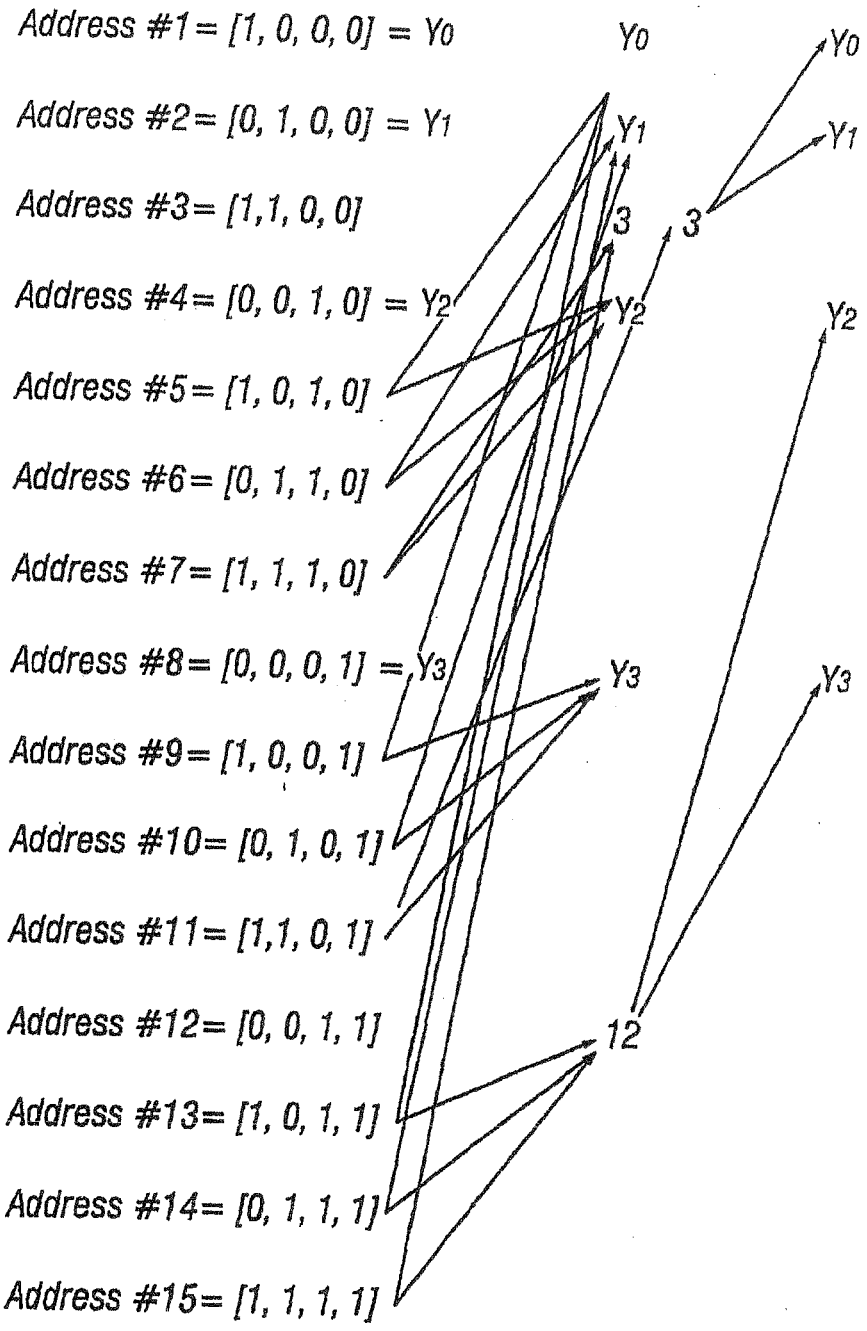

Address #1= [1, 0, 0, 0] = Y0
Address #2= [0, 1, 0, 0] = Y1
Address #3= [1,1, 0, 0]
Address #4= [0, 0, 1, 0] = Y2
Address #5= [1, 0, 1, 0]
Address #6= [0, 1, 1, 0]
Address #7= [1, 1, 1, 0]
Address #8= [0, 0, 0, 1] = Y3
Address #9= [1, 0, 0, 1]
Address #10= [0, 1, 0, 1]
Address #11= [1,1, 0, 1]
Address #12= [0, 0, 1, 1]
Address #13= [1, 0, 1, 1]
Address #14= [0, 1, 1, 1]
Address #15= [1, 1, 1, 1]
Y0
Y1
3
Y2
Y3
12
3
Y0
Y1
Y2
Y3

FIG. 1

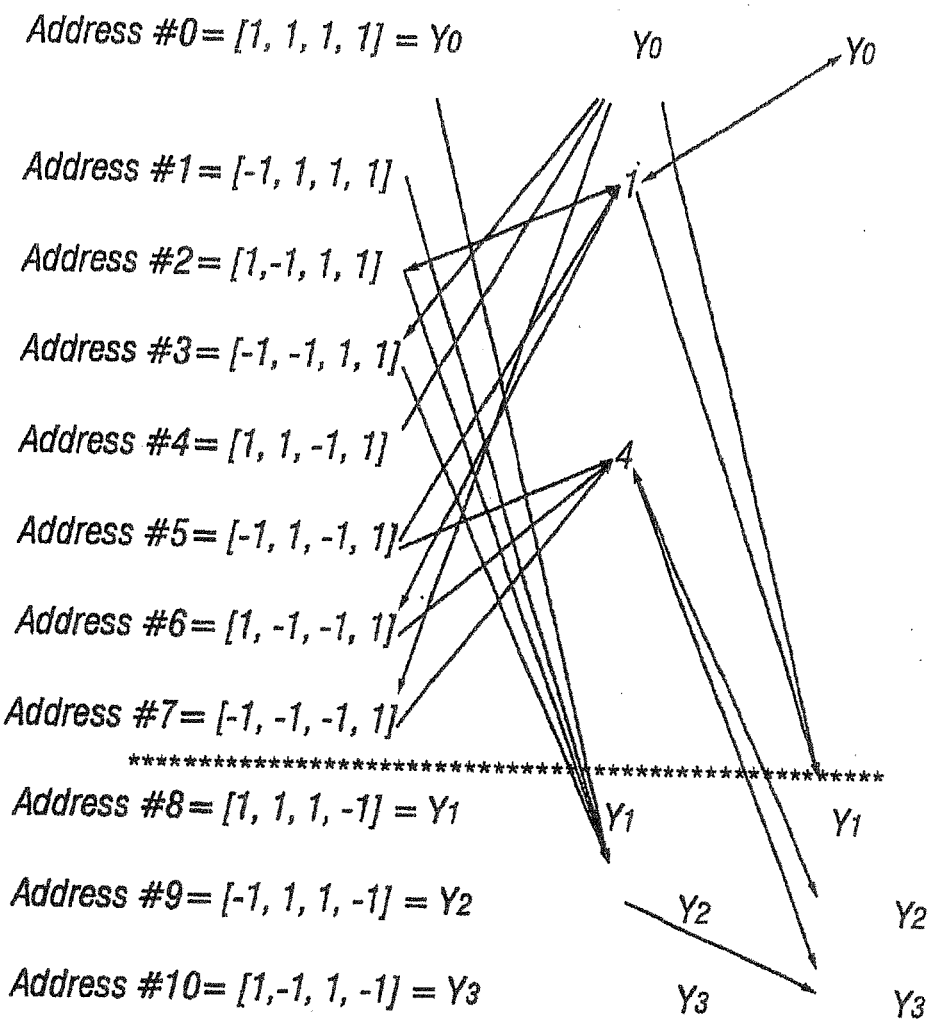

Address #0= [1, 1, 1, 1] = Y0
Address #1= [-1, 1, 1, 1]
Address #2= [1,-1, 1, 1]
Address #3= [-1, -1, 1, 1]
Address #4= [1, 1, -1, 1]
Address #5= [-1, 1, -1, 1]
Address #6= [1, -1, -1, 1]
Address #7= [-1, -1, -1, 1]
Address #8= [1, 1, 1, -1] = Y1
Address #9= [-1, 1, 1, -1] = Y2
Address #10= [1,-1, 1, -1] = Y3
Y0
Y0
1
4
Y1
Y1
Y2
Y2
Y3
Y3

FIG. 2

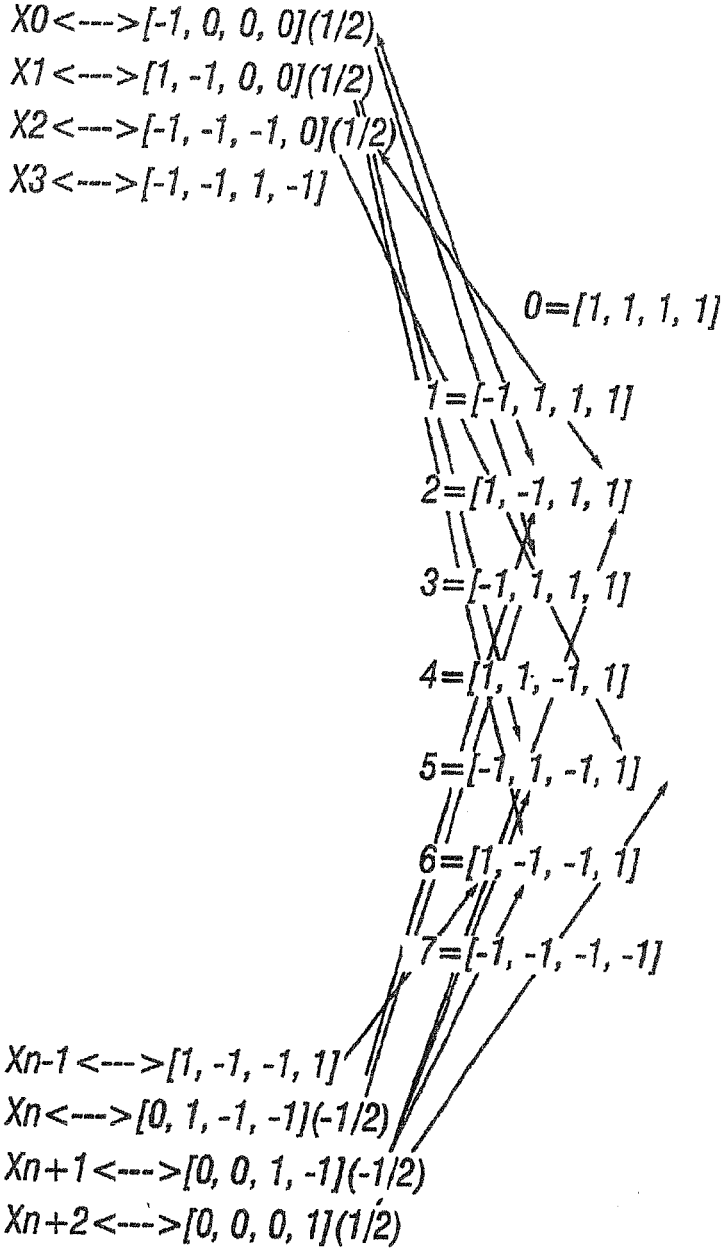

X0<--->[-1, 0, 0, 0](1/2)
X1<--->[1, -1, 0, 0](1/2)
X2<--->[-1, -1, -1, 0](1/2)
X3<--->[-1, -1, 1, -1]
0=[1, 1, 1, 1]
1=[-1, 1, 1, 1]
2=[1, -1, 1, 1]
3=[-1, 1, 1, 1]
4=[1, 1, -1, 1]
5=[-1, 1, -1, 1]
6=[1, -1, -1, 1]
7=[-1, -1, -1, -1]
Xn-1<--->[1, -1, -1, 1]
Xn<--->[0, 1, -1, -1](-1/2)
Xn+1<--->[0, 0, 1, -1](-1/2)
Xn+2<--->[0, 0, 0, 1](1/2)

FIG. 3

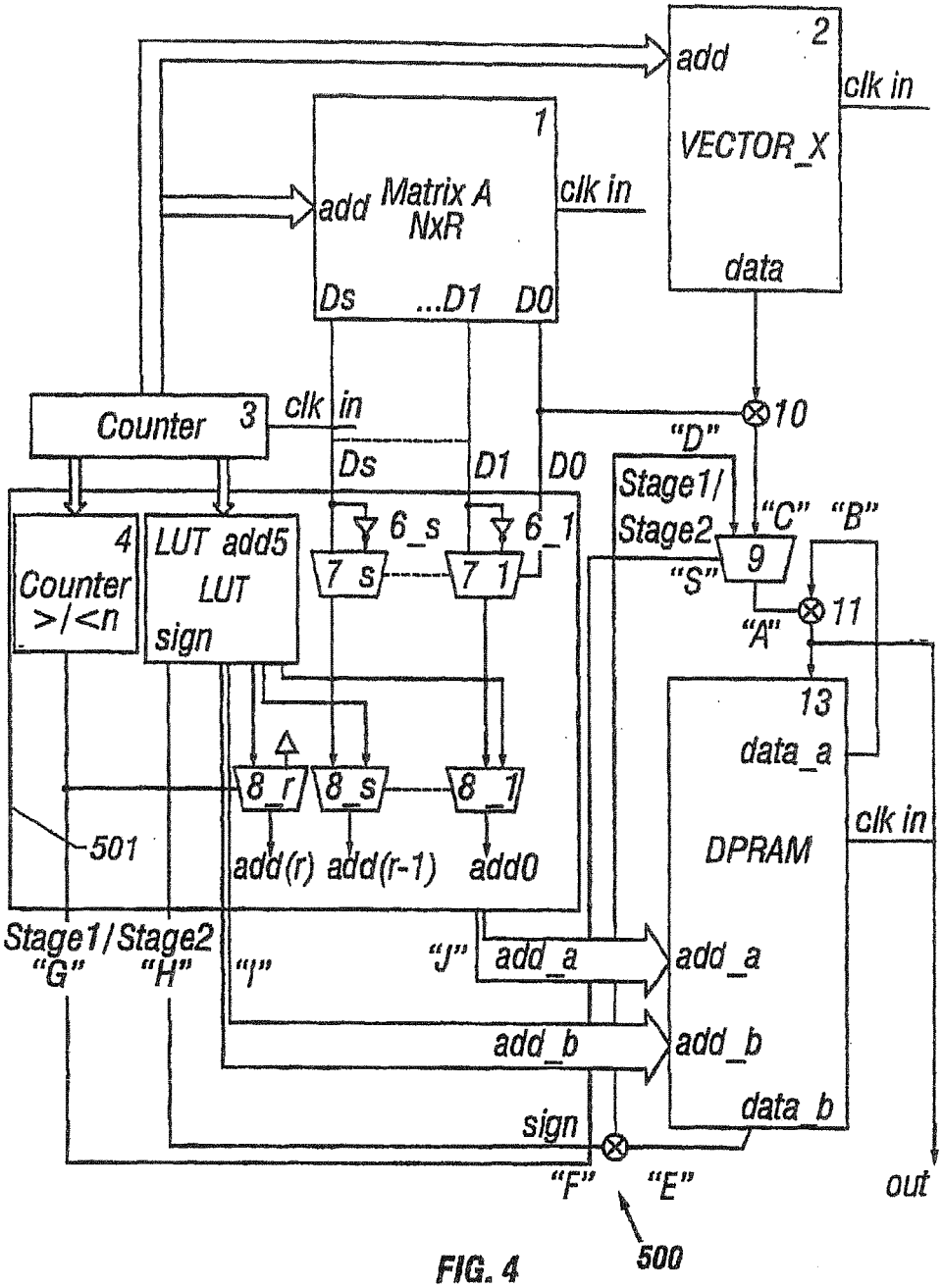

2
add
clk in
VECTOR_X
data
1
add
Matrix A
NxR
clk in
Ds
...D1
D0
Counter
3
clk in
10
"D"
Ds
D1
D0
Stage1/
Stage2
"C"
"B"
6_s
6_1
7_s
7_1
9
"S"
11
"A"
4
Counter
>/<n
LUT add5
LUT
sign
13
data_a
clk in
DPRAM
8_r
8_s
8_1
501
add(r)
add(r-1)
add0
Stage1/Stage2
"G"
"H"
"I"
"J"
add_a
add_a
add_b
add_b
data_b
sign
"F"
"E"
out
500

FIG. 4

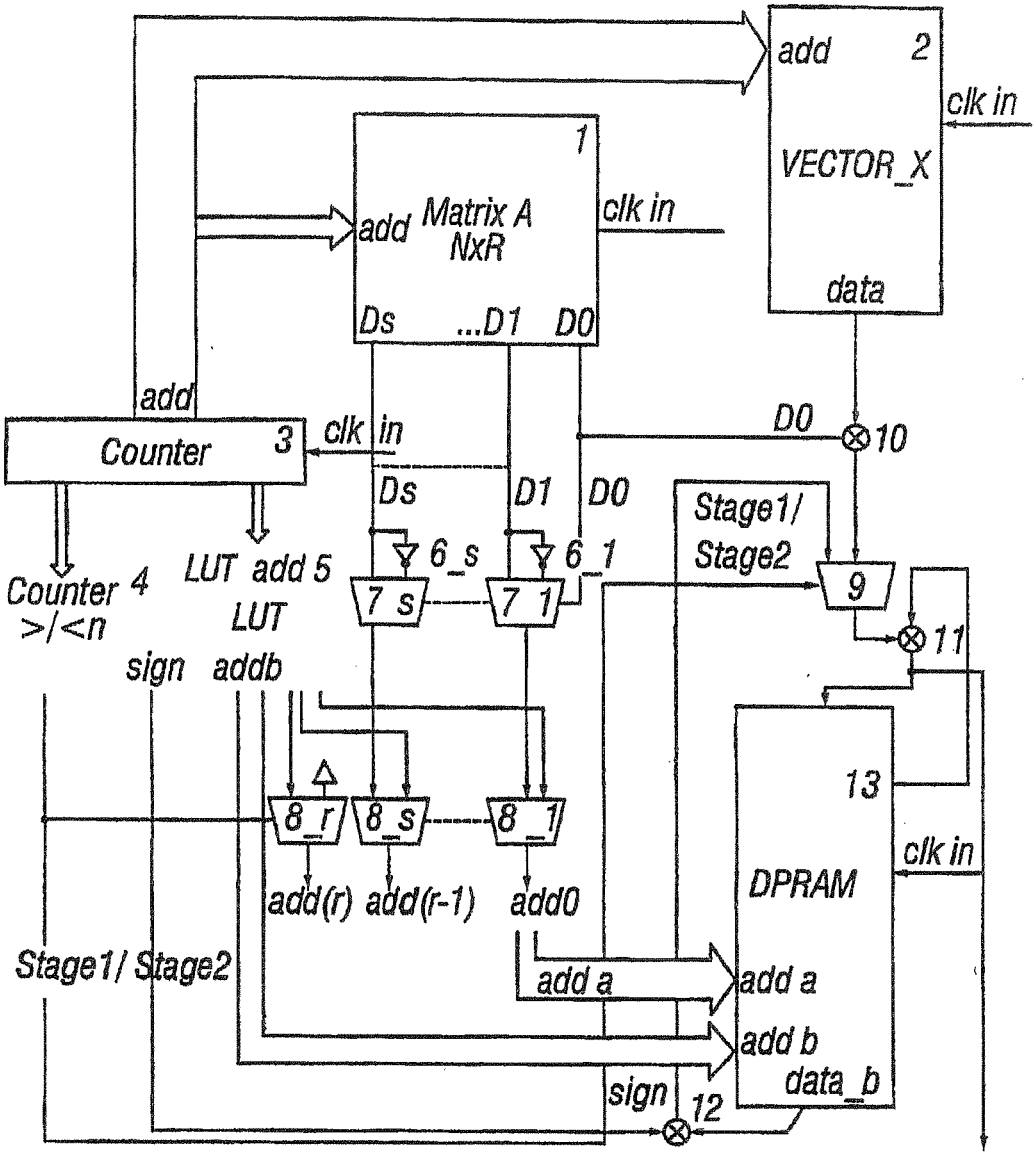

add
2
clk in
VECTOR_X
data
1
add
Matrix A
NxR
clk in
Ds
...D1
D0
add
Counter
3
clk in
D0
10
Ds
D1
D0
Stage1/
Stage2
6_s
6_1
Counter
>/<n
4
LUT add 5
LUT
7 s
7 1
9
11
sign
addb
13
8_r
8_s
8_1
clk in
DPRAM
add(r)
add(r-1)
add0
Stage1/ Stage2
add a
add a
add b
data_b
sign
12

FIG. 5