

(12) **United States Patent**
Salim

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(54) **PROGRAMMABLE PACKET SWITCHING DEVICE**

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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 0 days.

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(51) **Int. Cl.**⁷ **H04L 12/56**

(52) **U.S. Cl.** **370/389; 370/401**

(58) **Field of Search** 370/389, 392, 370/401, 402, 403, 404, 405

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Primary Examiner—Chau Nguyen

Assistant Examiner—D. Trinh

(57) **ABSTRACT**

A packet processing apparatus comprises a programmable hardware discriminator for receiving incoming packets, and selecting bits from any part of the incoming packets, a decision table for storing information relating to how the packets are to be processed, programmable hardware searching logic for accessing the information in the table according to the selected bits, and a packet handler for processing the packets according to the result of the access. Since many networking processing tasks can be broken down into bit selection and table searching, this generic type of arrangement will suit a wide variety of applications. It facilitates developing logic directly in hardware which can reduce the effort needed to convert a working prototype into a product ready for use in the field, e.g. for handling new protocol components.

1 Claim, 14 Drawing Sheets

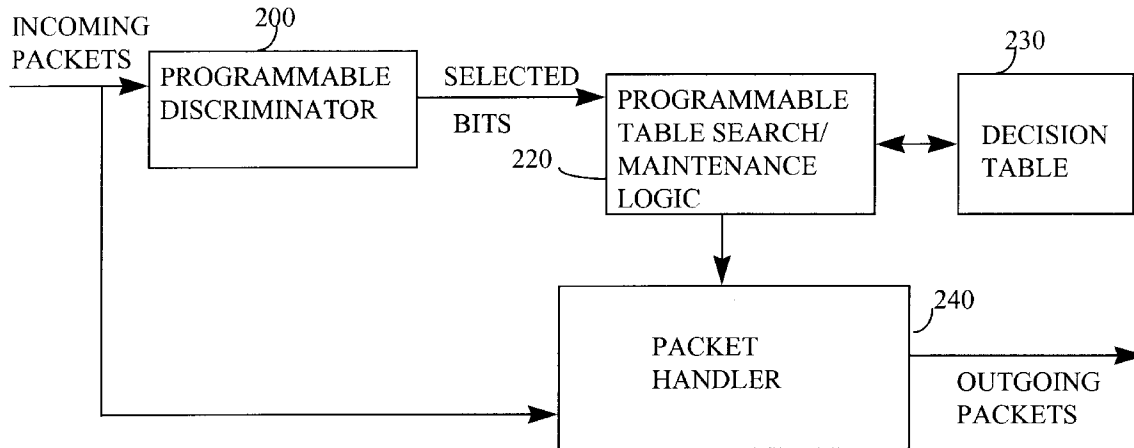


FIG. 1 PRIOR ART

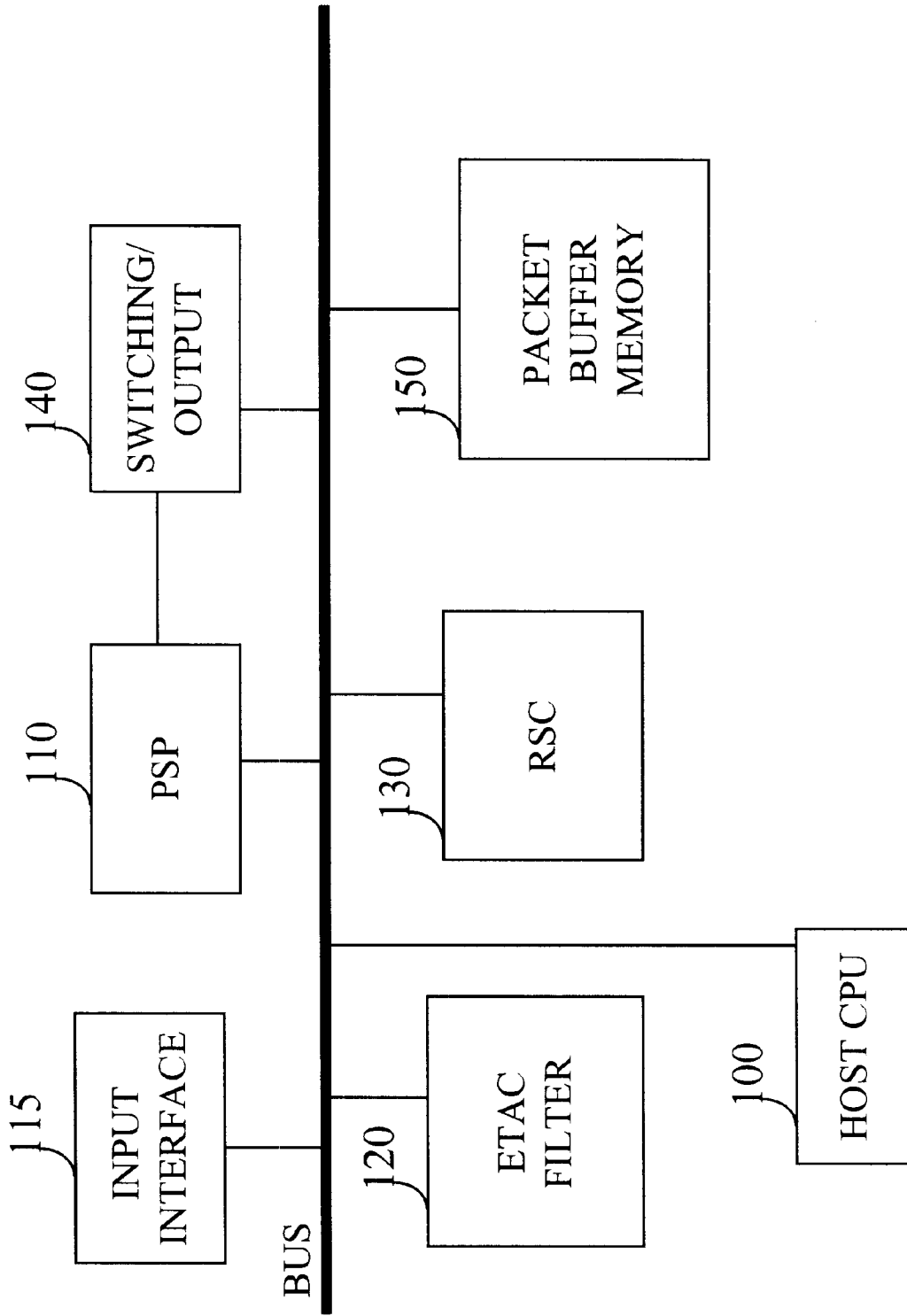
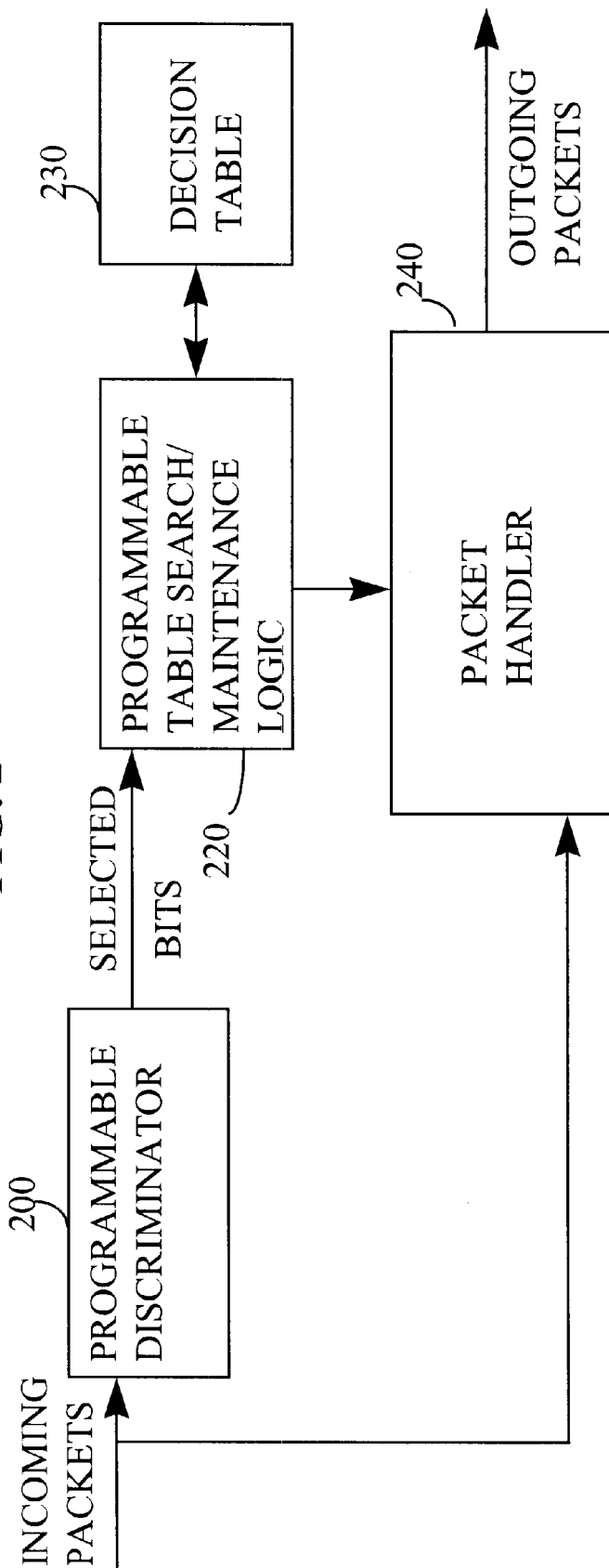


FIG. 2



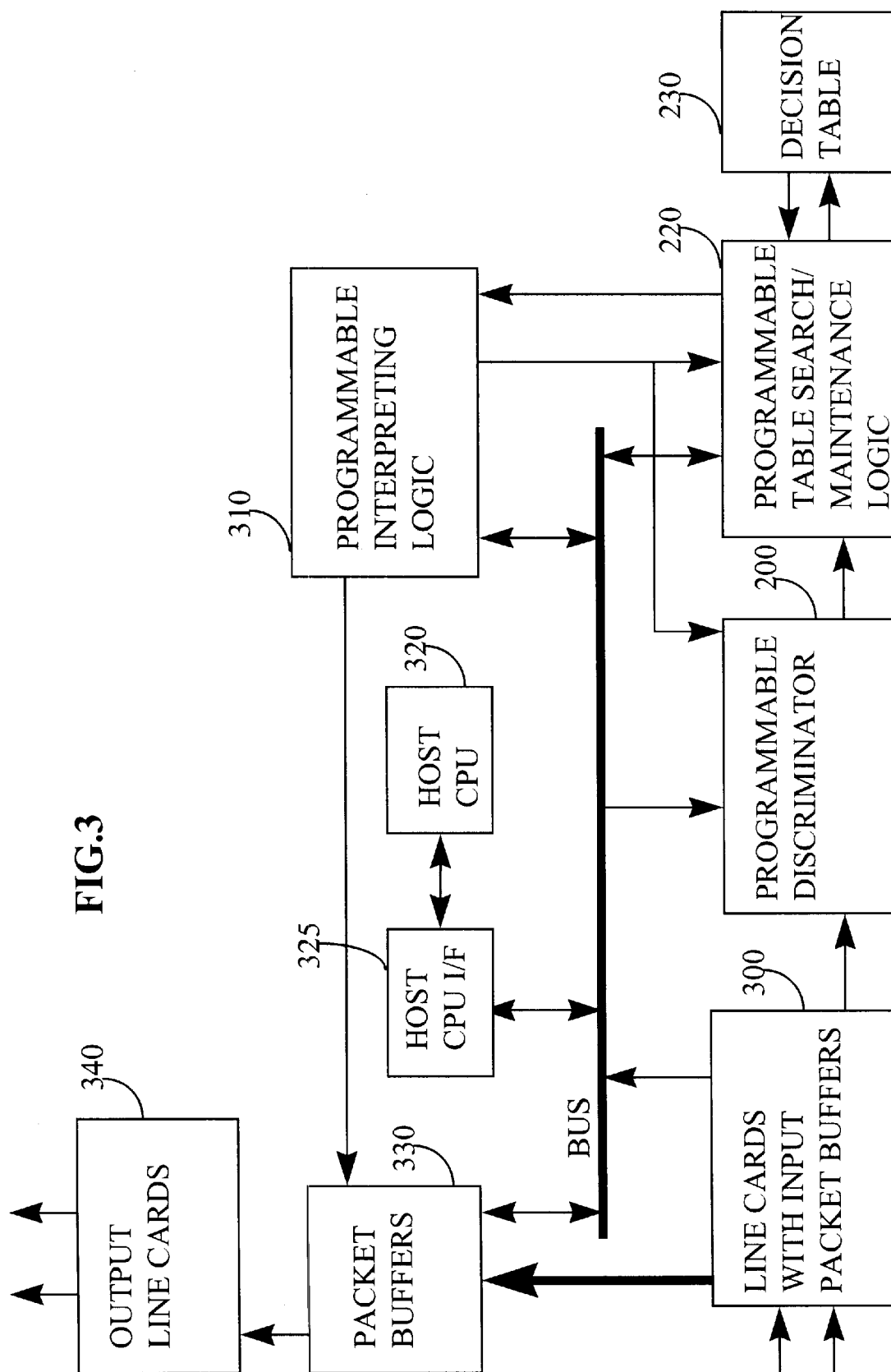
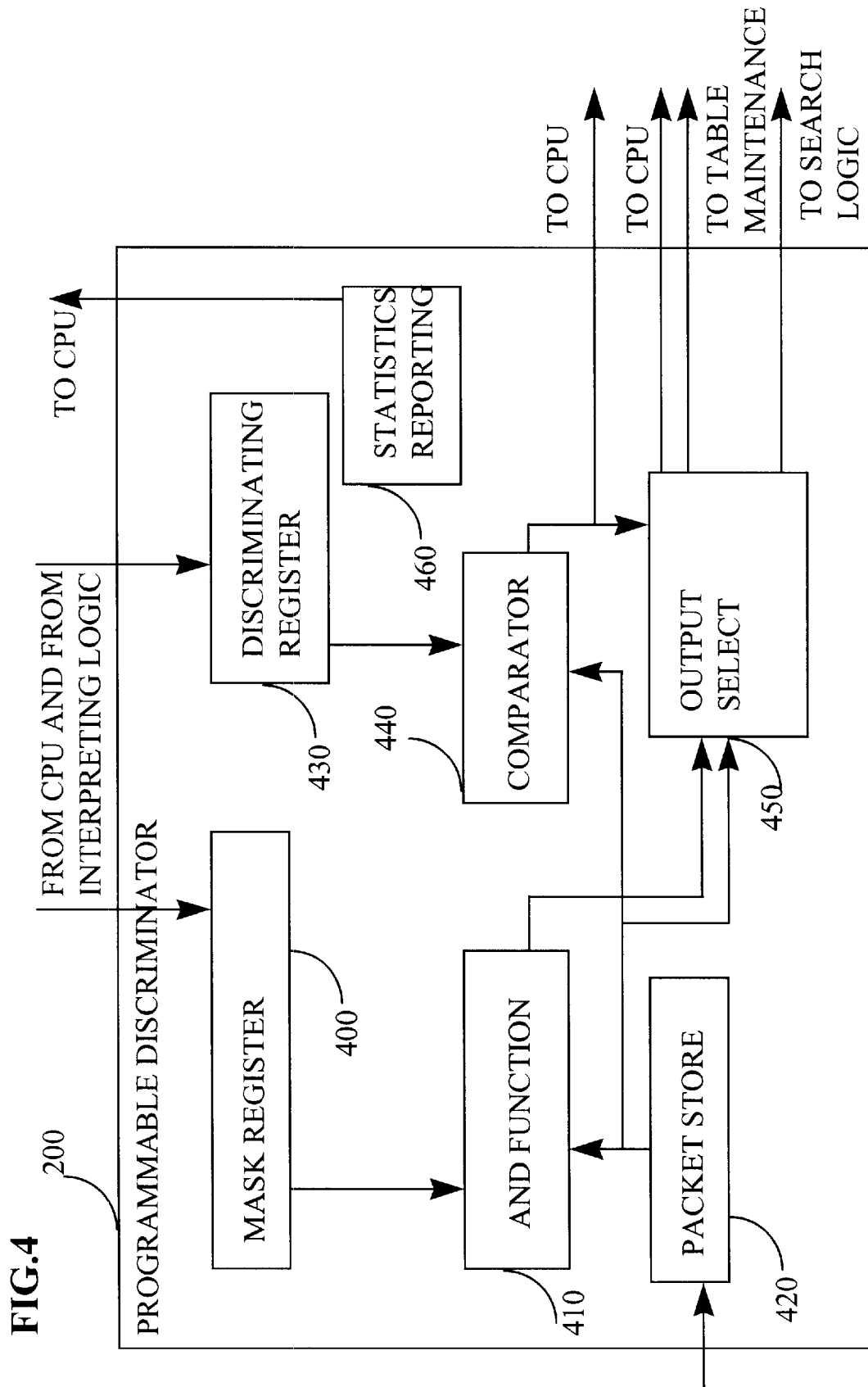


FIG. 3



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