

- [54] ENCRYPTED BROADCAST TELEVISION SYSTEM
- [75] Inventor: Arthur G. Mason, Hampshire, United Kingdom
- [73] Assignee: Independent Broadcasting Authority, London, England
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- [52] U.S. Cl. 380/20; 380/21; 380/10
- [58] Field of Search 358/114, 122, 123; 178/22.13, 22.08

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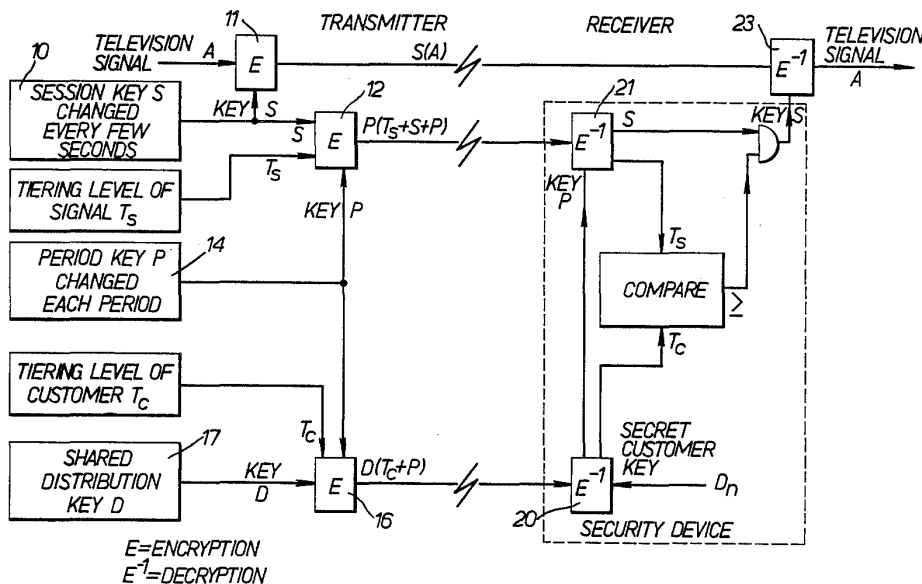
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Primary Examiner—Stephen C. Buczinski
 Assistant Examiner—Melissa L. Koltak

[57] ABSTRACT

A conditional access system for transmitting and receiving scrambled television signals over-air includes means for addressing each of the receiving apparatus with an over-air signal whereby to permit reception and descrambling of the signal. The transmitter is provided with means for assembling a cipher block of information including a first key for use in descrambling the television signal and information relating to a plurality of users, and means for encyphering the cipher block with a second key which is common to the plurality of users. On reception a receiver applies the second, common keys to the received cipher block, recovers the first key for use in descrambling the signal and the information relating to the respective user and descrambles the television signal. Further, it is proposed to transmit a further key in encrypted form and to use the first key to decrypt the further key which is then used to descramble the television signal. This provides a three level key system which is very secure but by using a common second key for a plurality of users, the time to access each user is short.

23 Claims, 5 Drawing Sheets



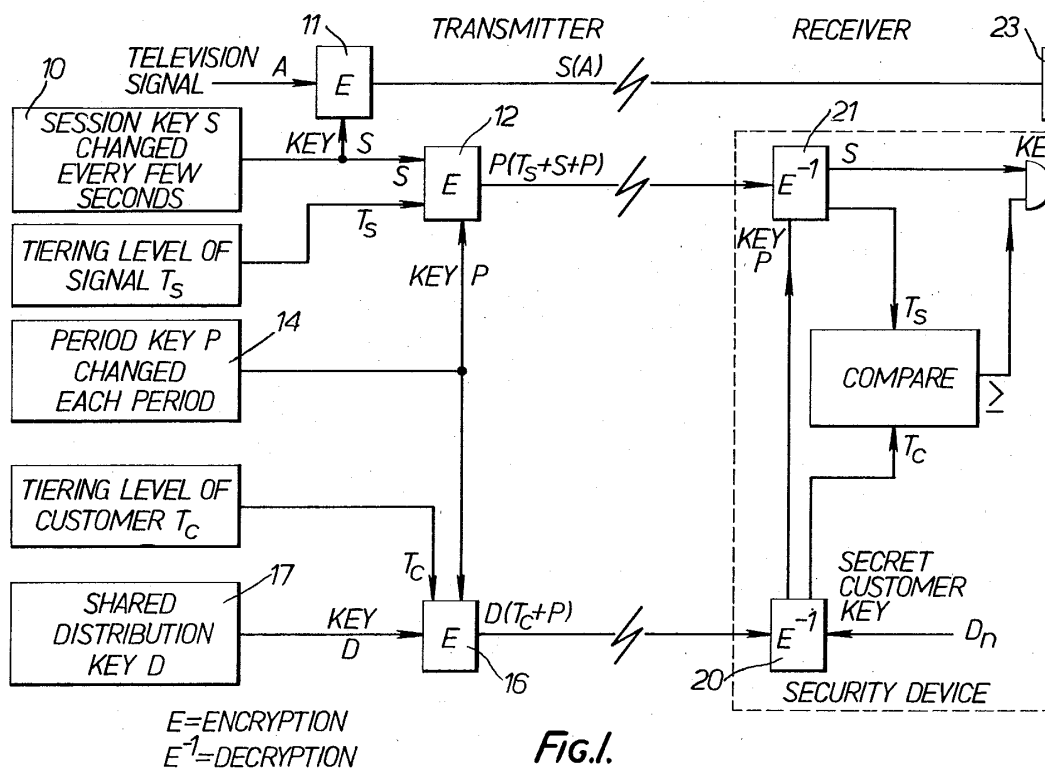


Fig. 1.

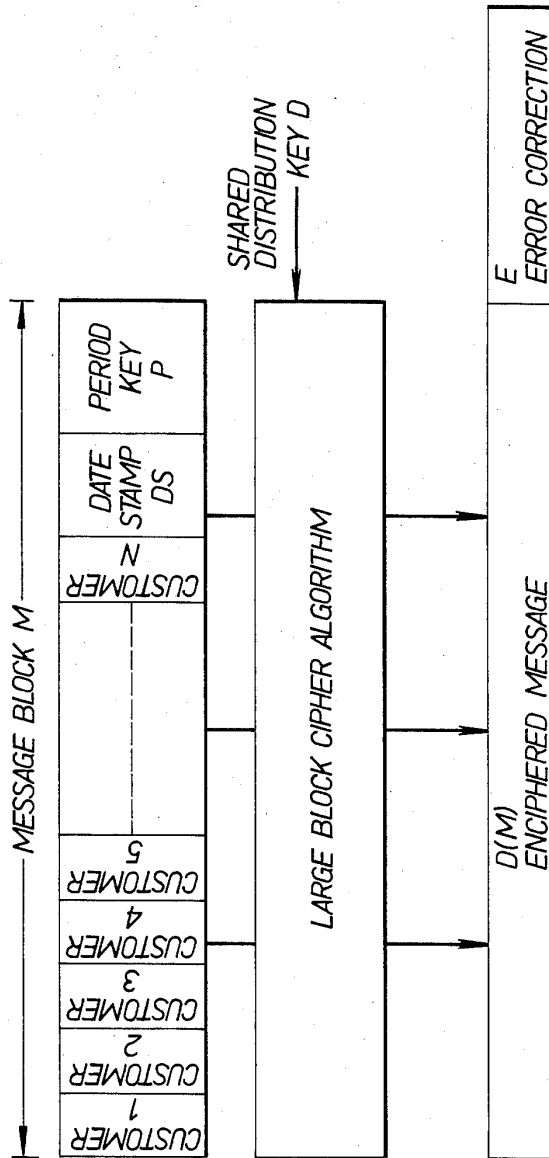


FIG. 2.

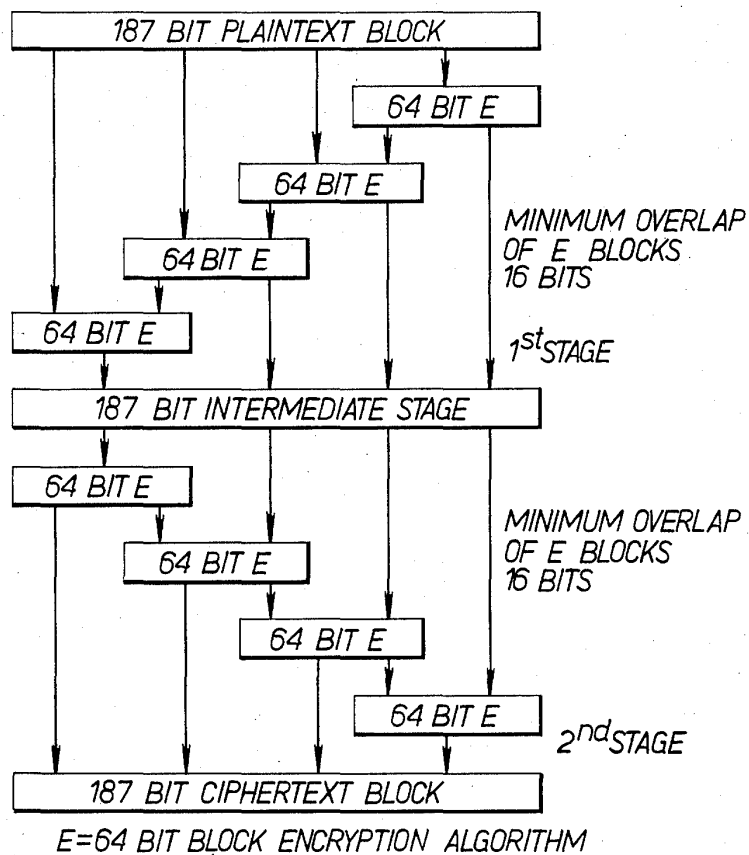
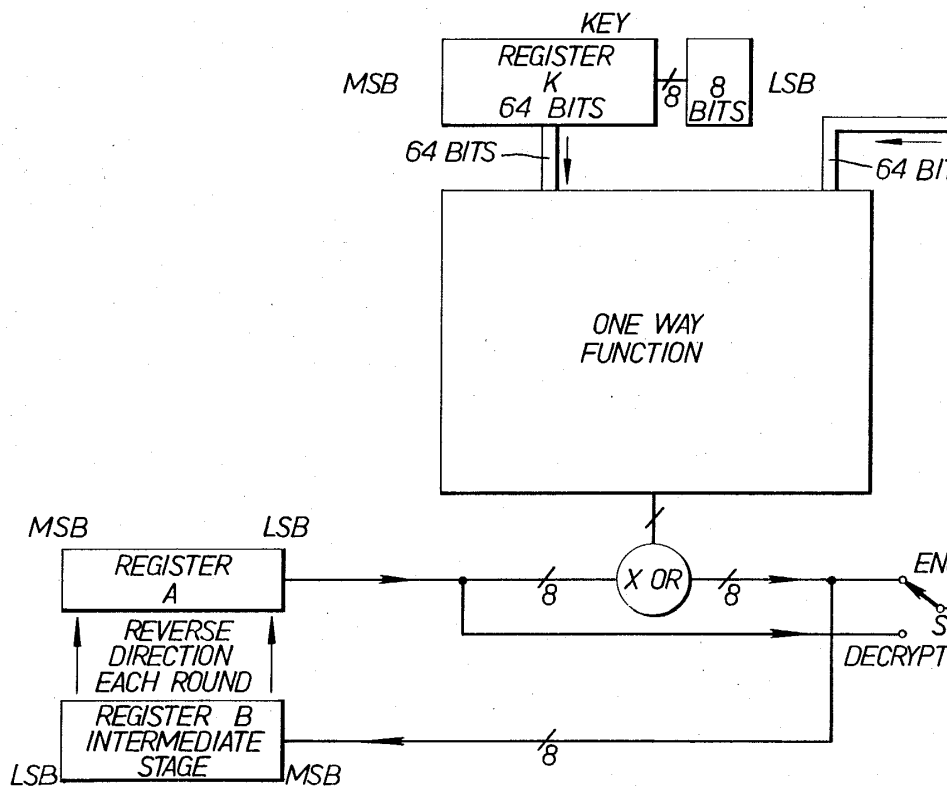


Fig.3a.



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