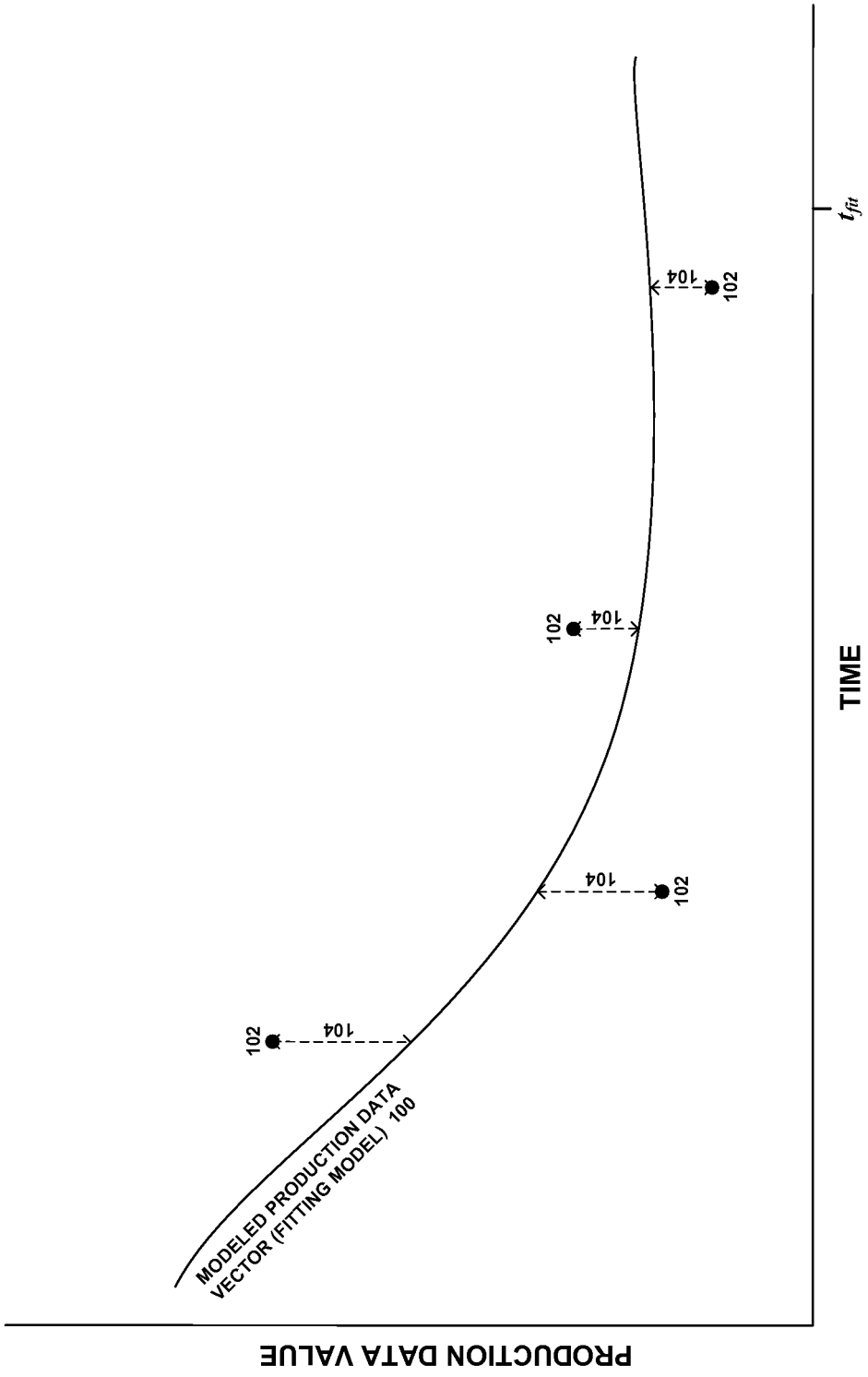

PRODUCTION DATA VALUE
TIME
t_{fit}
MODELED PRODUCTION DATA VECTOR (FITTING MODEL) 100
102
104
102
104
102
104
102
104

FIG. 1

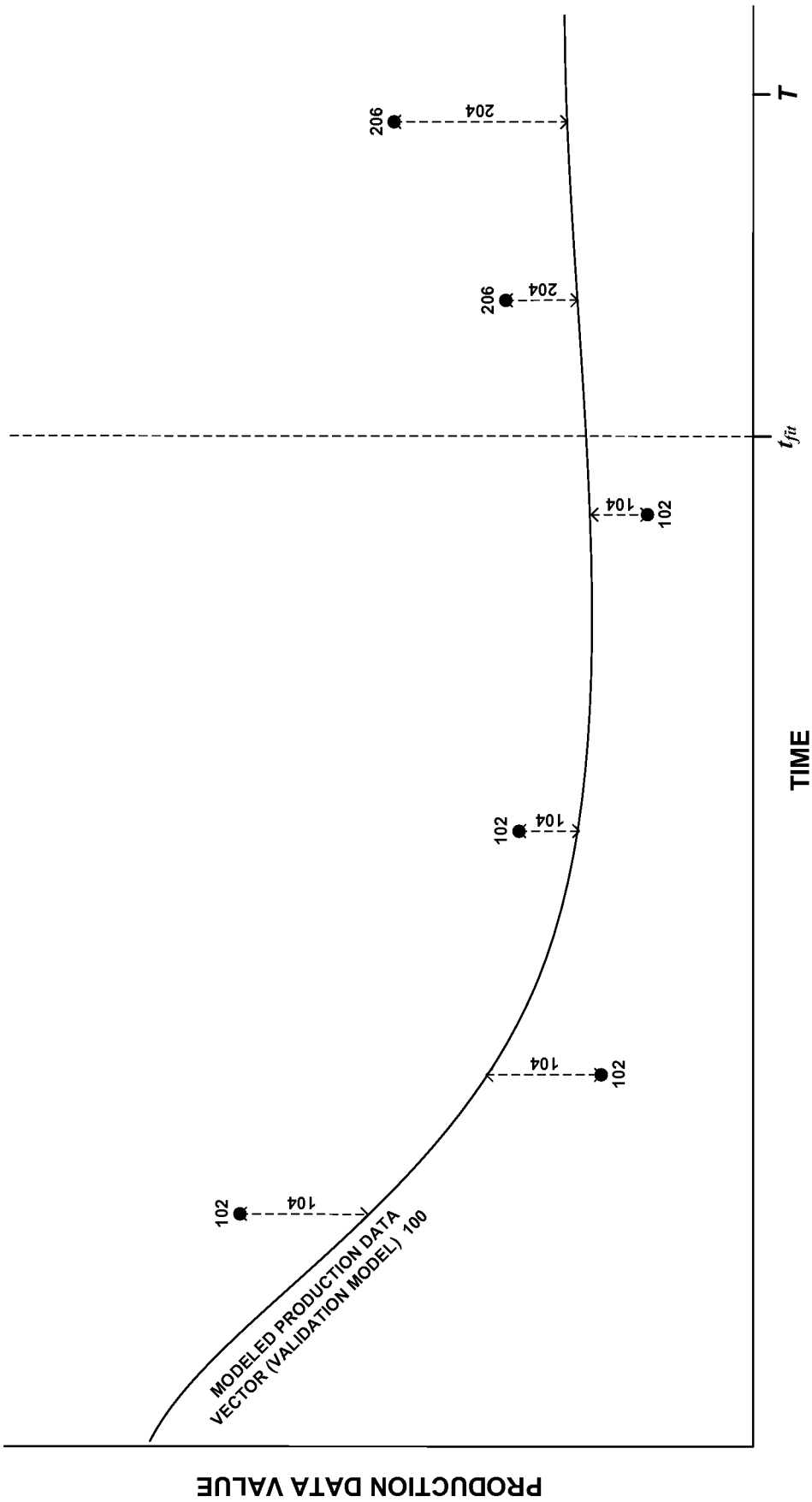

T
t_{fit}
206
204
206
204
102
104
102
104
102
104
102
104
MODELED PRODUCTION DATA VECTOR (VALIDATION MODEL) 100
PRODUCTION DATA VALUE
TIME

FIG. 2

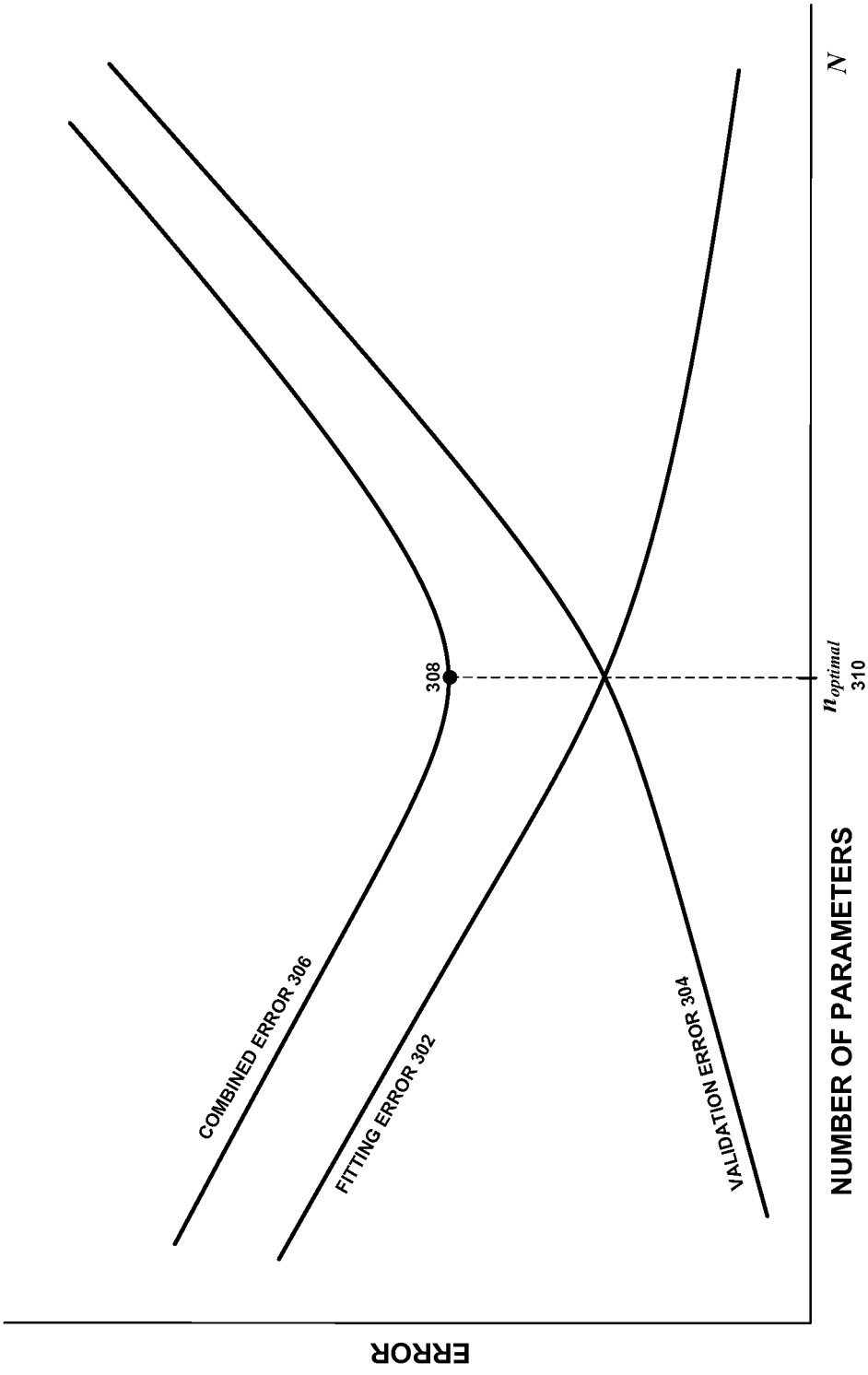

ERROR
NUMBER OF PARAMETERS
N
$n_{optimal}$
310
308
COMBINED ERROR 306
FITTING ERROR 302
VALIDATION ERROR 304

FIG. 3

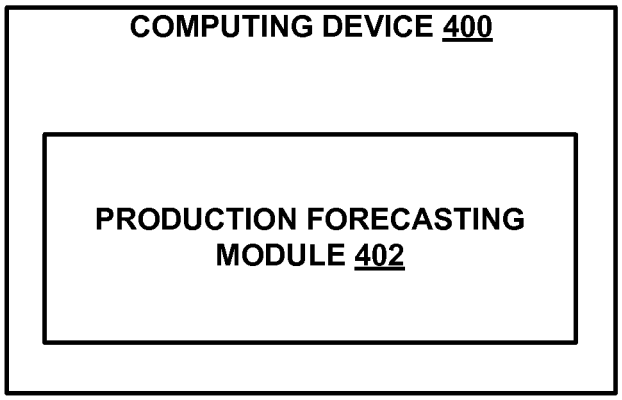


FIG. 4

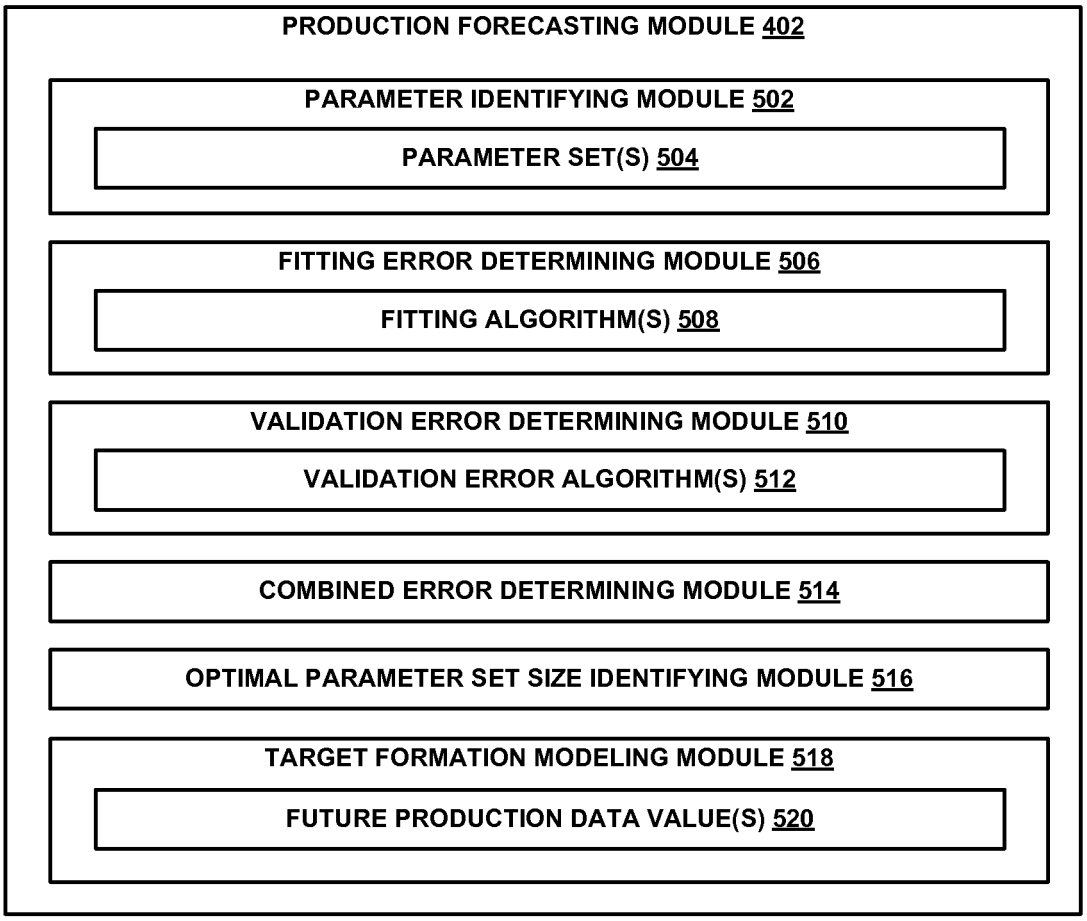

PRODUCTION FORECASTING MODULE 402
PARAMETER IDENTIFYING MODULE 502
PARAMETER SET(S) 504
FITTING ERROR DETERMINING MODULE 506
FITTING ALGORITHM(S) 508
VALIDATION ERROR DETERMINING MODULE 510
VALIDATION ERROR ALGORITHM(S) 512
COMBINED ERROR DETERMINING MODULE 514
OPTIMAL PARAMETER SET SIZE IDENTIFYING MODULE 516
TARGET FORMATION MODELING MODULE 518
FUTURE PRODUCTION DATA VALUE(S) 520

FIG. 5

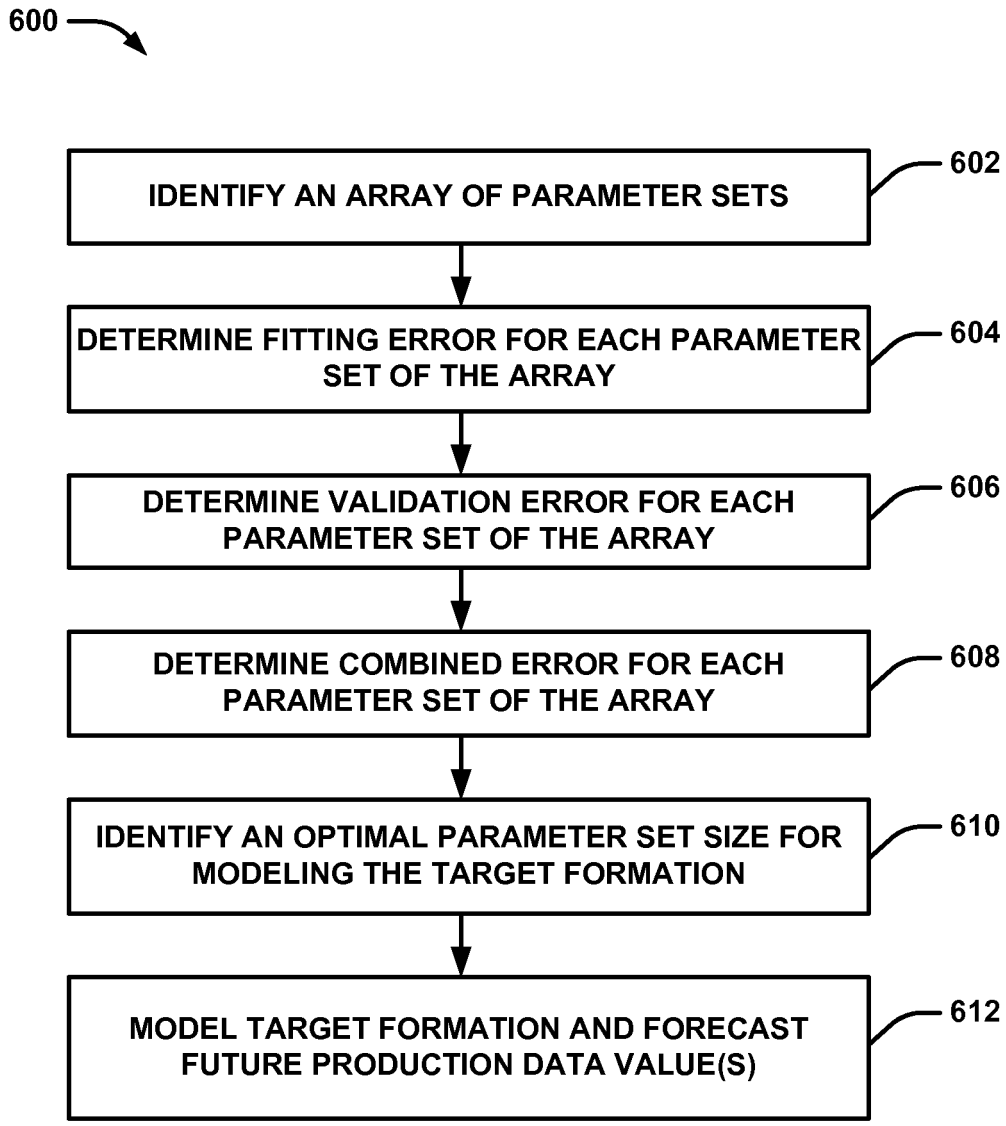

600
IDENTIFY AN ARRAY OF PARAMETER SETS
602
DETERMINE FITTING ERROR FOR EACH PARAMETER SET OF THE ARRAY
604
DETERMINE VALIDATION ERROR FOR EACH PARAMETER SET OF THE ARRAY
606
DETERMINE COMBINED ERROR FOR EACH PARAMETER SET OF THE ARRAY
608
IDENTIFY AN OPTIMAL PARAMETER SET SIZE FOR MODELING THE TARGET FORMATION
610
MODEL TARGET FORMATION AND FORECAST FUTURE PRODUCTION DATA VALUE(S)
612

FIG. 6

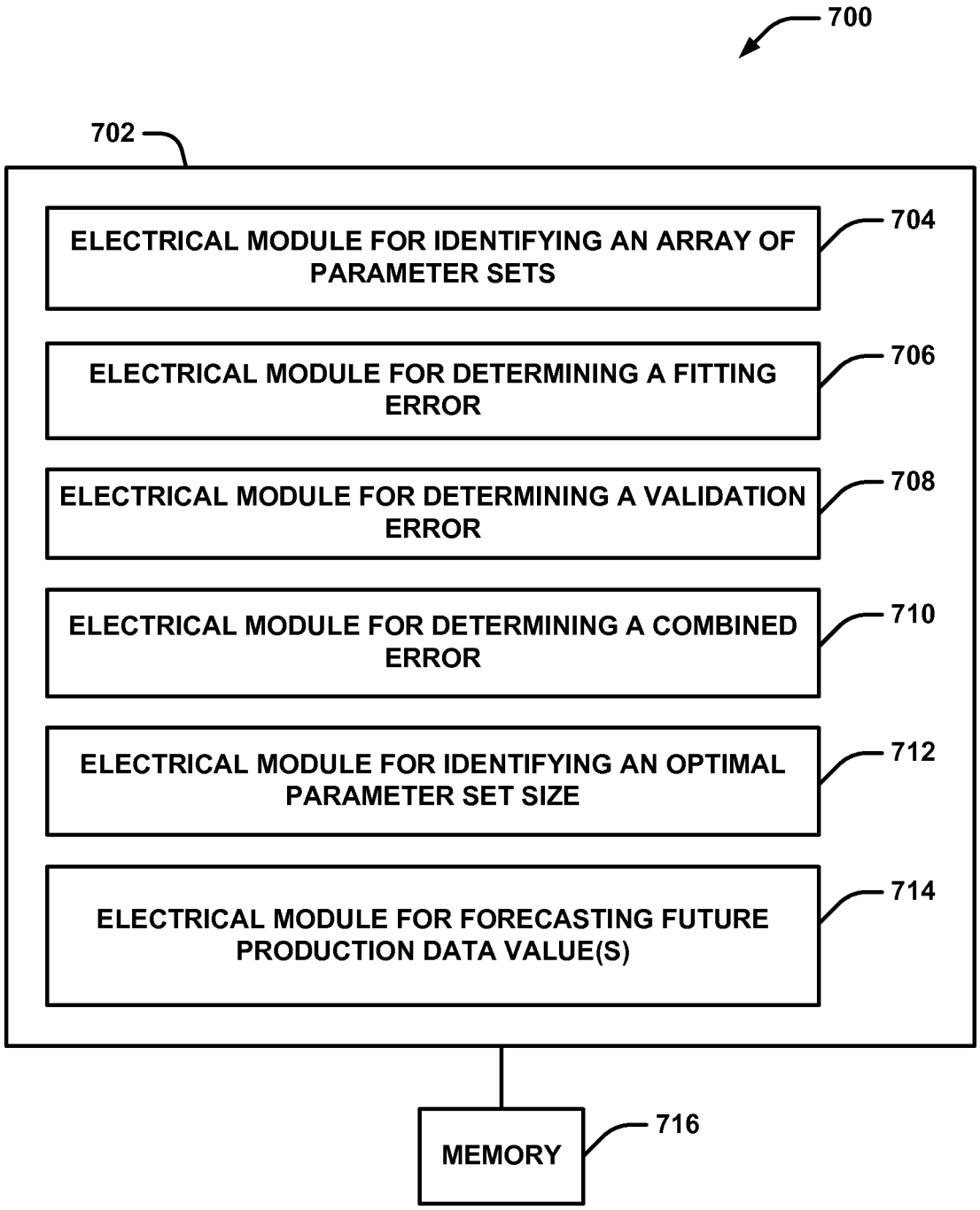

700
702
ELECTRICAL MODULE FOR IDENTIFYING AN ARRAY OF PARAMETER SETS
704
ELECTRICAL MODULE FOR DETERMINING A FITTING ERROR
706
ELECTRICAL MODULE FOR DETERMINING A VALIDATION ERROR
708
ELECTRICAL MODULE FOR DETERMINING A COMBINED ERROR
710
ELECTRICAL MODULE FOR IDENTIFYING AN OPTIMAL PARAMETER SET SIZE
712
ELECTRICAL MODULE FOR FORECASTING FUTURE PRODUCTION DATA VALUE(S)
714
MEMORY
716

FIG. 7

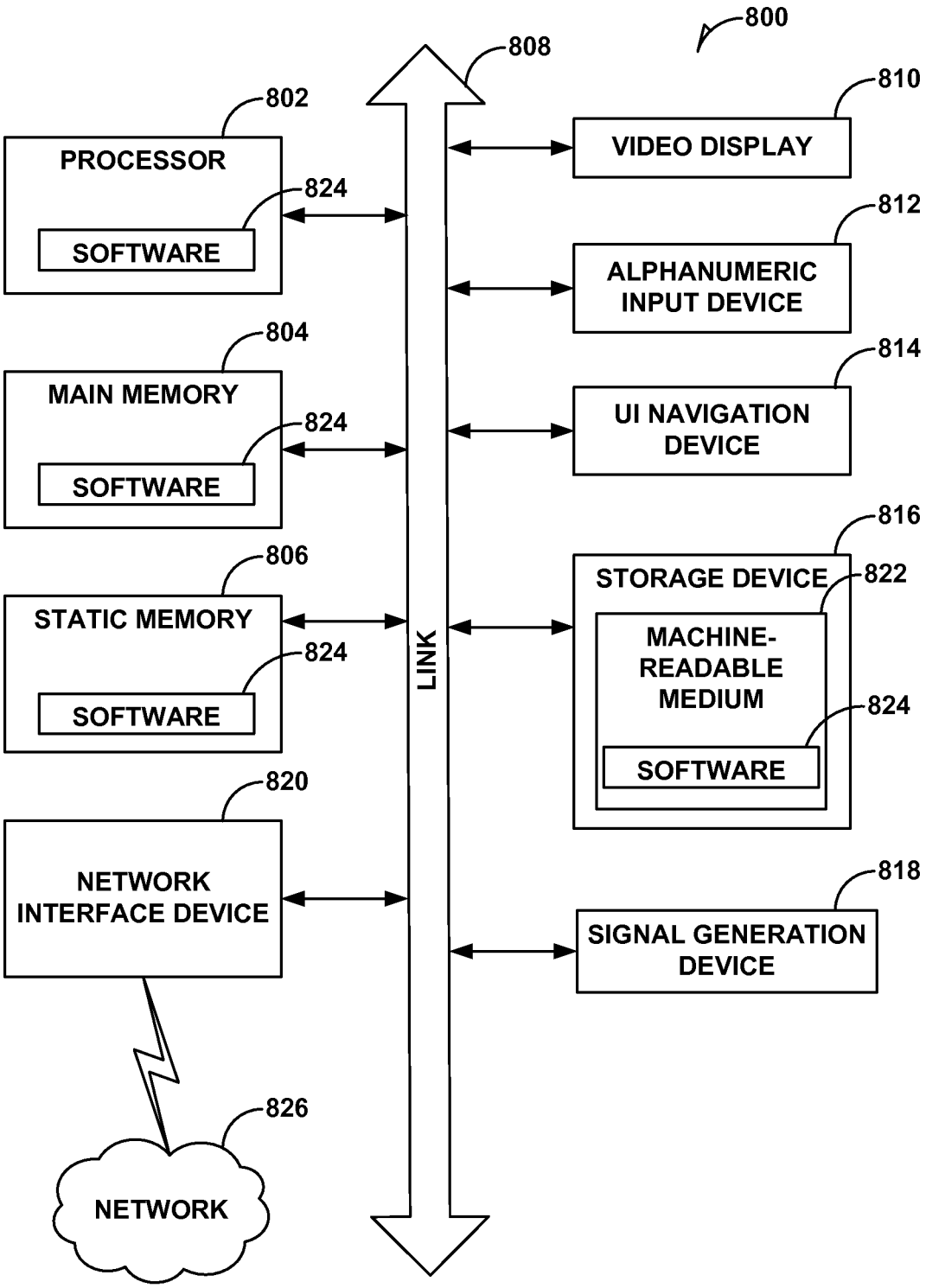

800
808
802
PROCESSOR
824
SOFTWARE
804
MAIN MEMORY
824
SOFTWARE
806
STATIC MEMORY
824
SOFTWARE
820
NETWORK INTERFACE DEVICE
826
NETWORK
LINK
810
VIDEO DISPLAY
812
ALPHANUMERIC INPUT DEVICE
814
UI NAVIGATION DEVICE
816
STORAGE DEVICE
822
MACHINE-READABLE MEDIUM
824
SOFTWARE
818
SIGNAL GENERATION DEVICE

FIG. 8