



US005375068A

United States Patent [19][11] **Patent Number:** 5,375,068**Palmer et al.**[45] **Date of Patent:** Dec. 20, 1994[54] **VIDEO TELECONFERENCING FOR NETWORKED WORKSTATIONS**[75] **Inventors:** Ricky S. Palmer; Larry G. Palmer, both of Nashua, N.H.[73] **Assignee:** Digital Equipment Corporation, Maynard, Mass.[21] **Appl. No.:** 893,074[22] **Filed:** Jun. 3, 1992[51] **Int. Cl.⁵** G06K 15/00[52] **U.S. Cl.** 364/514; 370/62[58] **Field of Search** 364/514; 379/96, 94, 379/202; 370/60, 62; 395/152[56] **References Cited****U.S. PATENT DOCUMENTS**

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workstation. The master process of a local workstation causes execution of a slave process on a remote workstation for receiving video teleconference data from the local workstation. An audio data transmitter for sends

an audio data stream to the remote workstation such that the audio data can be reconstructed into a continuous audio signal. A video transmitter sends video data so that each frame of video data to be sent is inserted into the audio data stream without affecting the continuity of the reconstructed audio signal at the remote workstation.

46 Claims, 28 Drawing Sheets

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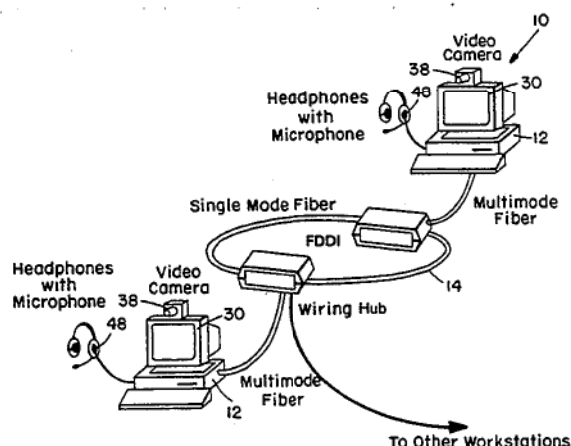
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Assistant Examiner—Thomas Peeso

Attorney, Agent, or Firm—Hamilton, Brook, Smith & Reynolds

[57] **ABSTRACT**

A video teleconferencing method and apparatus for computer workstations connected by a digital data network includes a transmission source portion for a local workstation to send audio and video teleconference data across the network to one or more remote workstations, and, a receiver for the local workstation to receive audio and video teleconference data back from the remote workstations. The local workstation sends teleconference data to each of the remote workstations over a variable bandwidth digital data connection, and each of the remote workstations returns teleconference data back to the local workstation over another variable bandwidth digital data connection. The transmission source portion includes a master software process executing on the local workstation, and the receiver includes a slave software process executing the remote



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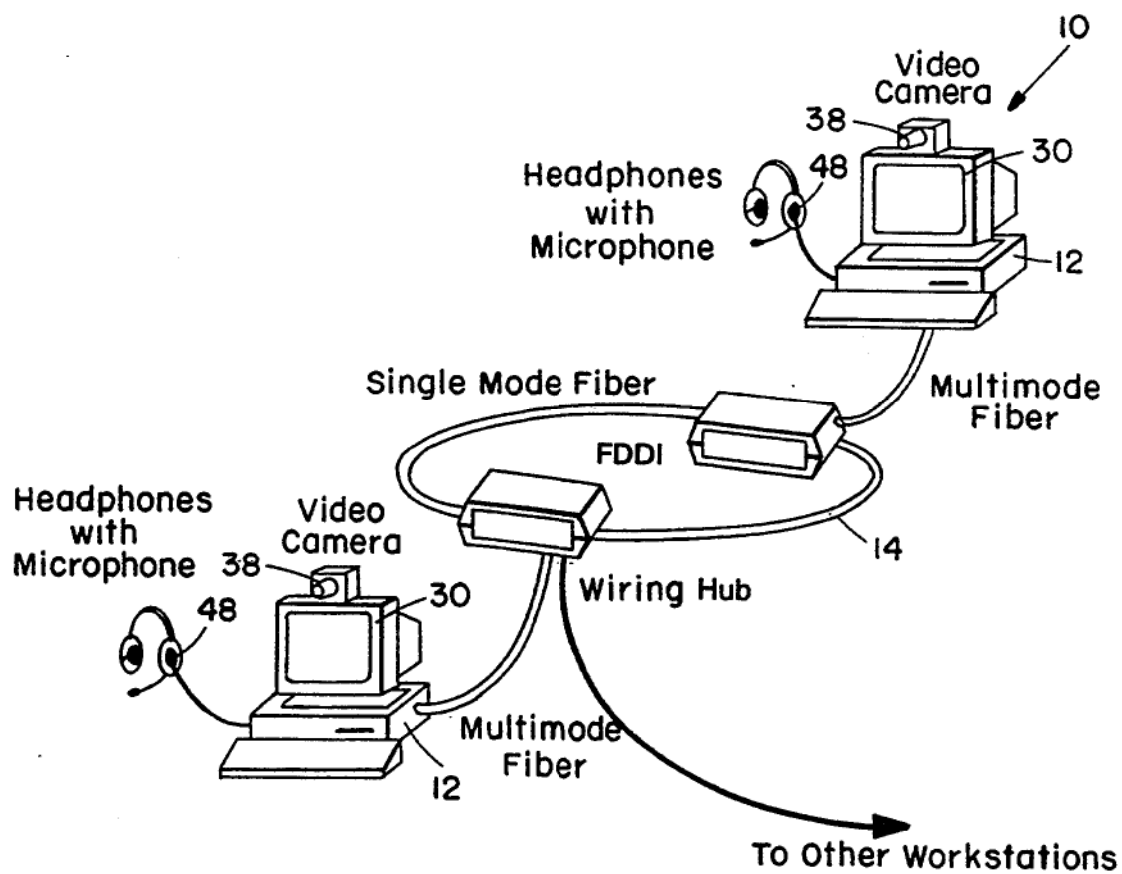


FIG. 1

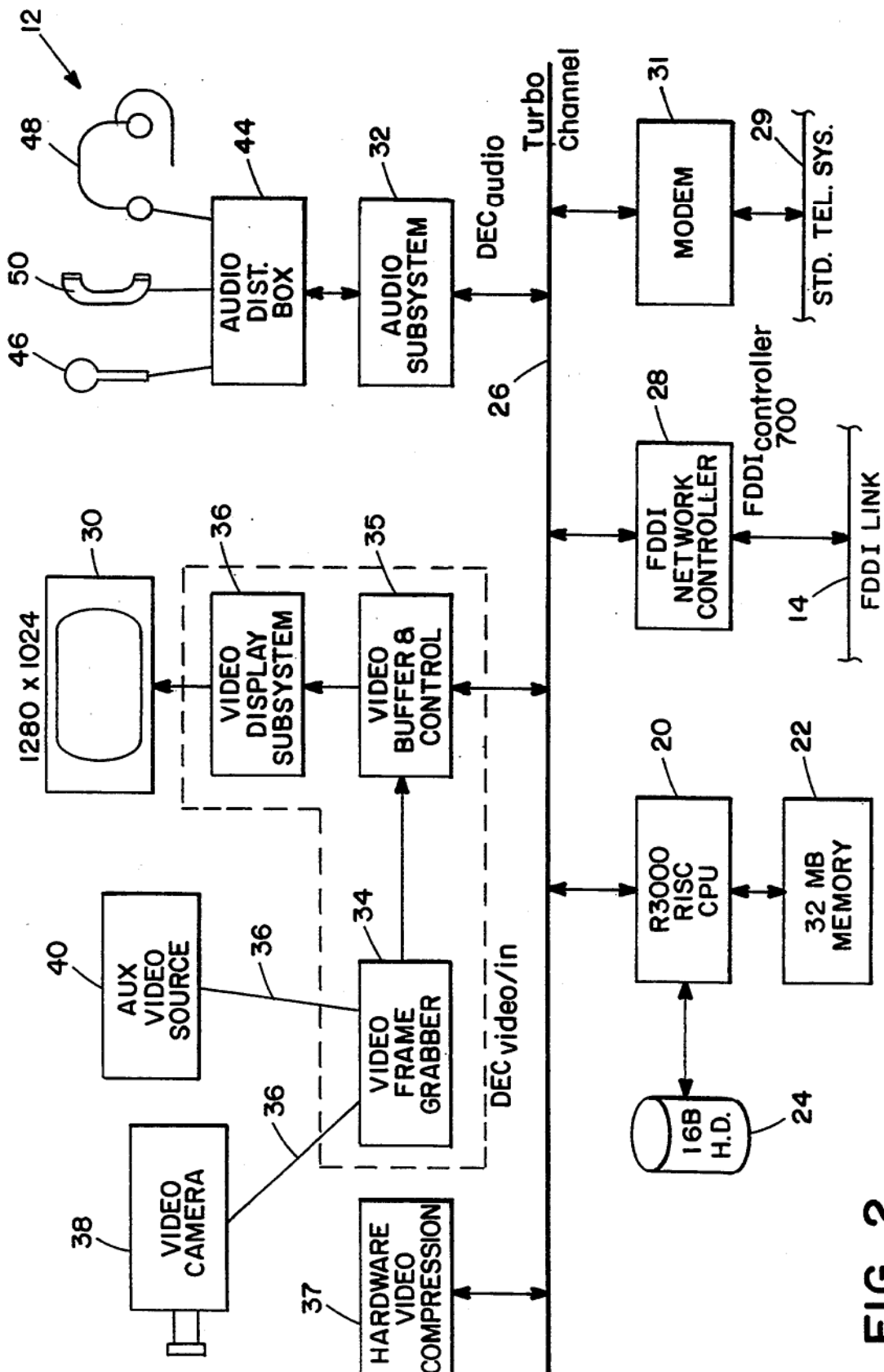


FIG. 2

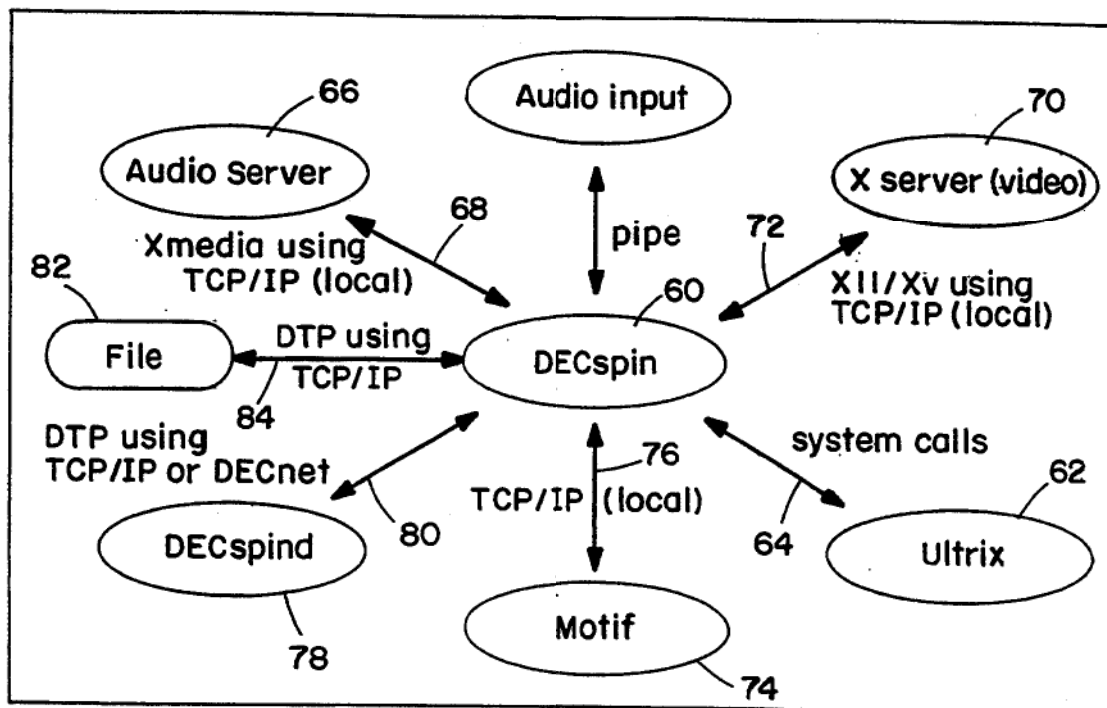


FIG. 3

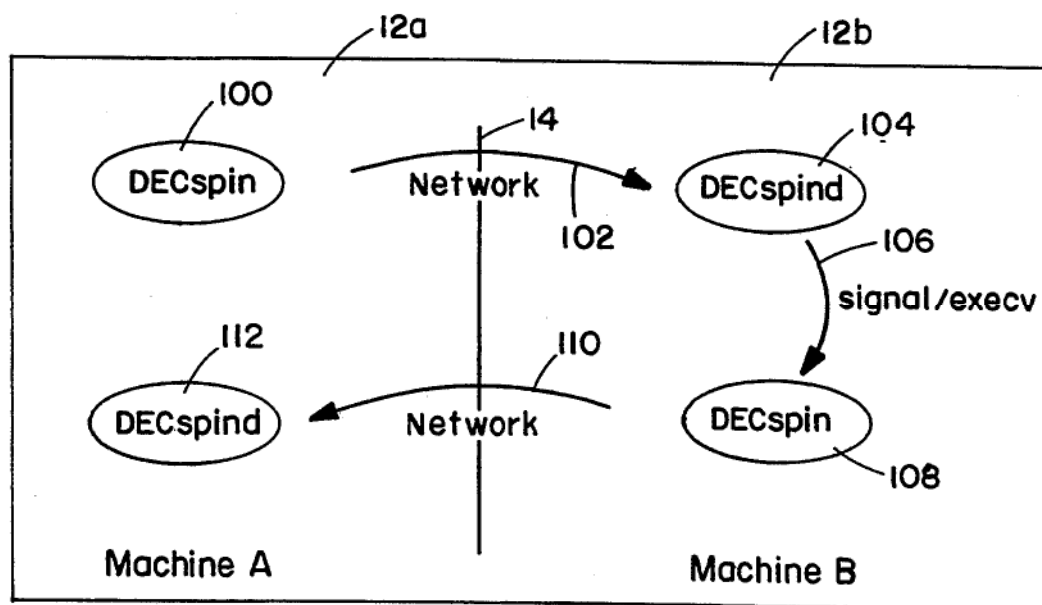


FIG. 4

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