

United States Patent [19]

Davis et al.

[11] **Patent Number:** **5,969,716**[45] **Date of Patent:** **Oct. 19, 1999**[54] **TIME-BASED MEDIA PROCESSING SYSTEM**[75] Inventors: **Marc Davis**, San Francisco; **David Levitt**, Palo Alto, both of Calif.[73] Assignee: **Interval Research Corporation**, Calif.[21] Appl. No.: **08/693,004**[22] Filed: **Aug. 6, 1996**[51] **Int. Cl.**⁶ **G06F 17/00**; G06F 3/00; G11B 27/10[52] **U.S. Cl.** **345/328**; 345/302; 345/967; 386/102; 386/55[58] **Field of Search** 345/328, 302, 345/327, 967, 349, 356; 386/4, 52, 55, 102; 707/104[56] **References Cited****U.S. PATENT DOCUMENTS**

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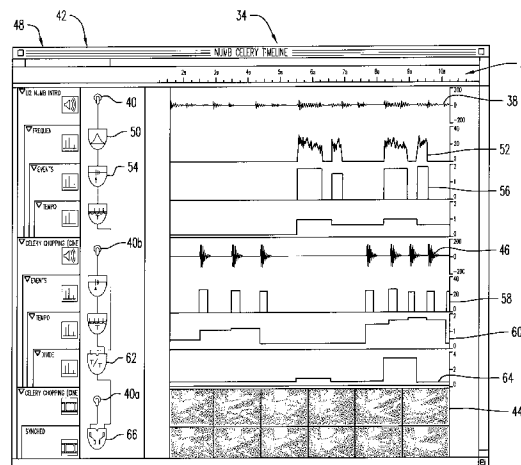
Primary Examiner—Raymond J. Bayerl

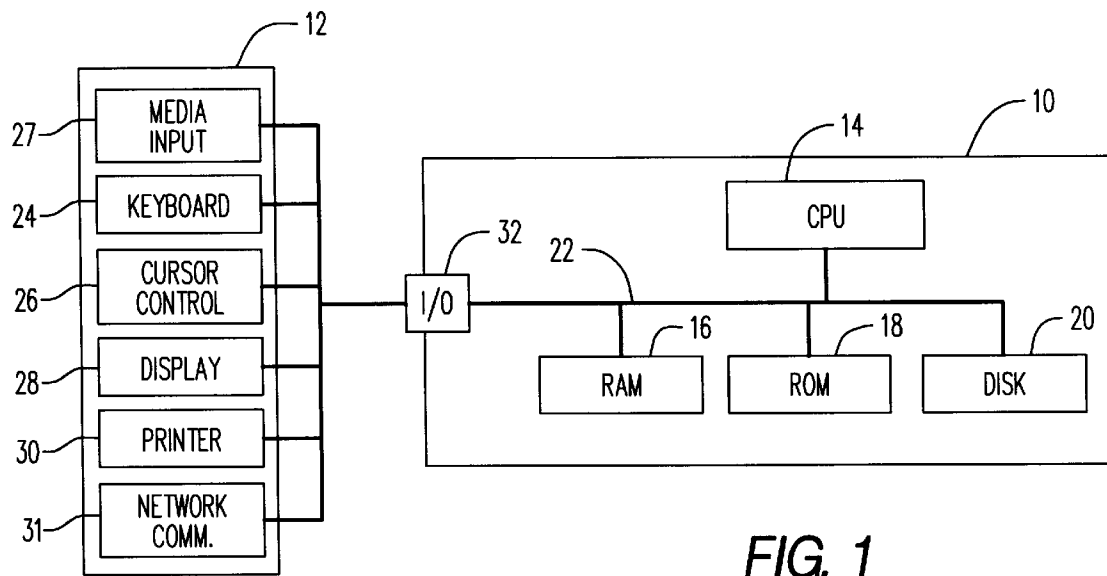
Attorney, Agent, or Firm—Burns, Doane, Swecker & Mathis, L.L.P.

[57]

ABSTRACT

Existing media signals are processed to create new media content by defining content representations for the existing media and establishing functional dependencies between the representations. The content representations constitute different data types which determine the kinds of operations that can be performed and dependencies that can be established. Among the types of transformation that can be achieved are synchronization, substitution resequencing temporal compression and dilation, and the creation of parametric special effects. The content representations and their functional dependencies are combined to construct a functional dependency network which causes the desired transformations to occur on input media signals. The inputs to the functional dependency network are parametrically specified by media data types to construct a template that can be used to create adaptive media productions.

17 Claims, 8 Drawing Sheets**Akamai Ex. 1009**

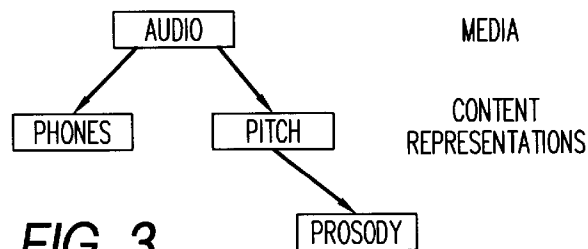


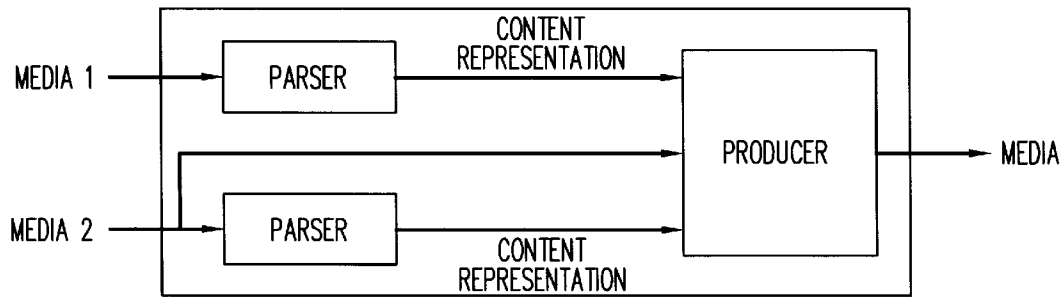
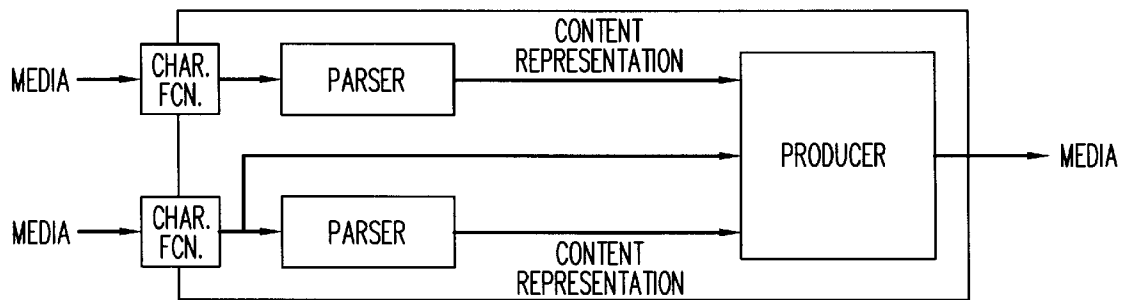
MEDIA → [PARSER] → CR FIG. 2A

CR → [PARSER] → CR FIG. 2B

CR → [PRODUCER] → MEDIA FIG. 2C

MEDIA → [PRODUCER] → MEDIA FIG. 2D



*FIG. 4**FIG. 5*

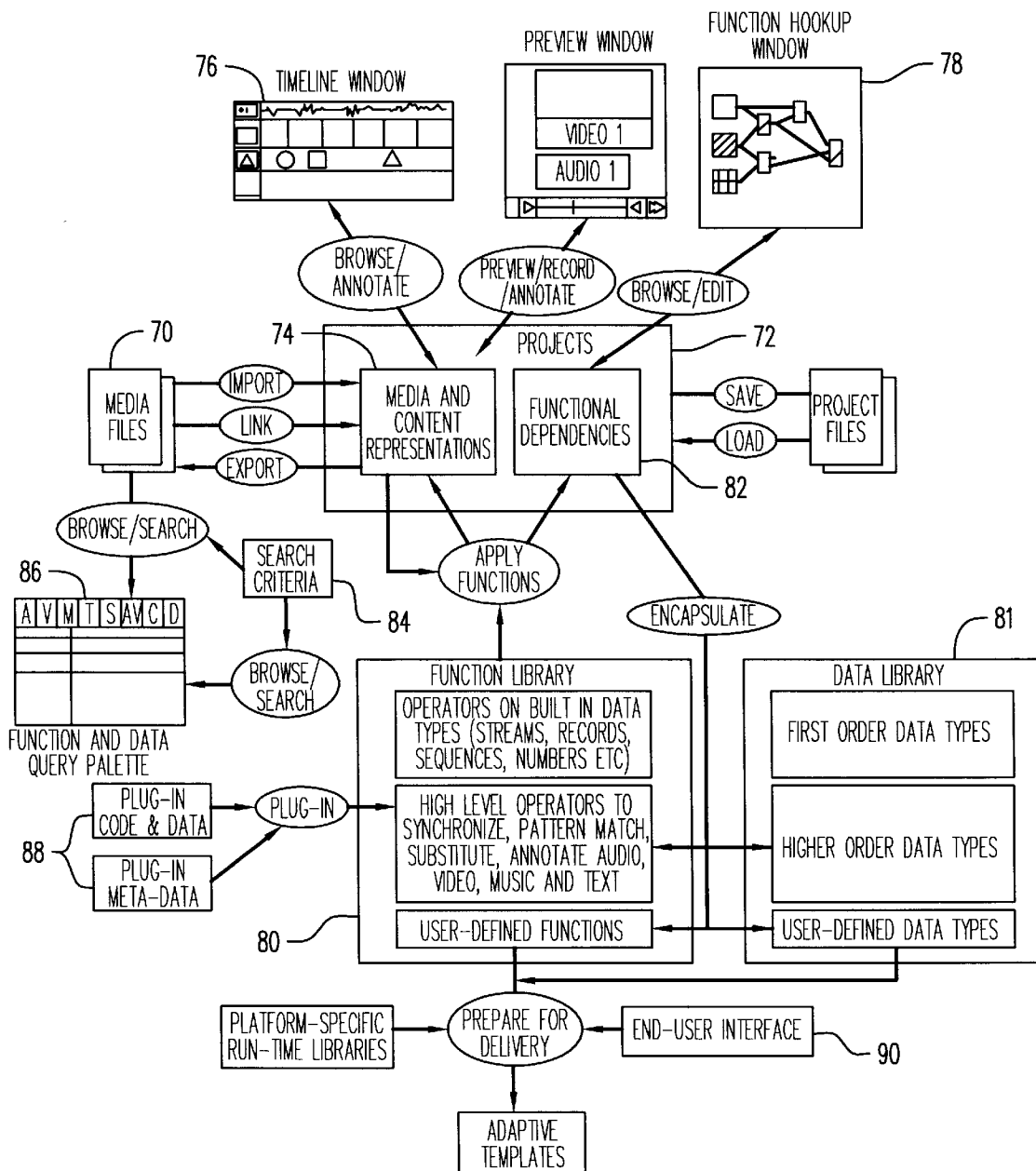
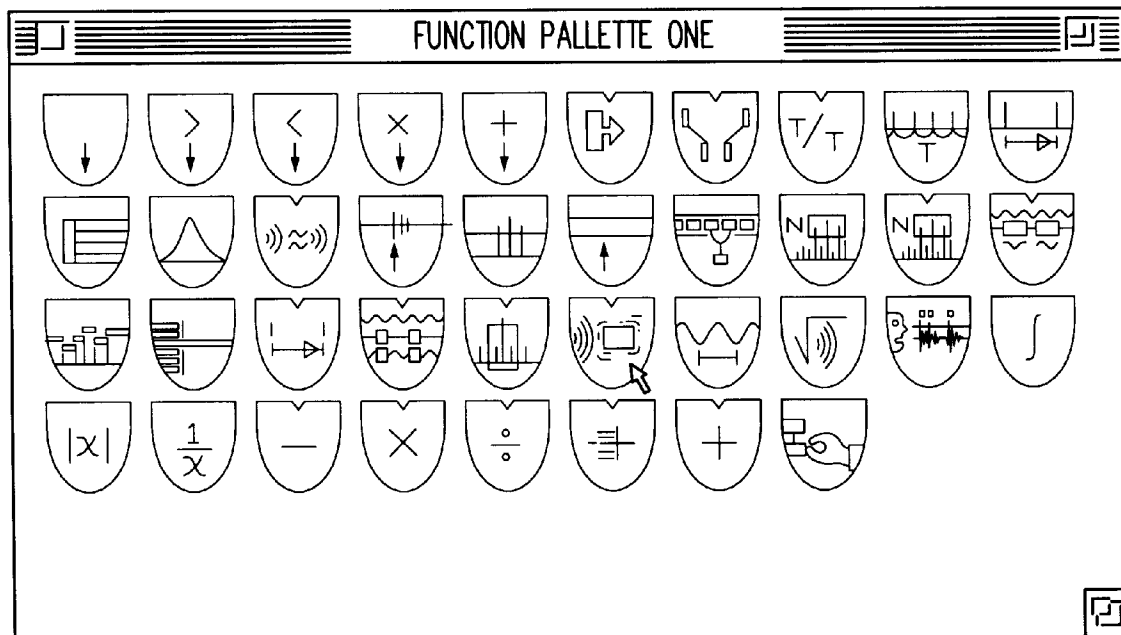


FIG. 6

*FIG. 7*



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