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**Koster et al.**

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(54) **SNOOPING-BASED CACHE-COHERENCE  
FILTER FOR A POINT-TO-POINT  
CONNECTED MULTIPROCESSING NODE**

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patent is extended or adjusted under 35  
U.S.C. 154(b) by 873 days.

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(51) **Int. Cl.**  
**G06F 12/00** (2006.01)

(52) **U.S. Cl.** ..... **711/146**; 711/144; 711/145;  
711/128; 711/119; 711/E12.032; 711/E12.042

(58) **Field of Classification Search** ..... 711/146  
See application file for complete search history.

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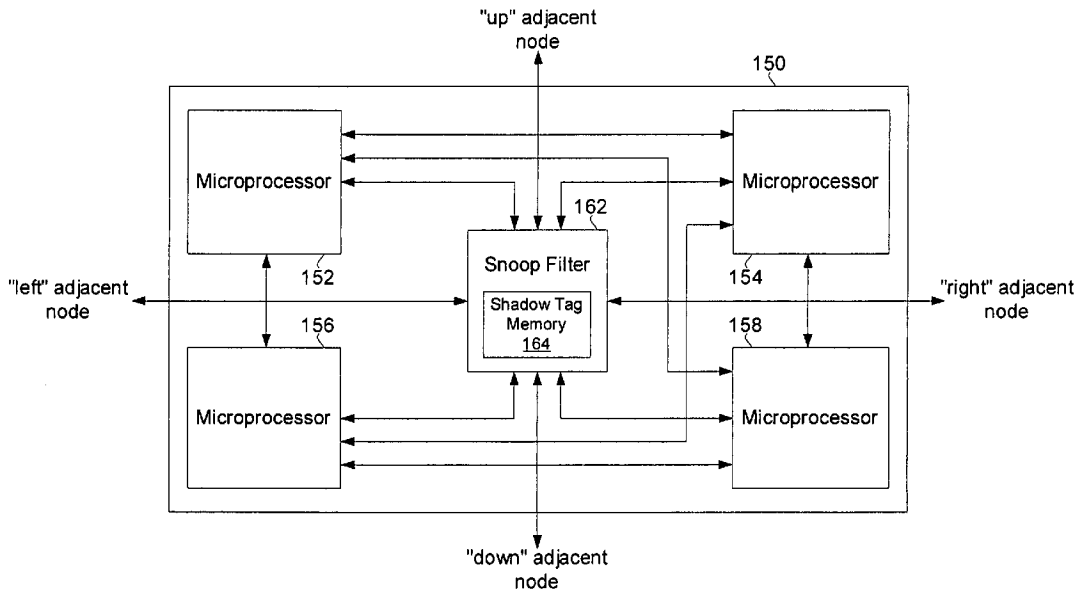
*Assistant Examiner*—Aracelis Ruiz

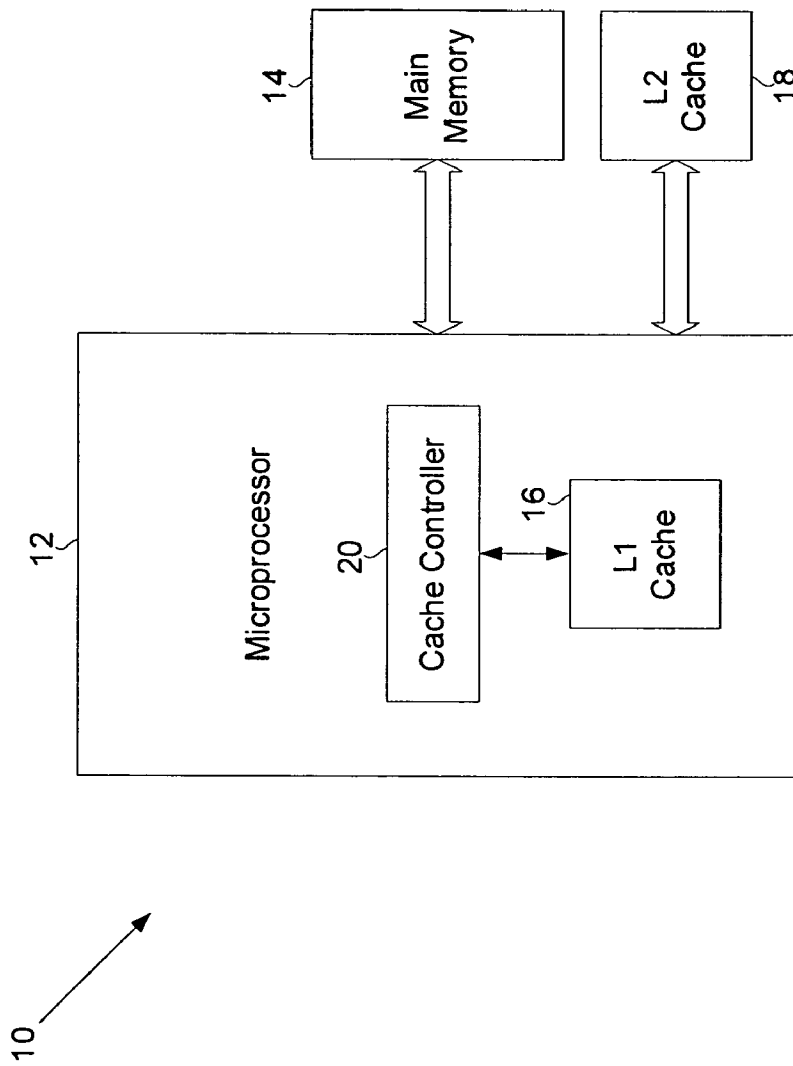
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(57) **ABSTRACT**

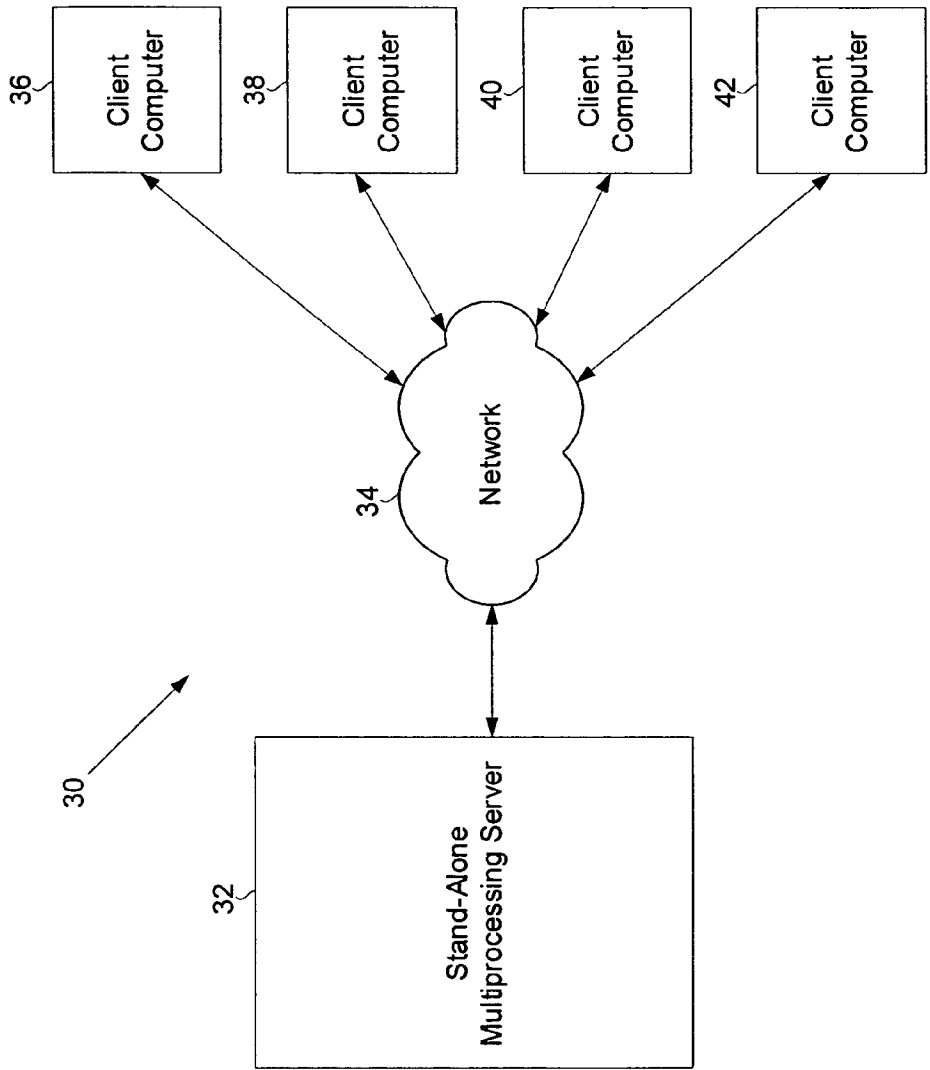
A multiprocessing node has a plurality of point-to-point connected microprocessors. Each of the microprocessors is also point-to-point connected to a filter. In response to a local cache miss, a microprocessor issues a broadcast for the requested data to the filter. The filter, using memory that stores a copy of the tags of data stored in the local cache memories of each of the microprocessors, relays the broadcast to those microprocessors having copies of the requested data. If the snoop filter memory indicates that none of the microprocessors have a copy of the requested data, the snoop filter may either (i) cancel the broadcast and issue a message back to the requesting microprocessor, or (ii) relay the broadcast to a connected multiprocessing node.

**15 Claims, 11 Drawing Sheets**

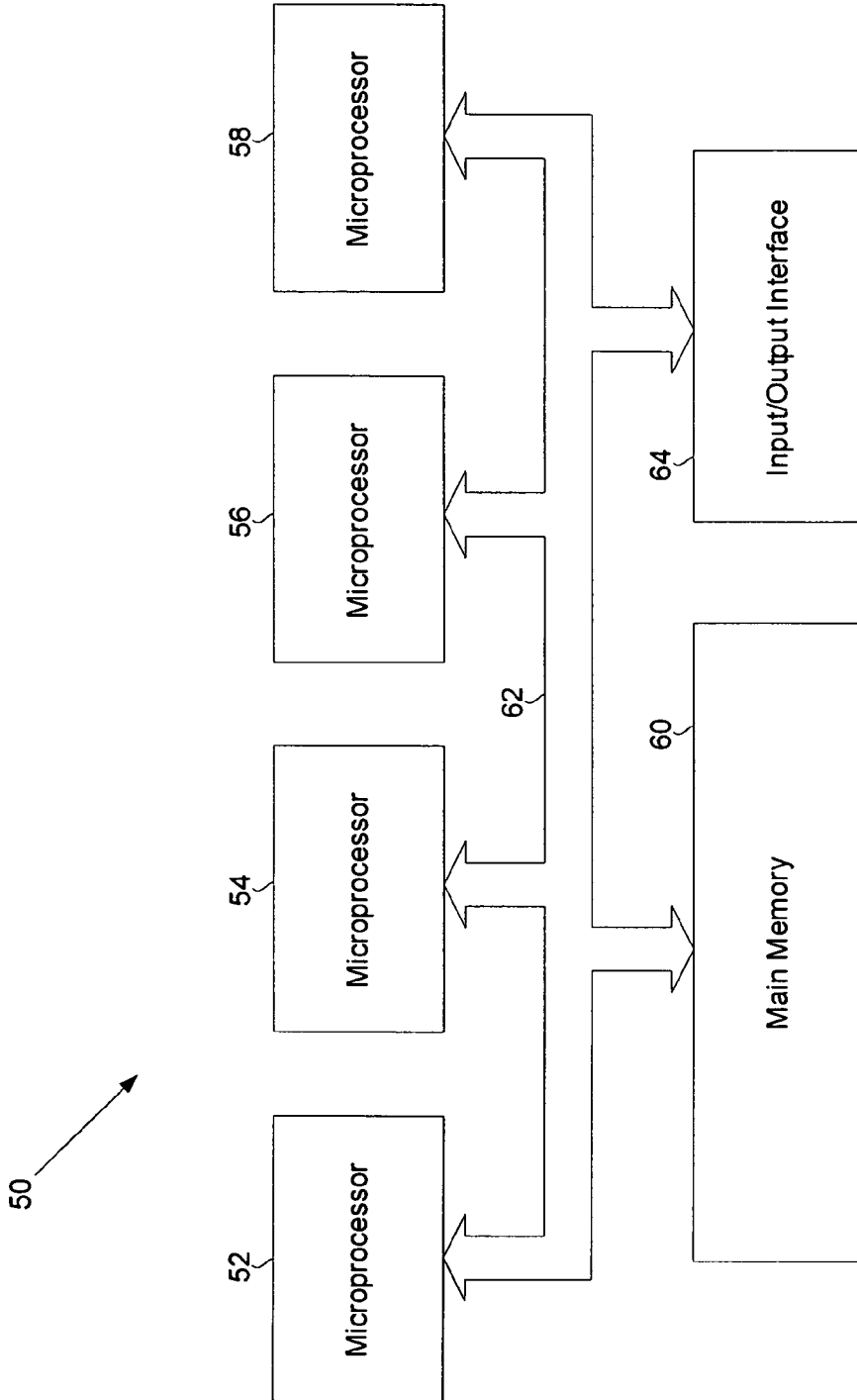




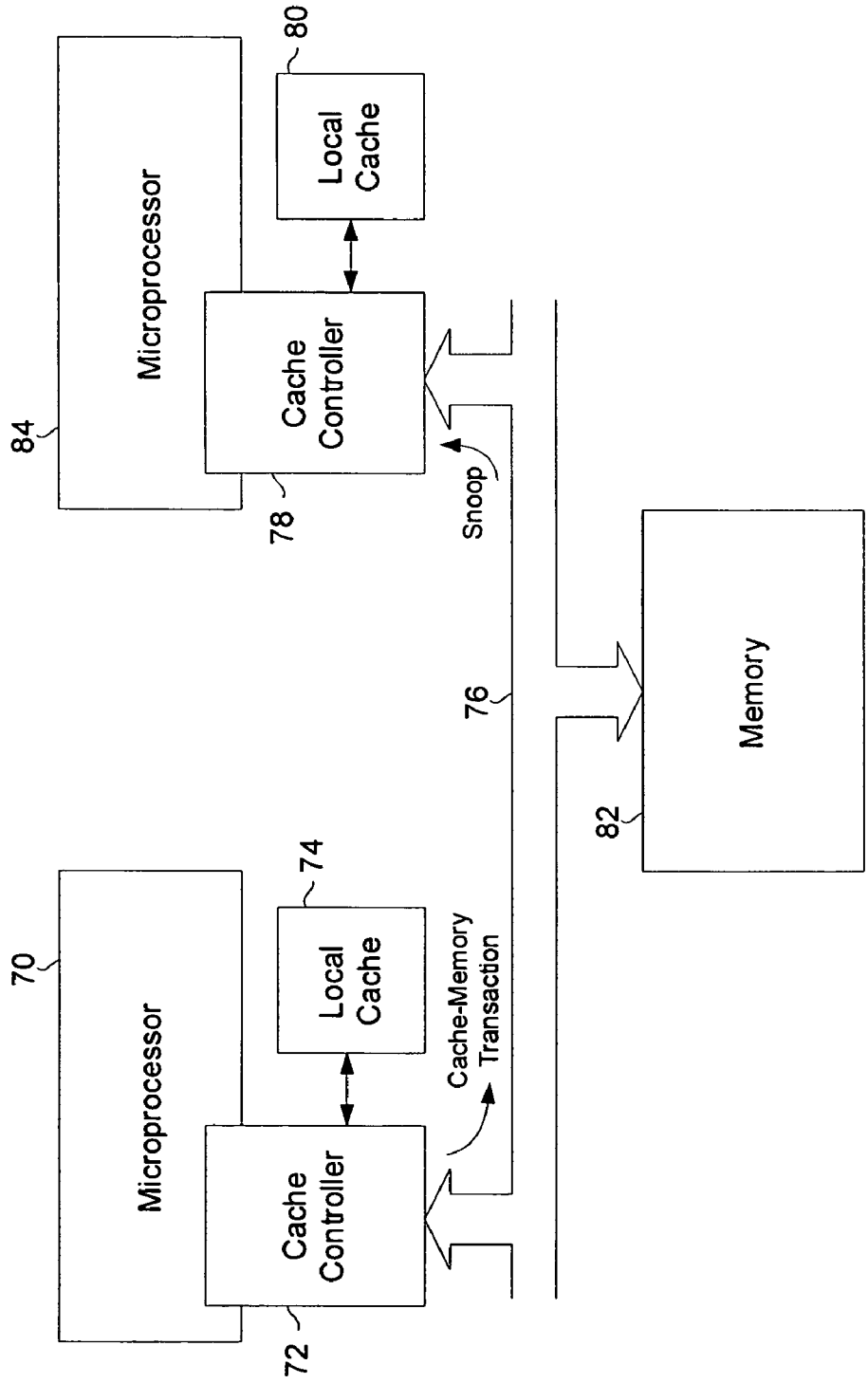
**FIG. 1**  
**(Prior Art)**



**FIG. 2**  
**(Prior Art)**



**FIG. 3**  
**(Prior Art)**



**FIG. 4**

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