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United States Patent [19]
Parker

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- [54] **METHODS AND APPARATUS FOR LOCKING COMMUNICATIONS DEVICES**
- [75] Inventor: **John Patrick Parker**, Fowlmere, United Kingdom
- [73] Assignee: **BellSouth Corporation**, Atlanta, Ga.
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- [22] Filed: **Dec. 12, 1995**
- [51] **Int. Cl.**⁶ **H04Q 1/00**
- [52] **U.S. Cl.** **455/418; 455/418; 455/419; 455/420; 340/825.31; 340/825.34; 340/825.5**
- [58] **Field of Search** **455/419, 418, 455/420, 414, 411, 558, 560, 410; 340/825.3, 825.31, 825.34, 825.5; 380/23**

Attorney, Agent, or Firm—Dominic J. Chiantera; James L. Ewing, IV; Kilpatrick Stockton LLP

[57] **ABSTRACT**

An apparatus and method for locking and unlocking mobile telecommunications handsets or other devices is disclosed. Each handset is unactivated at the time of purchase. Other than emergency calls, or account activation, no calls can be made using the handset unless it has been unlocked. The handset is capable of receiving a readable subscriber identity module (SIM) having a network (or other) ID and a codeword, and its operation is to be locked and unlocked with respect to the entity corresponding to the ID on the SIM. Furthermore, the handset includes a processor programmed with a unique equipment identification number and a key. All handsets manufactured as part of a particular batch may include the key, which is burned or otherwise written into a memory area of the handset so that it may not be read without its being destroyed. The handset processor is also programmed to produce a handset-specific key as a function of the equipment identification number and the batch-specific key. Upon activation of the handset, the customer service center associated with the network operator transmits a modifier to the handset. The handset changes its handset-specific key according to the modifier to yield an operator-specific key. The resulting operator-specific key is used in conjunction with the network (or other) ID (from the SIM) to produce a checkword. If the checkword matches the codeword, which is read off the SIM, the handset is unlocked (i.e., enabled) for normal use. Other features of the invention include re-locking the handset according to similar principles, and providing a personal identification number for permanently unlocking the device, so that it can be used with any compatible SIM.

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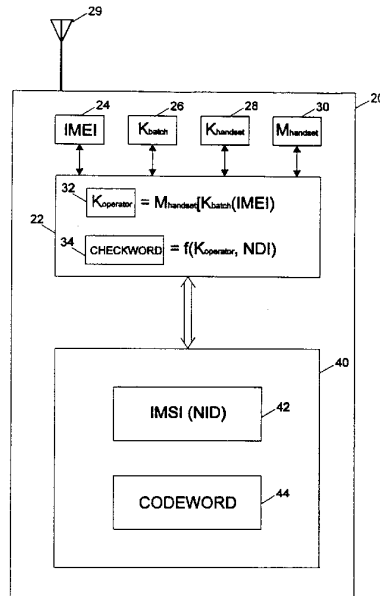
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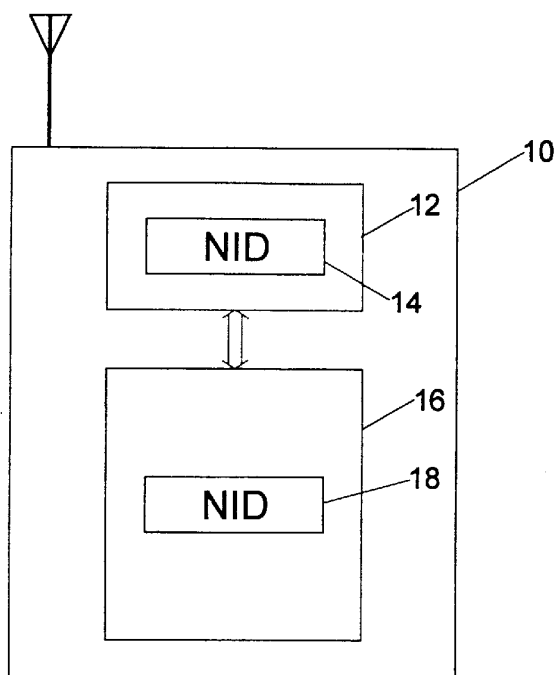
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Primary Examiner—Dwayne D. Bost
Assistant Examiner—Jean A. Gelin

28 Claims, 12 Drawing Sheets





PRIOR ART
FIG. 1

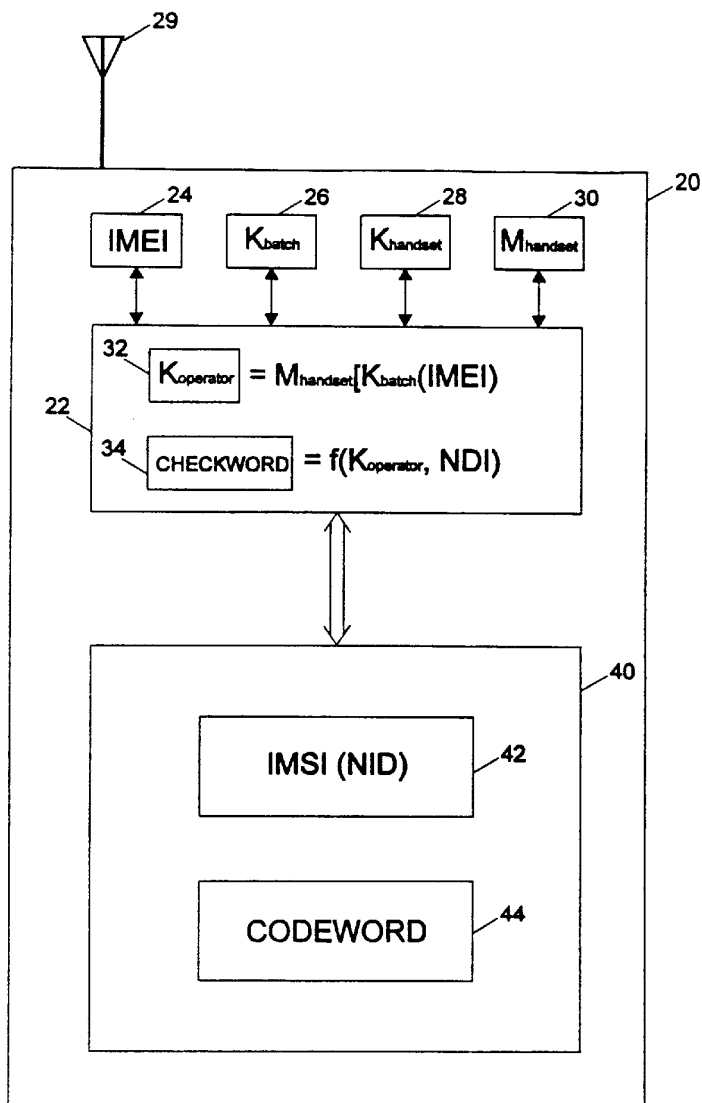


FIG. 2

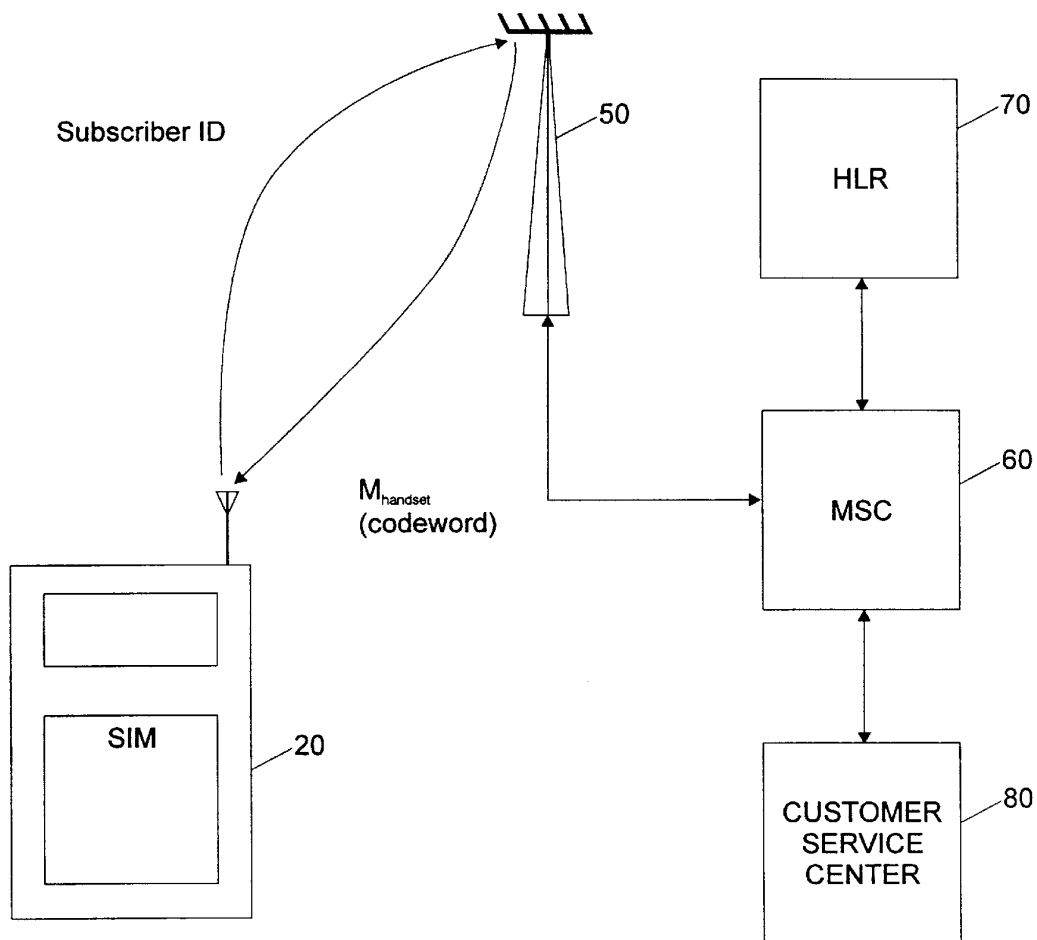


FIG. 3

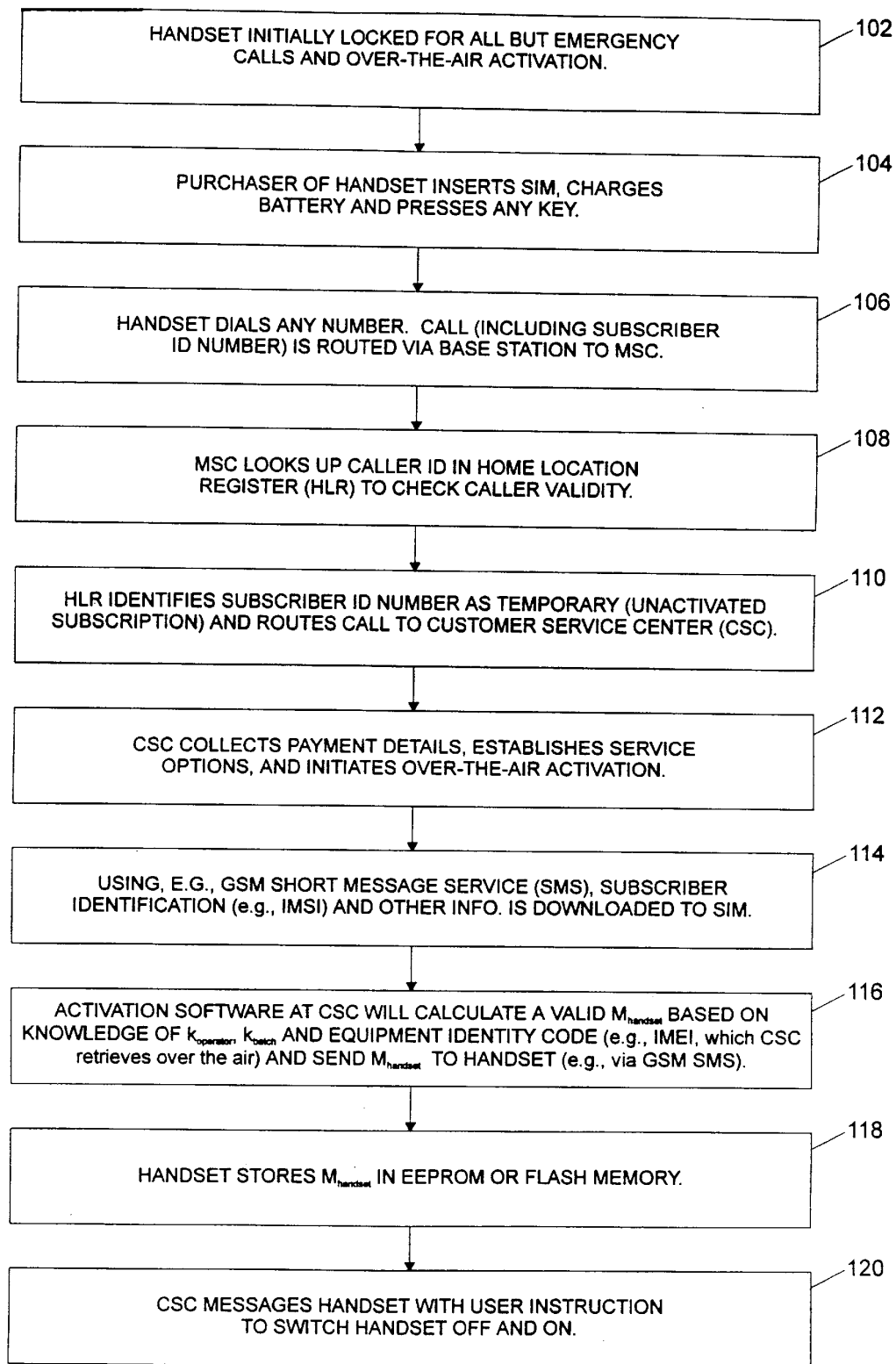


FIG. 4

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