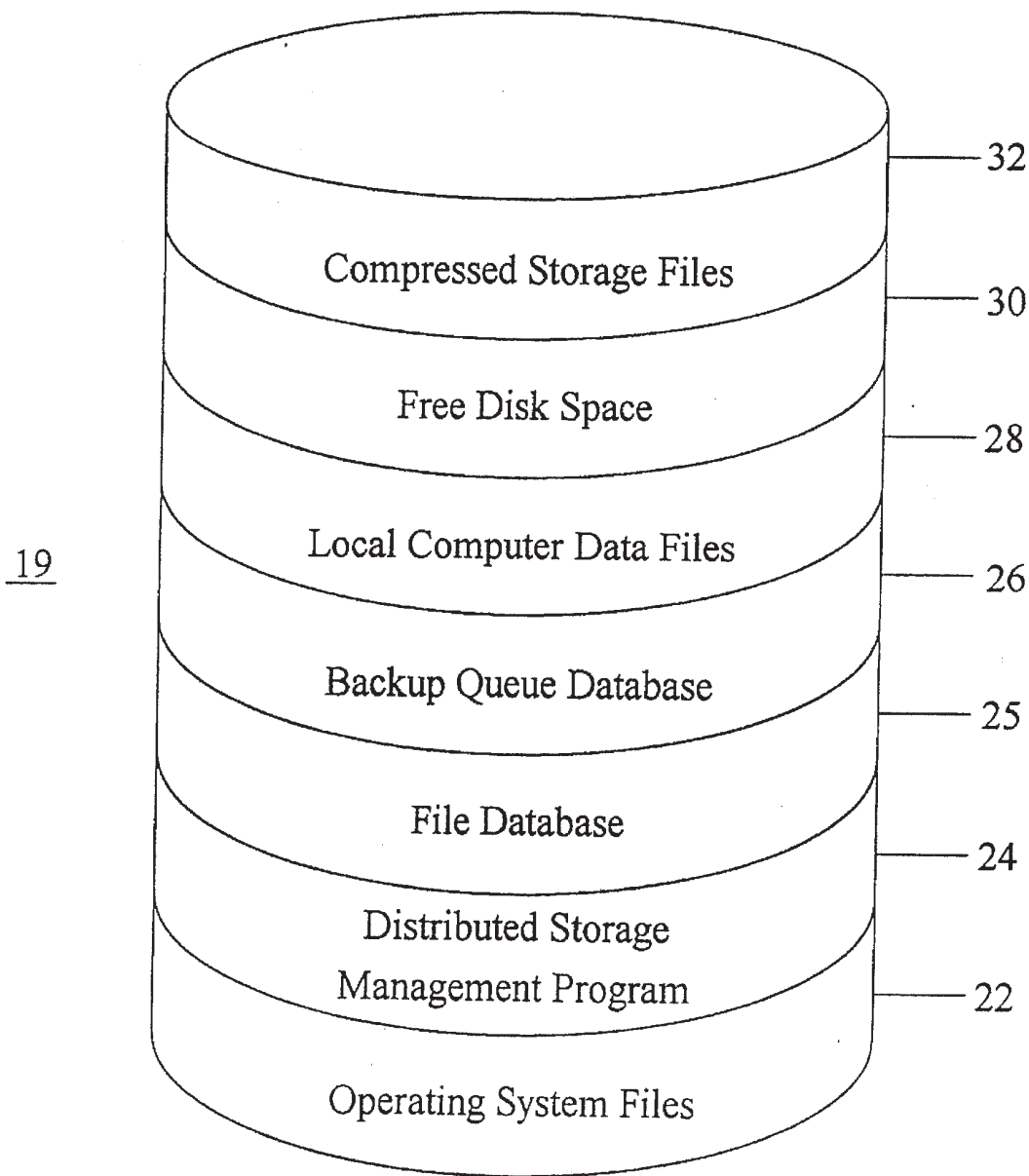


FIG. 2

25

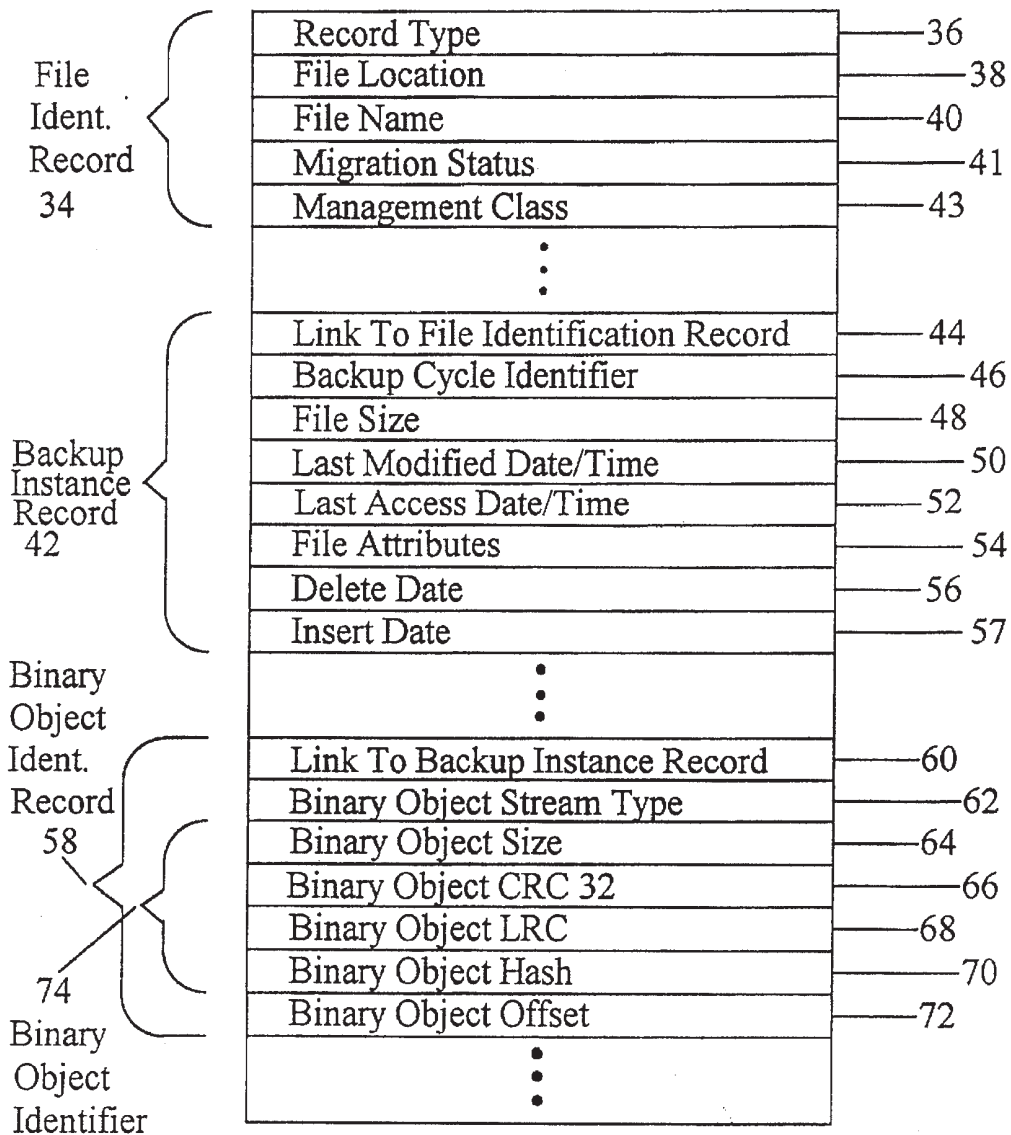


FIG. 3

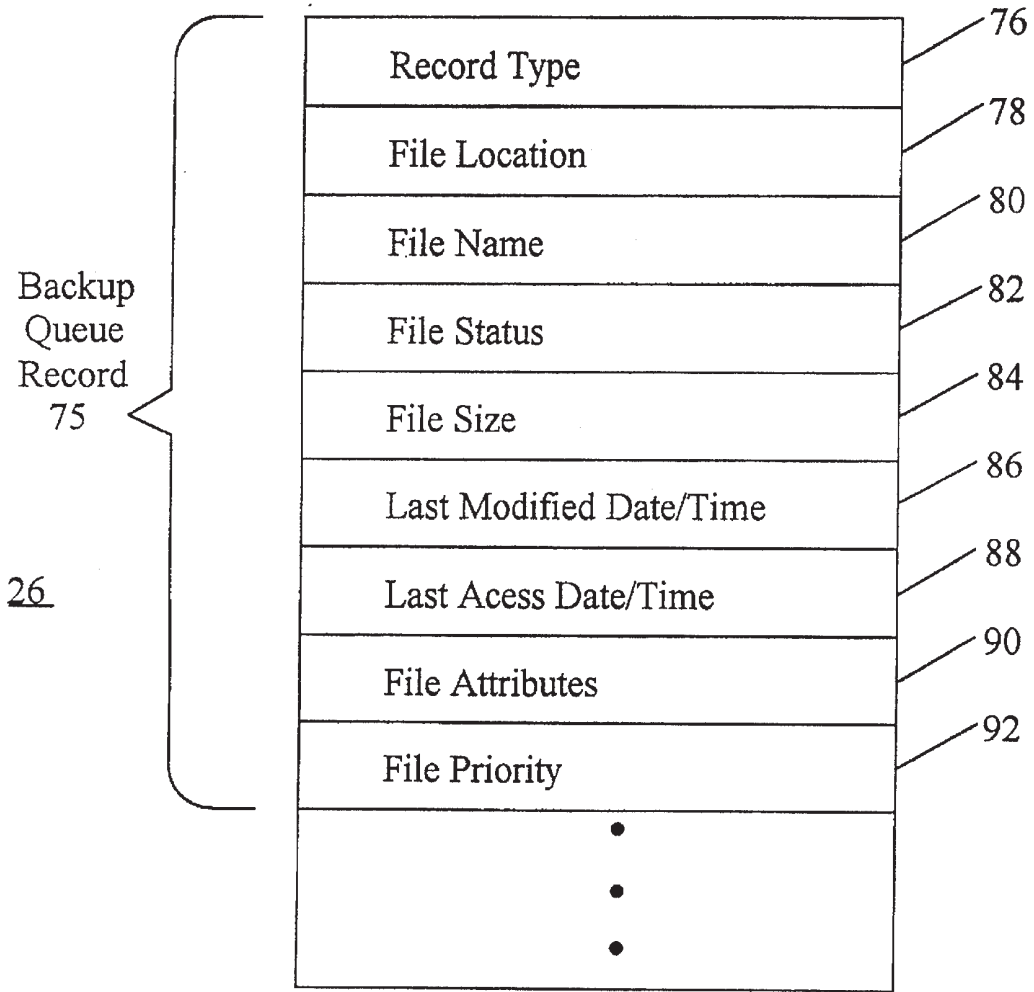


FIG. 4

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.