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(12) **United States Patent**  
**Roever**

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(54) **SELF-SYNCHRONIZING DATA STREAMING BETWEEN ADDRESS-BASED PRODUCER AND CONSUMER CIRCUITS**

(58) **Field of Classification Search**  
USPC ..... 710/29, 58, 60, 61, 100, 306, 308, 710/310; 713/375, 400, 401  
See application file for complete search history.

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 748 days.

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(51) **Int. Cl.**  
**G06F 13/00** (2006.01)  
**G06F 3/00** (2006.01)  
**G06F 5/00** (2006.01)  
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**G06F 1/04** (2006.01)  
**G06F 1/12** (2006.01)  
**G06F 15/16** (2006.01)  
**G06F 13/42** (2006.01)  
**H04L 5/00** (2006.01)  
**H04L 7/00** (2006.01)

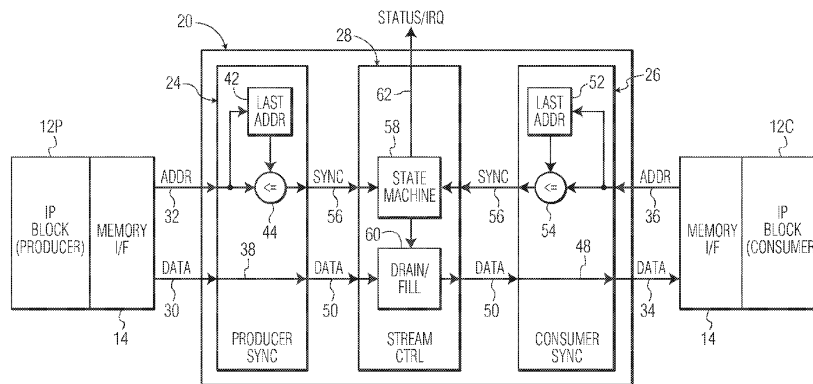
(52) **U.S. Cl.**  
USPC ..... **710/100**; 710/29; 710/58; 710/60;  
710/61; 710/306; 710/308; 710/310; 713/375;  
713/400; 713/401

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(57) **ABSTRACT**

A circuit arrangement and method facilitate the direct streaming of data between producer and consumer circuits (12P, 12C) that are otherwise configured to communicate over an address-based network (18). Sync signals (46, 56) are generated for each of producer and consumer circuits (12P, 12C) from the address information encoded into requests that communicate the data streams output by the producer circuit (12P) and expected by the consumer circuit (12C). The sync signals (46, 56) for the producer and consumer circuits (12C) are then used to selectively modify the data stream output by the producer circuit (12P) to a format expected by the consumer circuit (12C). Typically, such modification takes the form of inserting data into the data stream when the consumer circuit (12C) expects more data than output by the producer circuit (12P), and discarding data communicated by the producer circuit (12P) when the consumer expects less data than that output by the producer circuit (12P).

**33 Claims, 7 Drawing Sheets**



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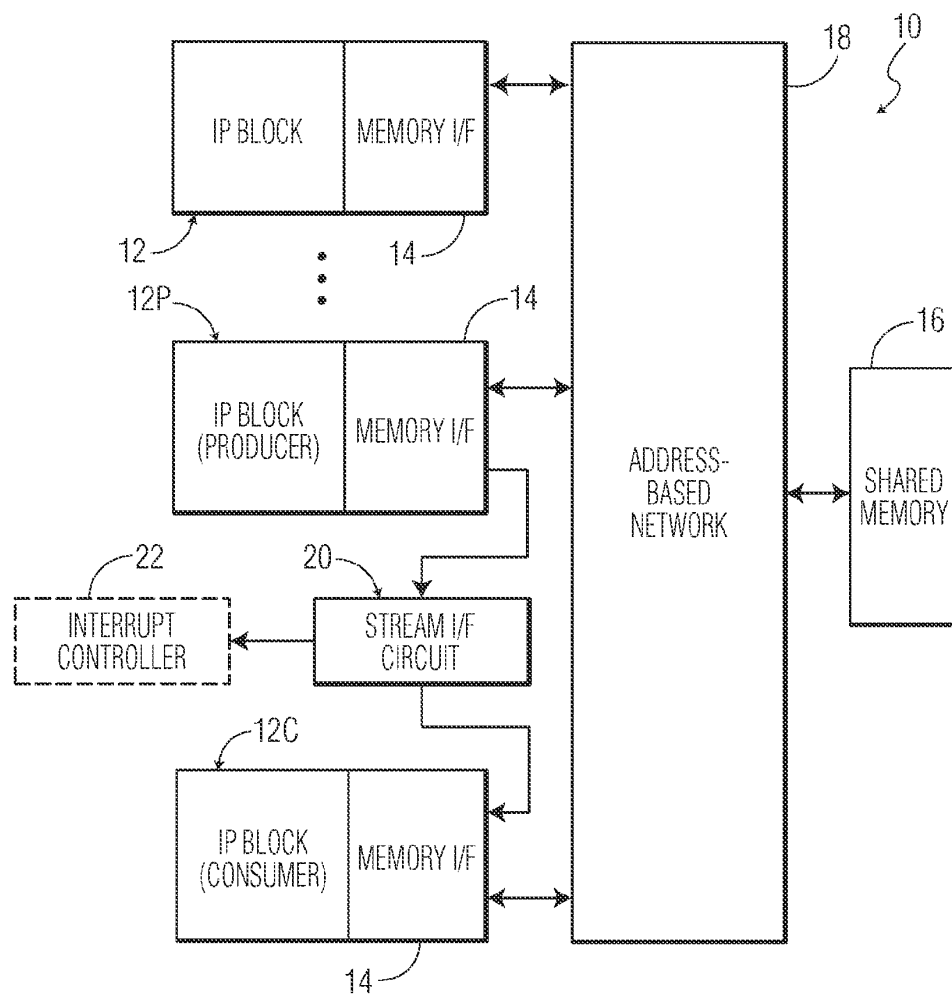


FIG. 1

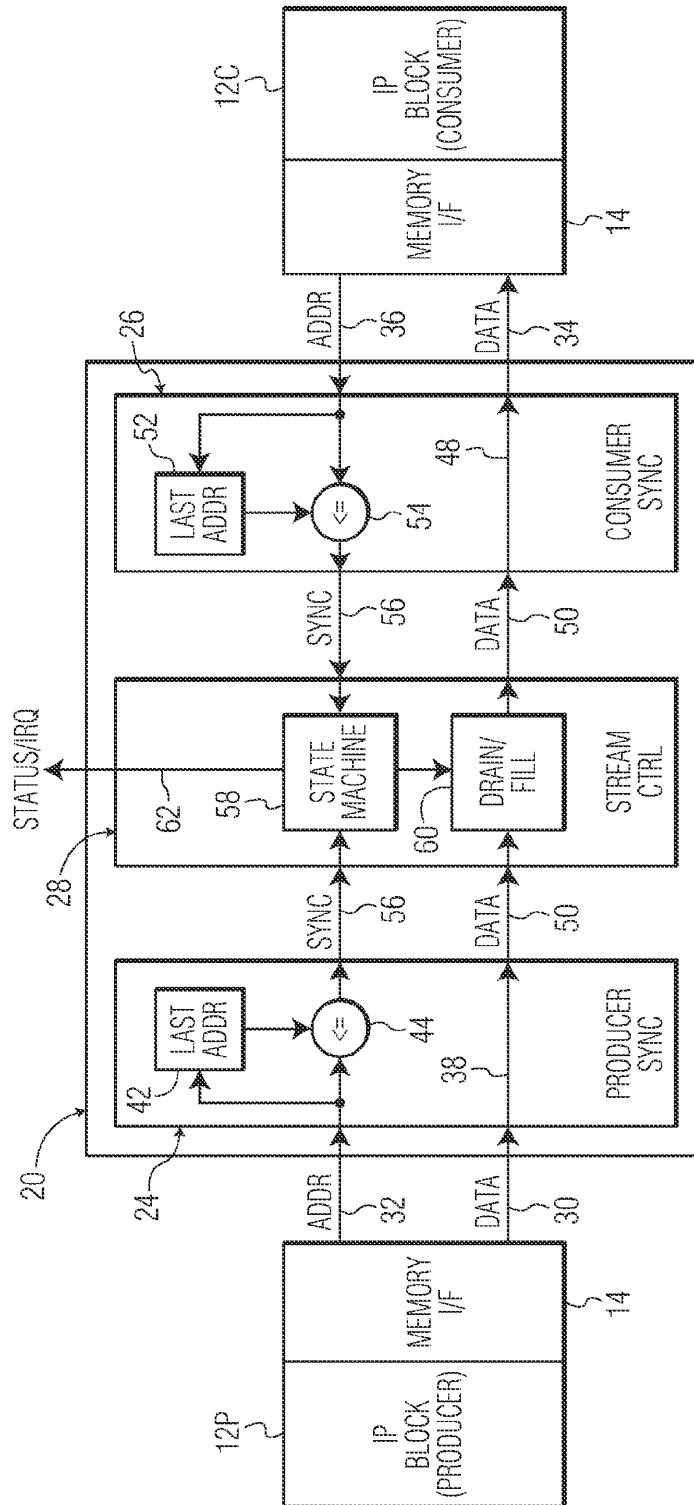


FIG. 2

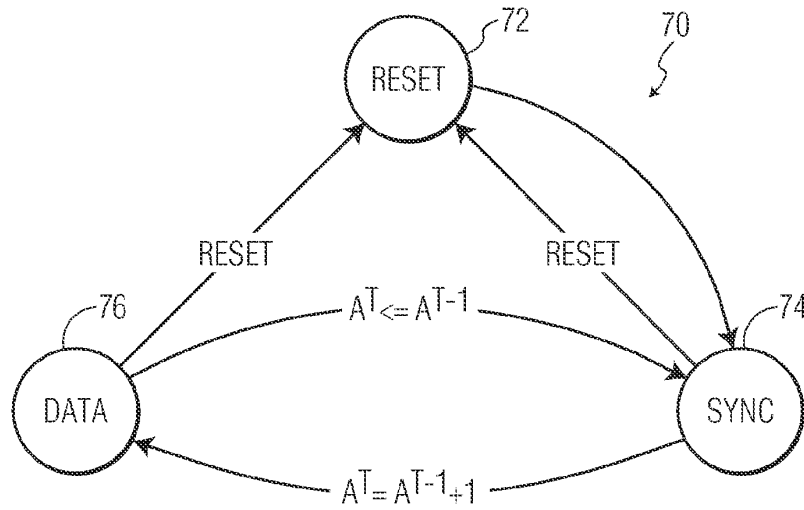


FIG. 3

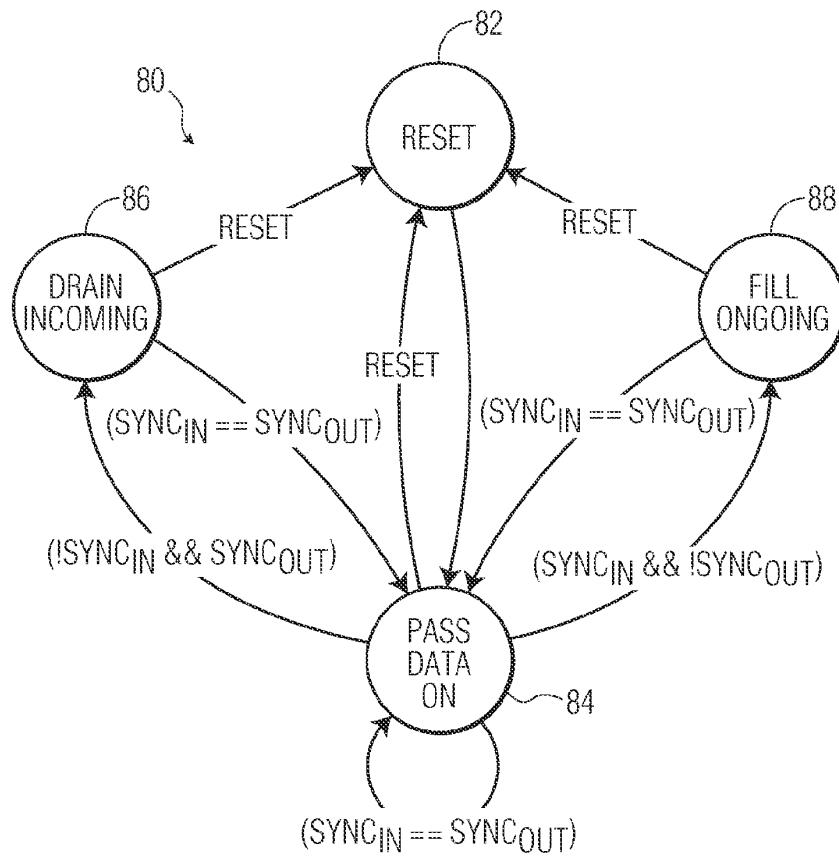


FIG. 4

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