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United States Patent [19]

Barracrough et al.

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[54] **AUDIO CONFERENCEING SYSTEM**

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[73] Assignee: **IBM Corporation**, Armonk, N.Y.

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[21] Appl. No.: **346,553**

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Assistant Examiner—Ricky Q. Ngo

[22] Filed: **Nov. 29, 1994**

Attorney, Agent, or Firm—Jeanine S. Ray-Yarletts

[30] Foreign Application Priority Data

Dec. 18, 1993 [GB] United Kingdom 9325924

[51] **Int. Cl.⁶** **H04Q 11/04**

[52] **U.S. Cl.** **370/62; 370/110.1; 379/202; 348/15**

[58] **Field of Search** 370/62, 58.1, 61, 370/112, 119, 110.1; 379/201, 202, 205, 88, 157, 158, 165, 203, 93, 94, 96; 348/14, 13, 15

[57] ABSTRACT

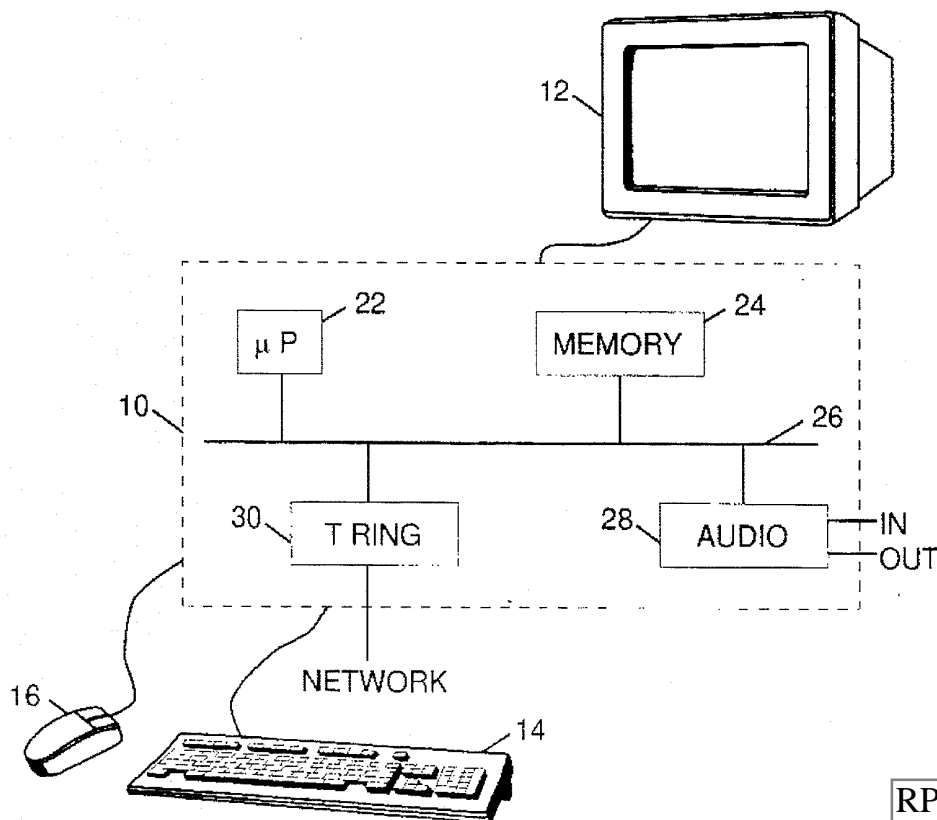
A computer workstation receives multiple audio input streams over a network in an audio conference. The audio input streams are kept separate by storing them in different queues. Digital samples from each of the queues are transferred to an audio adapter card **28** for output. A digital signal processor **46** on the audio adapter card multiplies each audio stream by its own weighting parameter, before summing the audio streams together for output. Thus the relative volume of each of the audio output streams can be controlled. For each block of audio data, the volume is calculated and displayed to the user, allowing the user to see the volume in each audio input stream independently. The user is also provided with volume control for each audio input stream, which effectively adjusts the weighting parameter, thereby allowing the user to alter the relative volumes of each speaker in the conference.

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10 Claims, 4 Drawing Sheets



RPX Exhibit 1137
DPV v. DAE

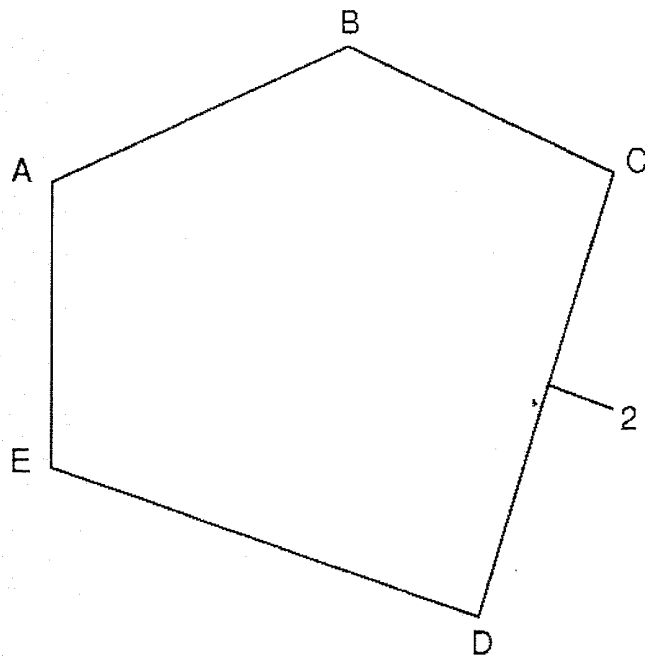


Figure 1

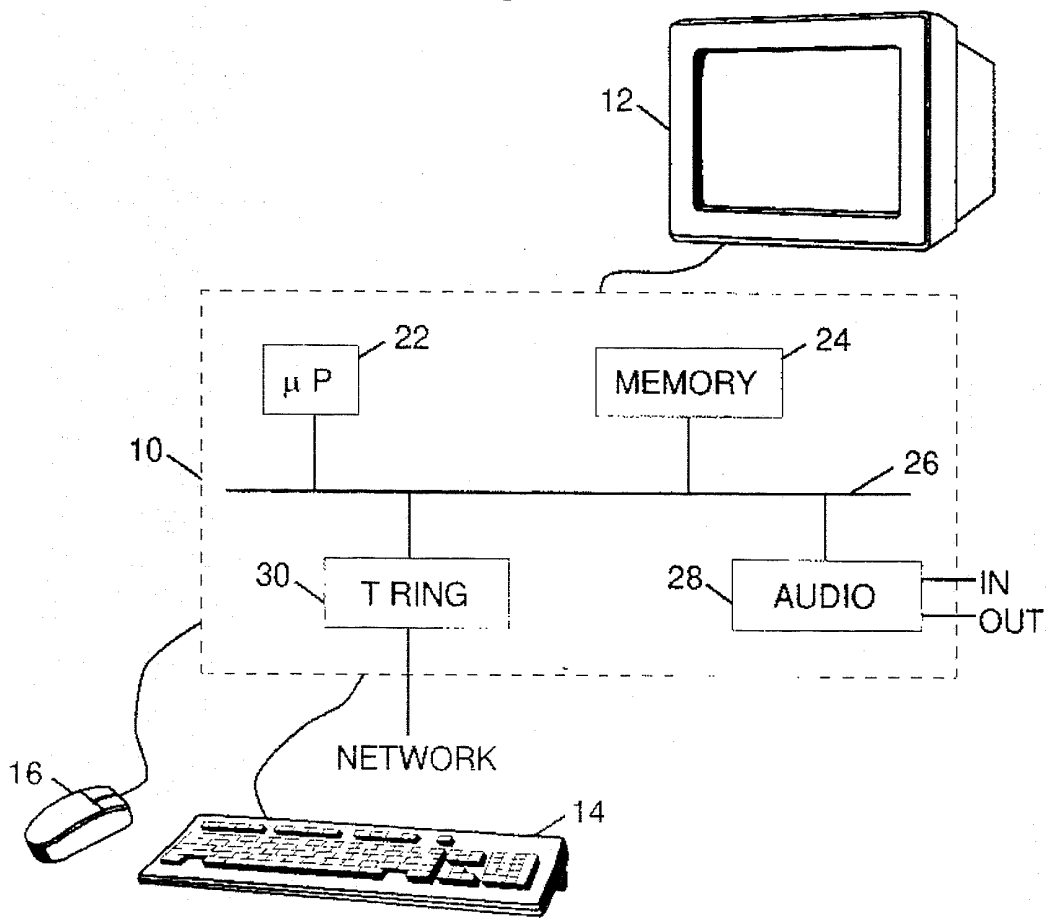


Figure 2

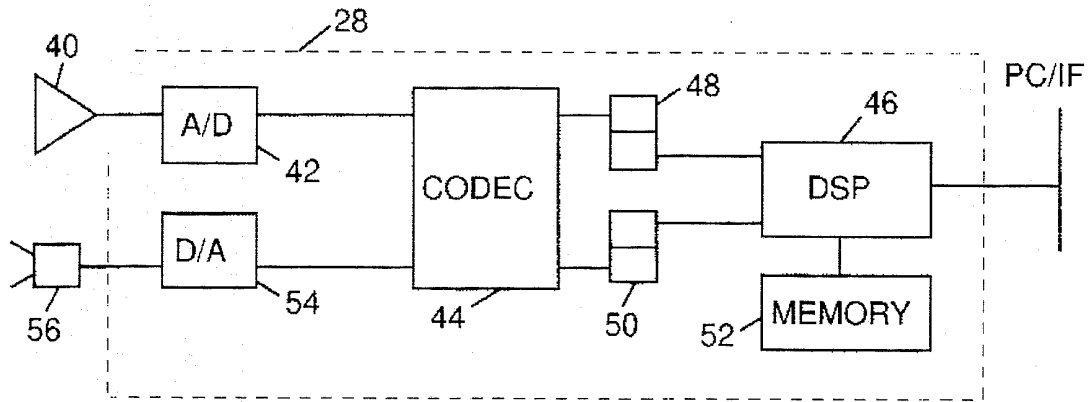


Figure 3

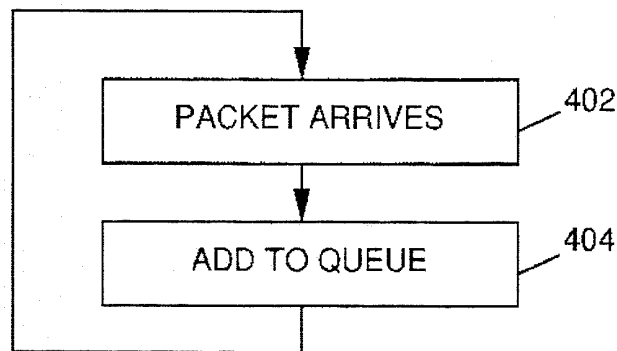


Figure 4

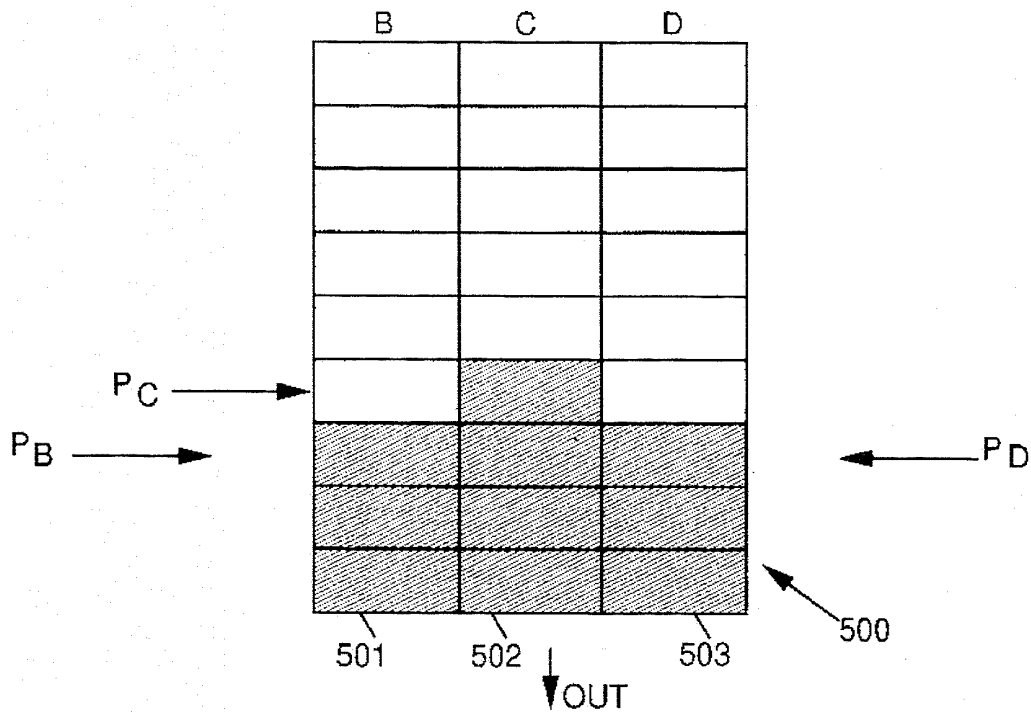


Figure 5

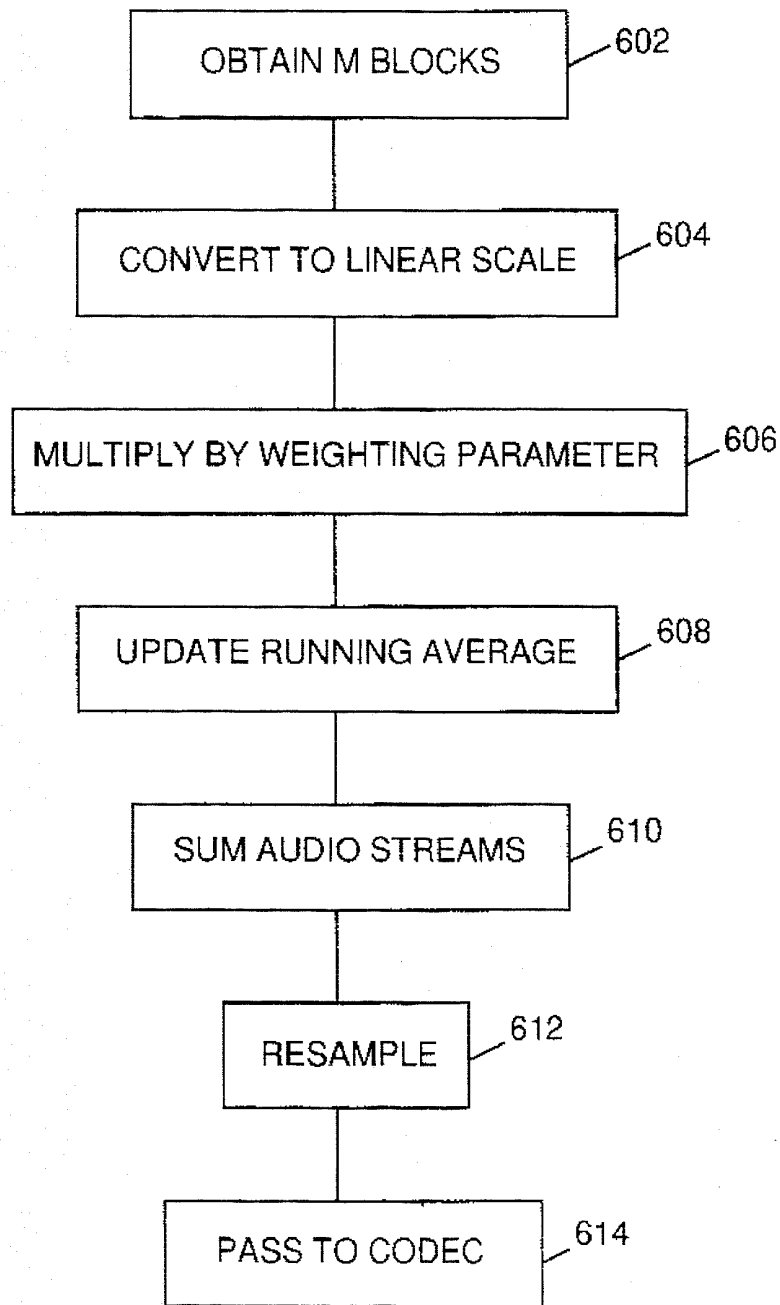


Figure 6

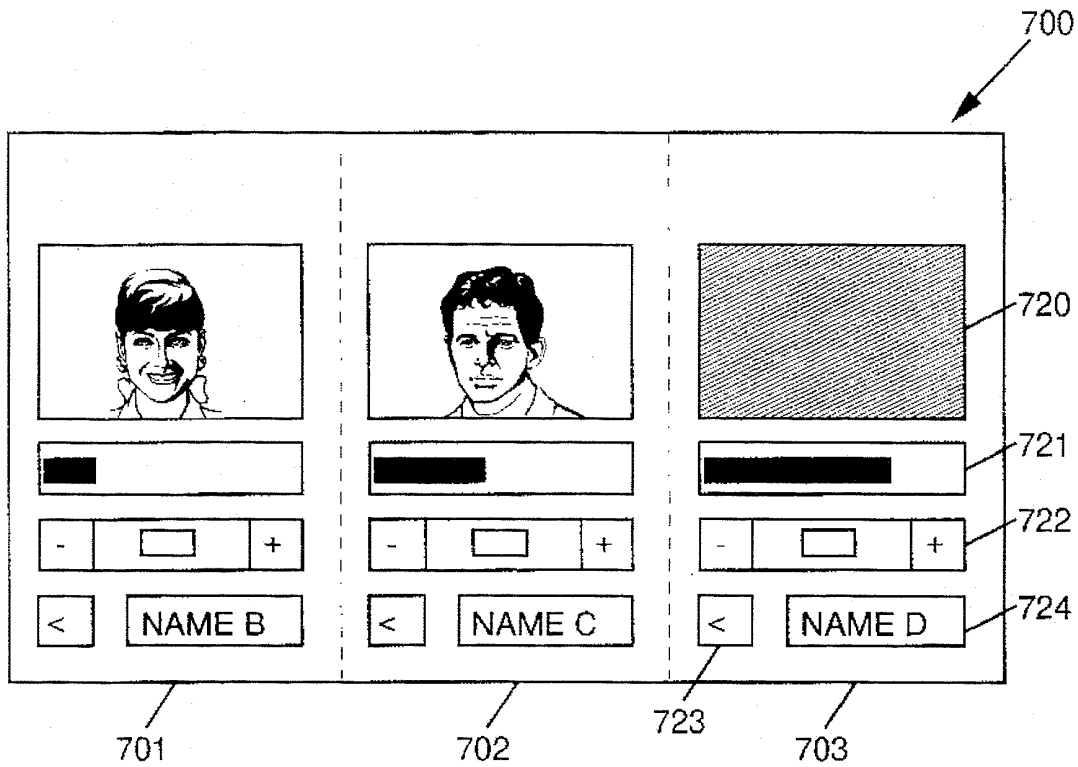


Figure 7

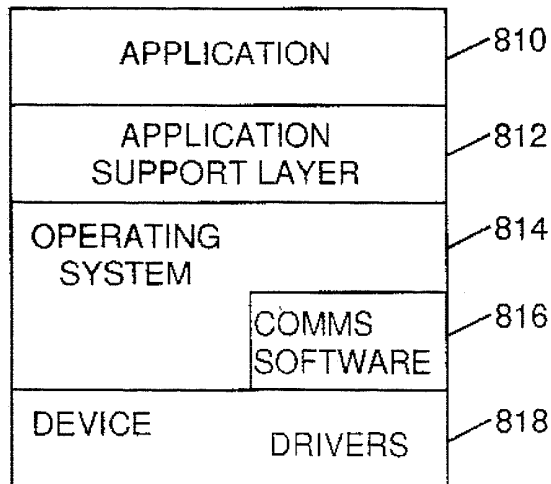


Figure 8

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