

(12) **United States Patent**
Wong

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(54) **ENCRIPTION FOR A STREAM FILE IN AN
FPGA INTEGRATED CIRCUIT**

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U.S.C. 154(b) by 583 days.

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(52) **U.S. Cl.** **713/189**; 716/16; 716/17;
326/8; 326/38; 326/39; 713/191; 713/193

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326/8, 37-41, 4, 44; 380/44, 42, 37; 708/232,
708/626; 712/206; 713/191, 188, 189, 193
See application file for complete search history.

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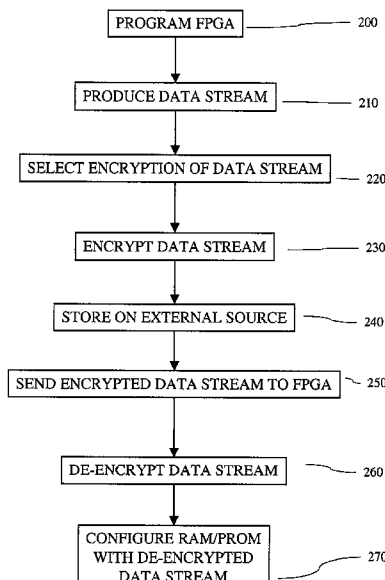
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(57) **ABSTRACT**

A system for encrypting and decrypting data in a data stream
for programming a Field Programmable Gate Array (FPGA).
The system allows for an enable bit to be set for a gap in the
data stream and the data is then encrypted from the beginning
of the gap. A gap being bits in said data stream that correspond
to unprogrammed addresses of a memory in the field pro-
grammable gate array. The data is then decrypted by the
FPGA when the bit stream is received and an enable bit is
detected in a gap of the data stream.

30 Claims, 4 Drawing Sheets



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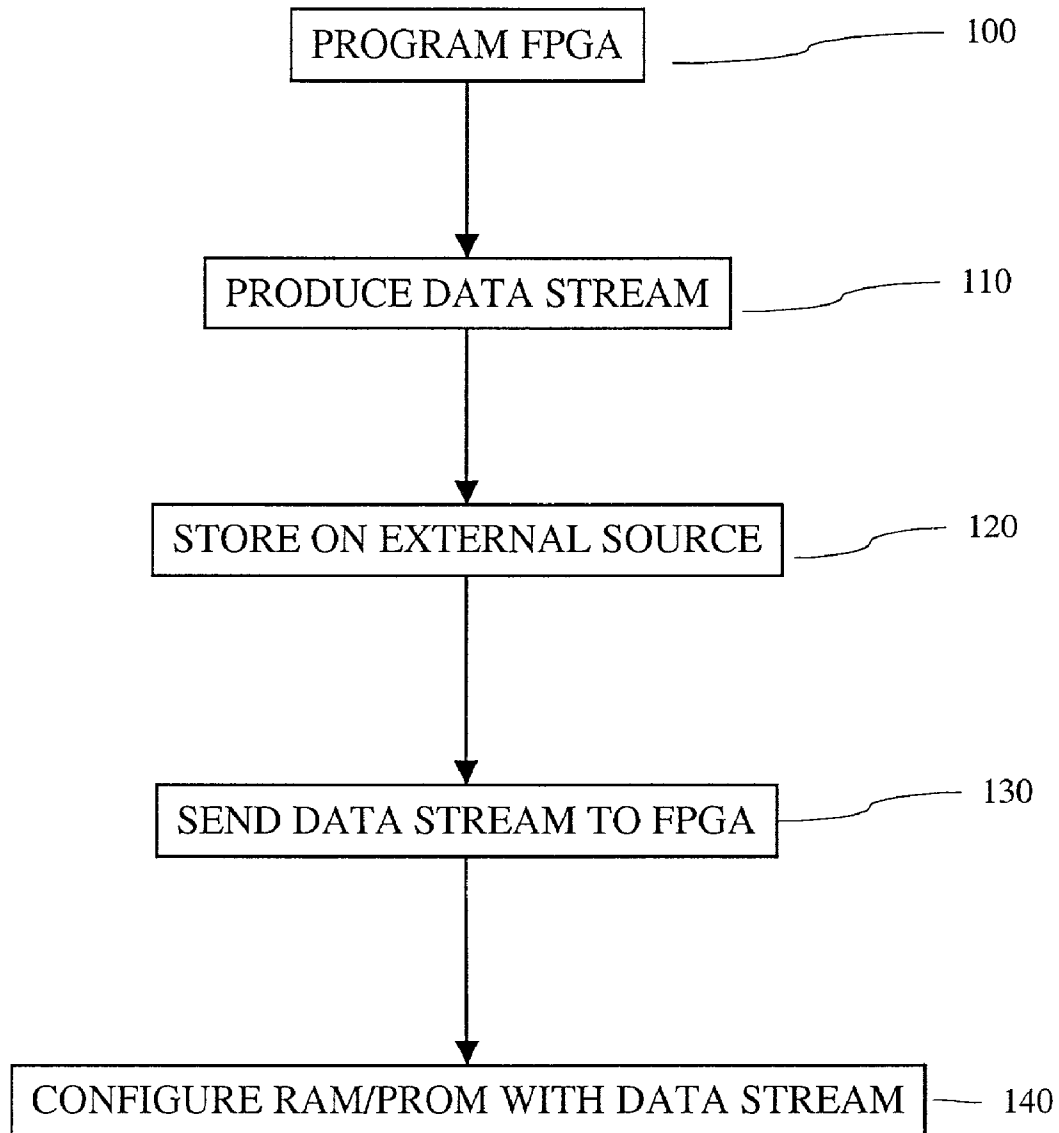
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PRIOR ART

FIG. 1

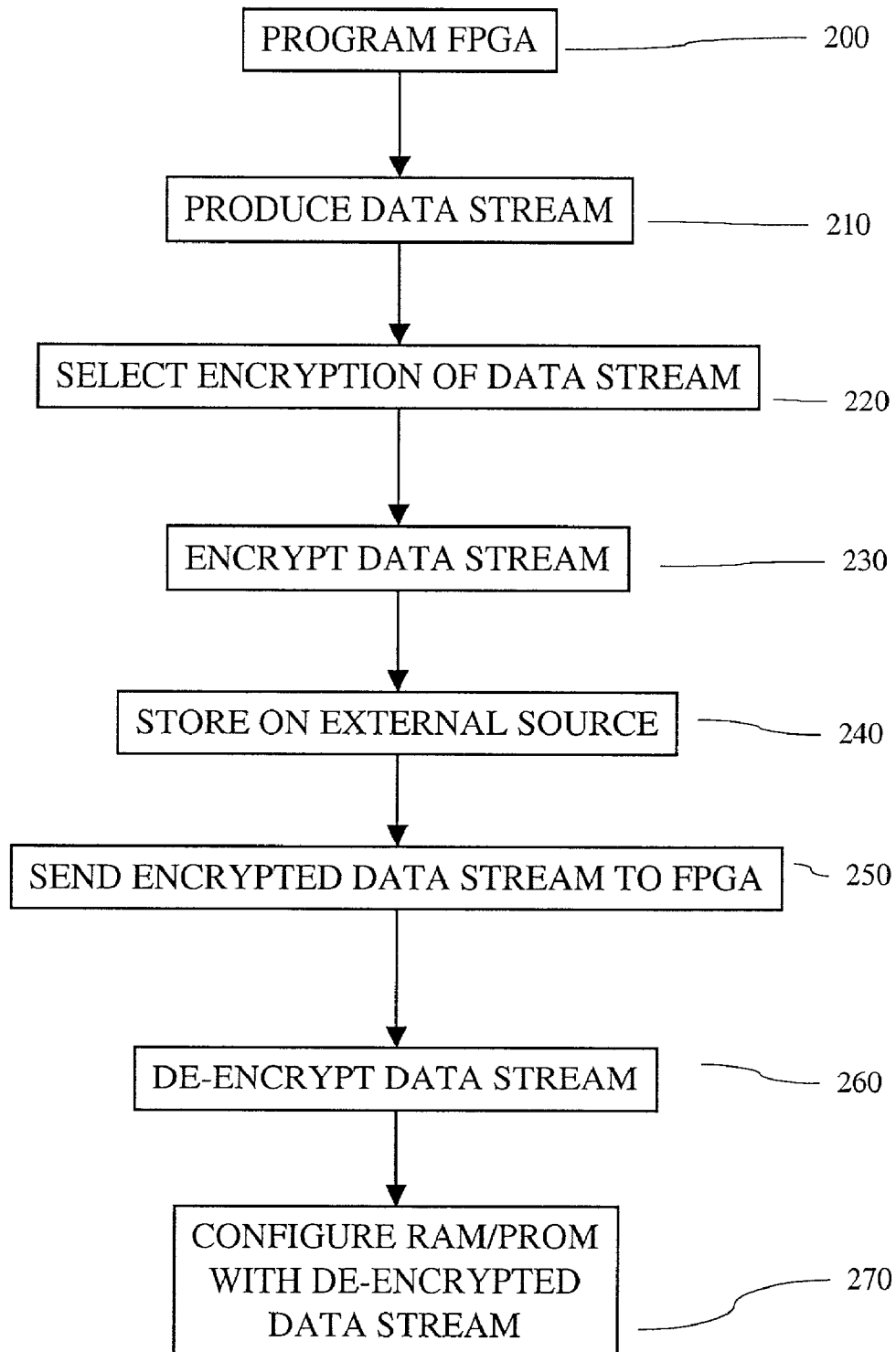


FIG. 2

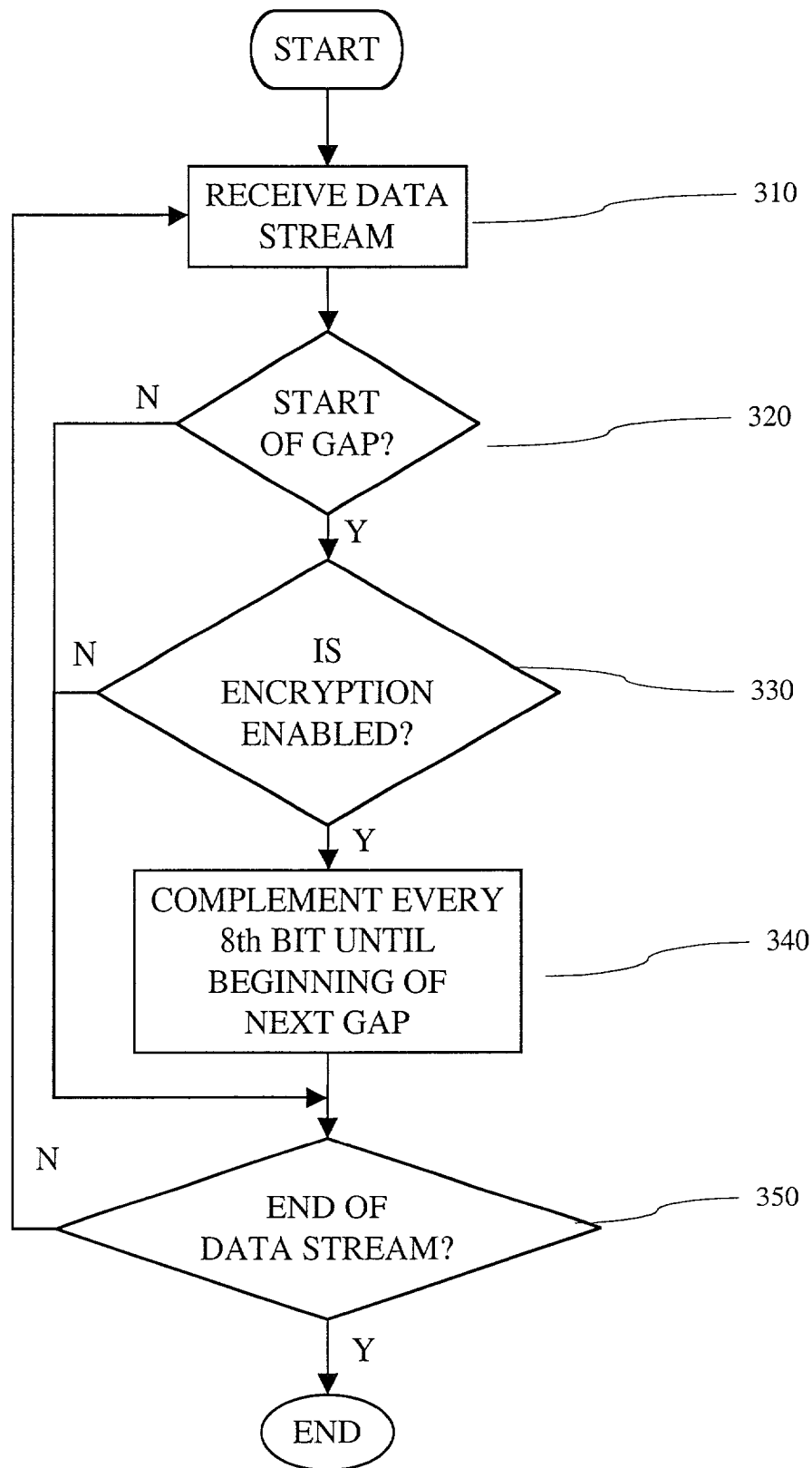


FIG. 3



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