

CORRECTED VERSION

26 JUL 2001

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
22 March 2001 (22.03.2001)

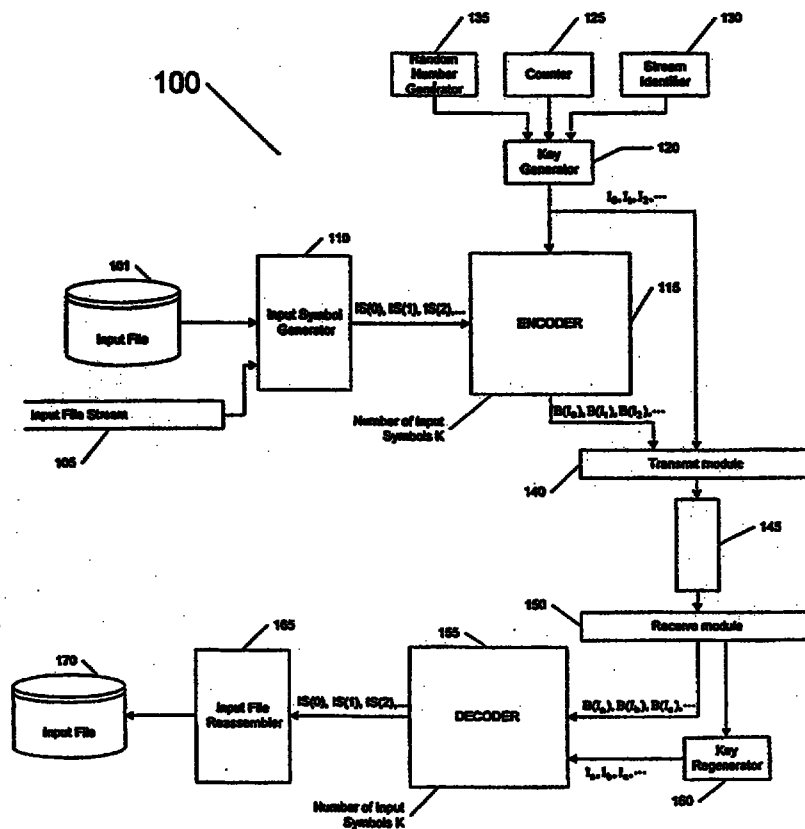
PCT

(10) International Publication Number
WO 01/20786 A1

- (51) International Patent Classification⁷: H03M 13/47 (72) Inventor; and
(21) International Application Number: PCT/US00/25405 (75) Inventor/Applicant (for US only): LUBY, Michael, G.
[US/US]; 1133 Miller Avenue, Berkeley, CA 94708 (US).
(22) International Filing Date: 15 September 2000 (15.09.2000) (74) Agents: ALBERT, Philip, H. et al.; Townsend and
Townsend and Crew LLP, Two Embarcadero Center,
Eighth Floor, San Francisco, CA 94111 (US).
(25) Filing Language: English
(26) Publication Language: English (81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
(30) Priority Data: 09/399,201 17 September 1999 (17.09.1999) US
(71) Applicant (for all designated States except US): DIGITAL
FOUNTAIN [US/US]; 600 Alabama Street, San Francisco,
CA 94110 (US).

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(54) Title: GROUP CHAIN REACTION ENCODER WITH VARIABLE NUMBER OF ASSOCIATED INPUT DATA FOR EACH OUTPUT GROUP CODE



(57) Abstract: An encoder uses an input file of data and a key to produce a group of output symbols. A group of output symbols with key I is generated by determining a weight, $W(I)$, for the group of output symbols to be generated, selecting $W(I)$ of the input symbols associated with the group according to a function of I, and generating the output symbol values $B(I)$ from a predetermined value function $R(I)$ of the selected $W(I)$ input symbols. An encoder can be called repeatedly to generate multiple groups of output symbols or multiple output symbols. The groups of output symbols are generally independent of each other, and an unbounded number (subject to the resolution of I) can be generated, if needed. A decoder receives some or all of the output symbols generated. The number of output symbols needed to decode an input file is equal to, or slightly greater than, the number of input symbols comprising the file, assuming that input symbols and output symbols represent the same number of bits of data.

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