

(12) **United States Patent**
Lincke et al.

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- (54) **METHOD AND SYSTEM FOR SECURE COMMUNICATIONS**
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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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- (21) Appl. No.: **09/086,888**
- (22) Filed: **May 29, 1998**
- (51) **Int. Cl.**⁷ **H06F 1/24**
- (52) **U.S. Cl.** **713/201; 713/200; 713/168; 380/255; 380/270**
- (58) **Field of Search** **380/255, 270, 380/277, 281, 283; 713/168, 171, 193, 200, 201**

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(57) **ABSTRACT**

A communications system and methods for securely transmitting a message between a wireless client and a proxy server are provided. A method for transmitting a message from the wireless client to a proxy server is provided. The message includes at least one packet of data and is encrypted using a data encryption key. The data encryption key is encrypted using a proxy server public key prior to sending the encrypted data encryption key to the proxy server. A method for transmitting a message from the proxy server to the wireless client is also provided. The proxy server recovers the data encryption key using the proxy server private key corresponding to the proxy server public key. The proxy server encrypts the message using the data encryption key and transmits the encrypted message to the wireless client. A communications system for secure communications comprising a source of data, a proxy server and a wireless client is also provided. Each transaction in the communications system comprises at least one request message and at least one response message. For each transaction, the wireless client encrypts a data encryption key using a proxy server public key. Messages exchanged between the wireless client and the proxy server are encrypted using the transaction specific data encryption key.

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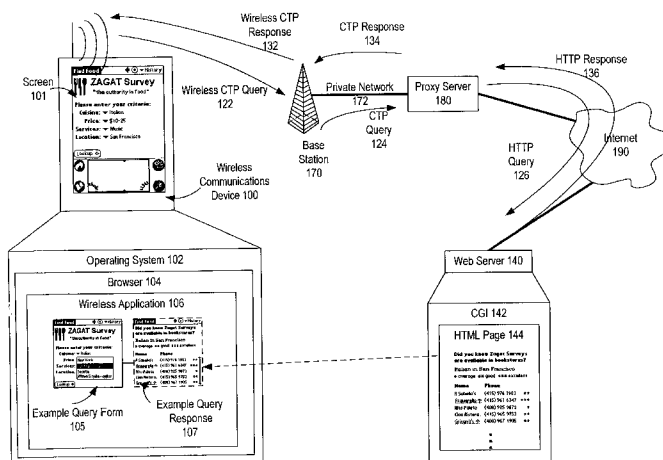
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36 Claims, 14 Drawing Sheets



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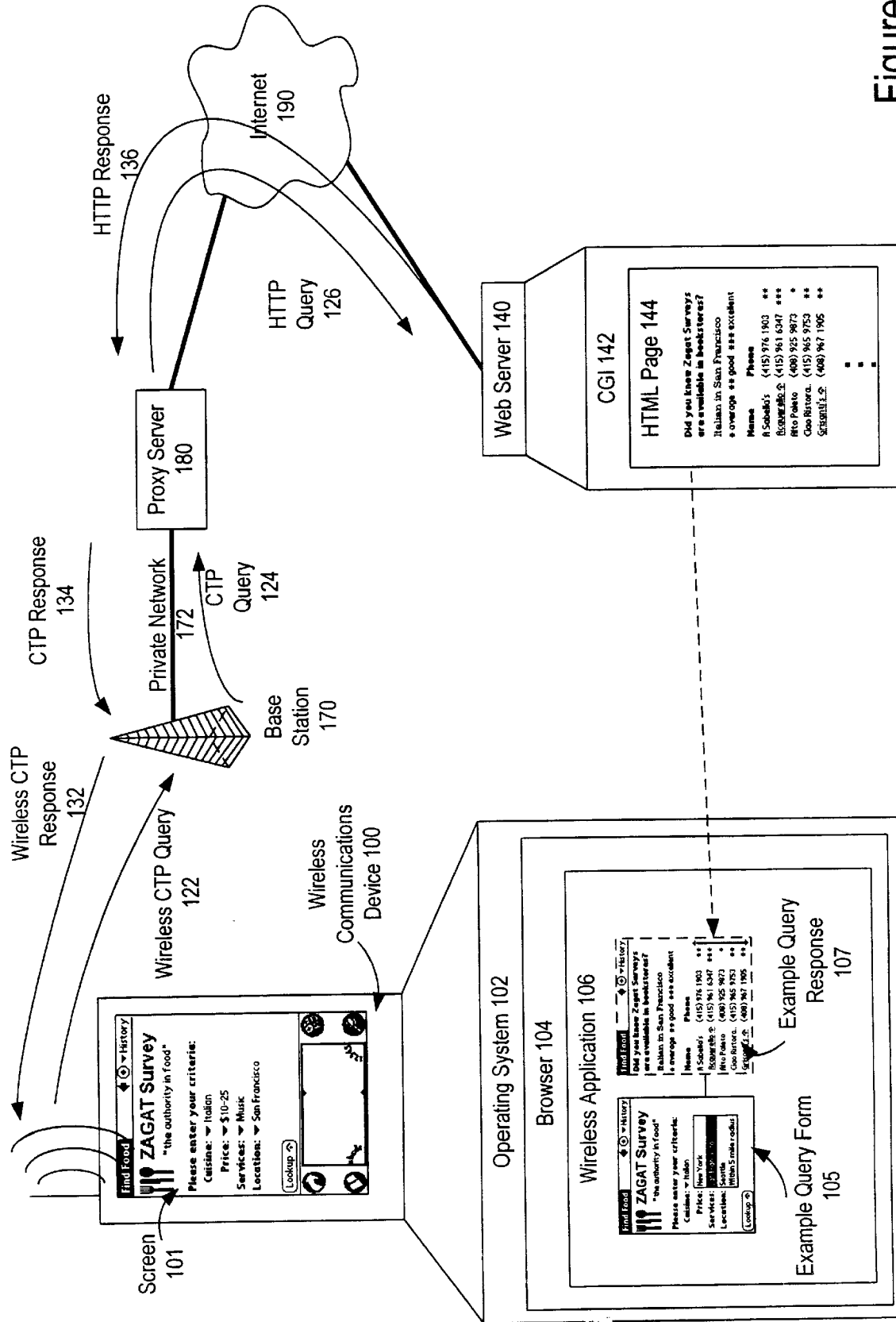


Figure 1

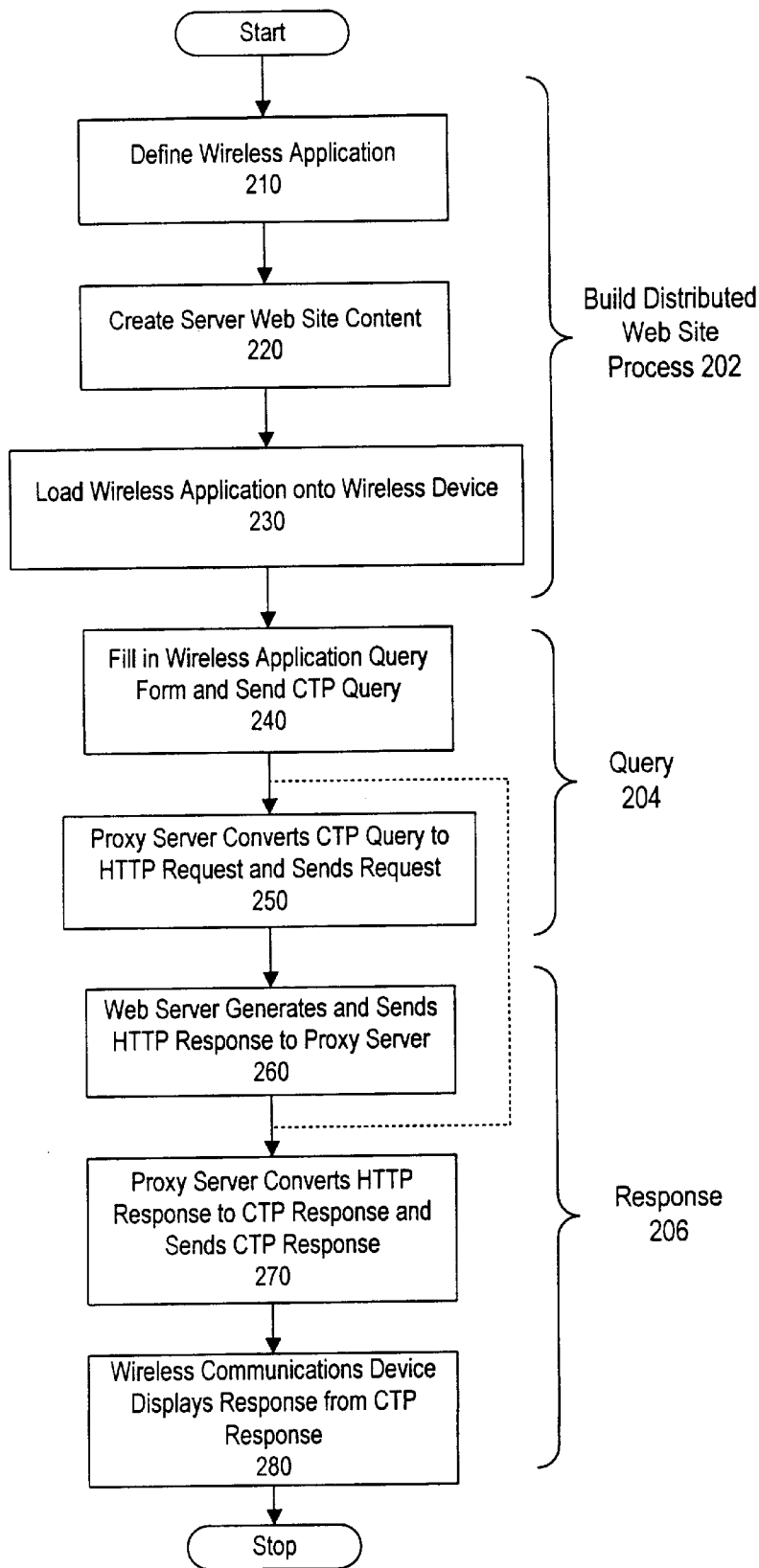


Figure 2

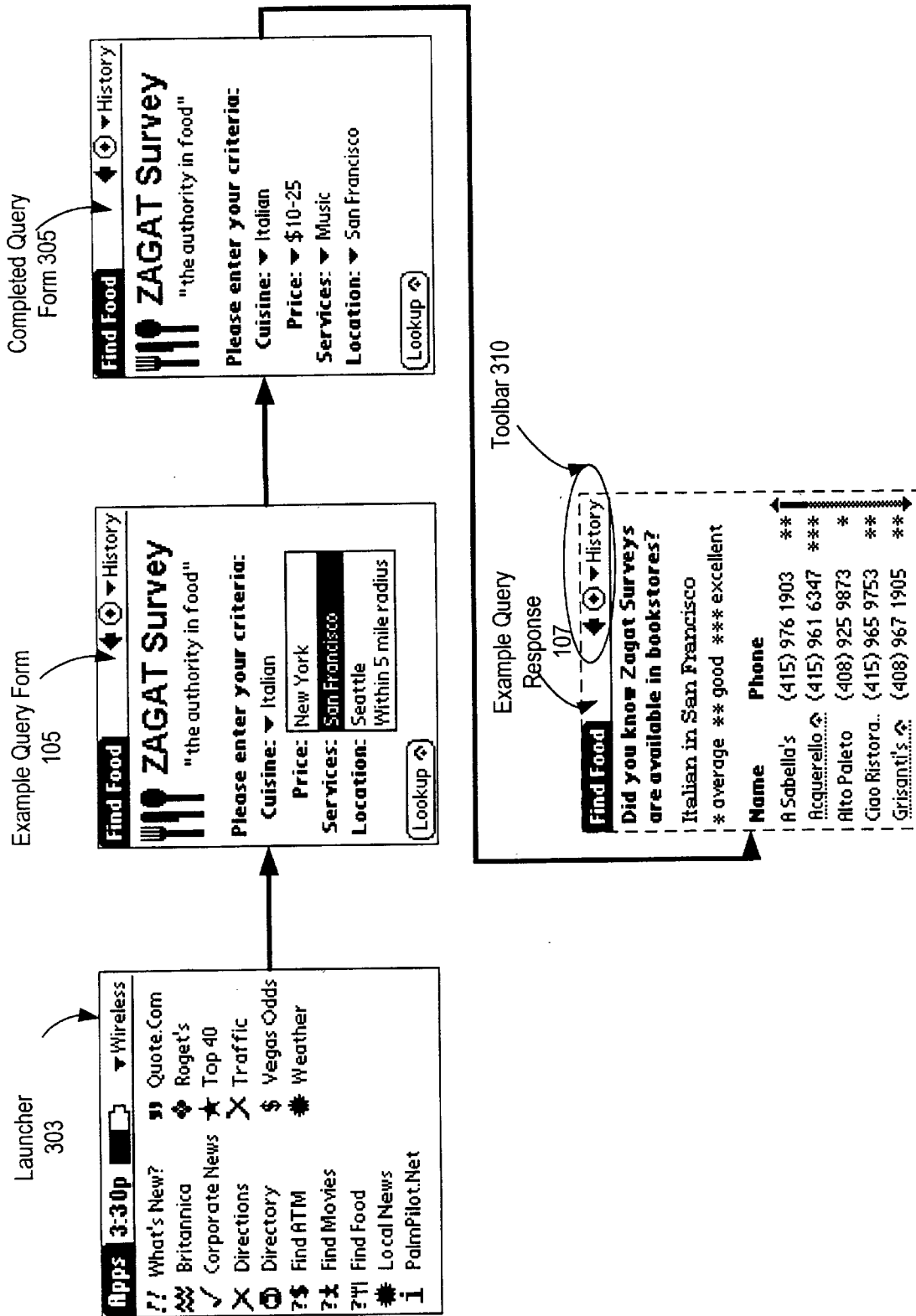


Figure 3

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