

1/12

5'-CCCAGAACGTTG[^]CATCGTAGACGAGTTTCAGC -3'
(SEQ ID NO. 1) Published reference genome & allele 1

5'-CCCAGAACGTTGCTATGCAACAAGGGACCATCGTAGACGAGTTTCAGC-3'
(SEQ ID NO 2) allele 2

5'-CCCAGAACGTTGGCTATGCAGGAAGGGACCATCGTAGACGAGTTTCAGC -3'
(SEQ ID NO 3) allele 3

5'-TTGCTATGCAGGAAGGGACATCG -3'
(SEQ ID NO 4) Sequence read

5'-CCCAGAACGTTG -3'
(SEQ ID NO 5) Node 1

5'-CATCGTAGACGAGTTTCAGCATT -3'
(SEQ ID NO 6) Node 2

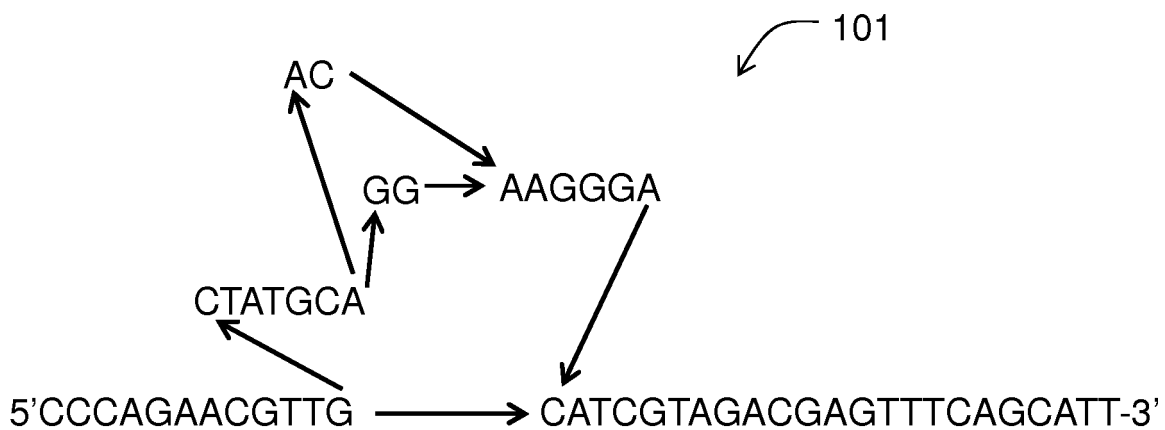


FIG. 1

2/12

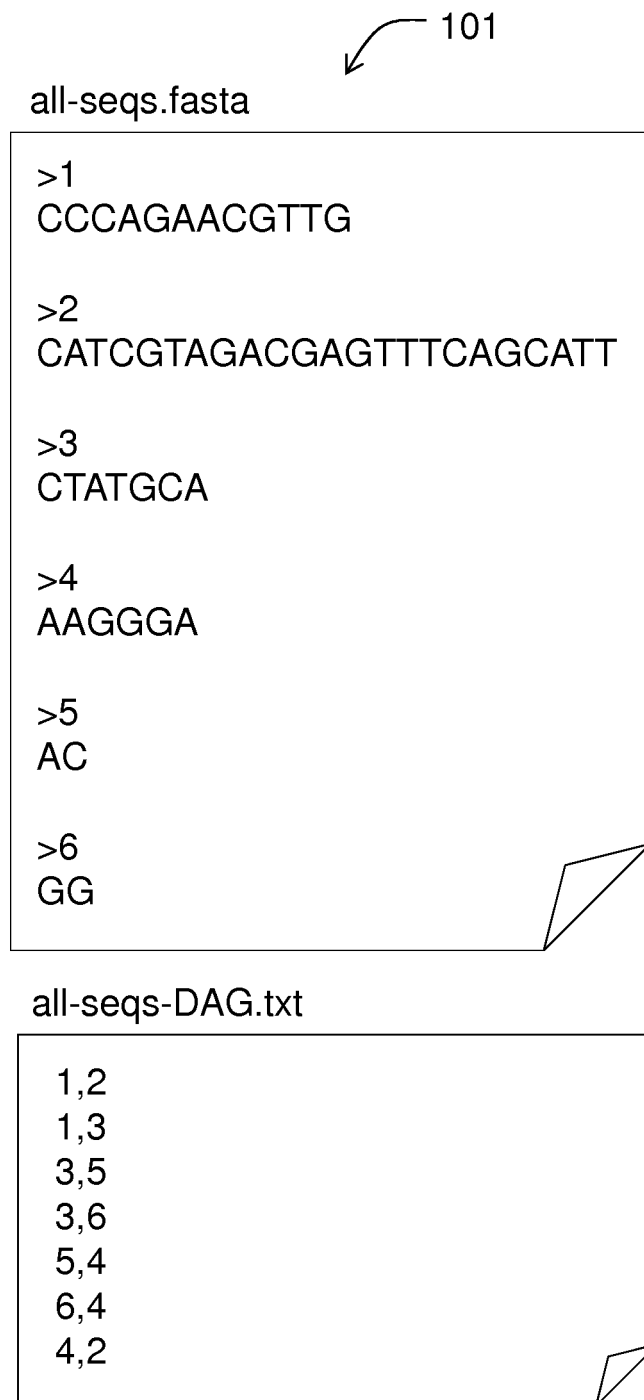
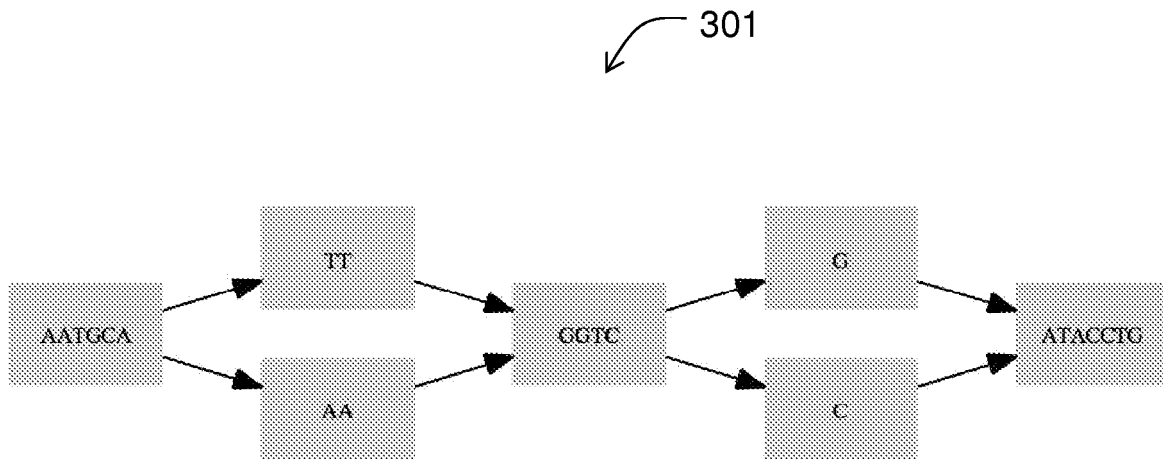


FIG. 2

3/12



5'-AATGCATTGGTCGATACCTG-3'
(SEQ ID NO 7)

5'-AATGCAAAGGTCGATACCTG-3'
(SEQ ID NO 8)

5'-AATGCATTGGTCCATACCTG-3'
(SEQ ID NO 9)

5'-AATGCAAAGGTCCATACCTG-3'
(SEQ ID NO 10)

FIG. 3

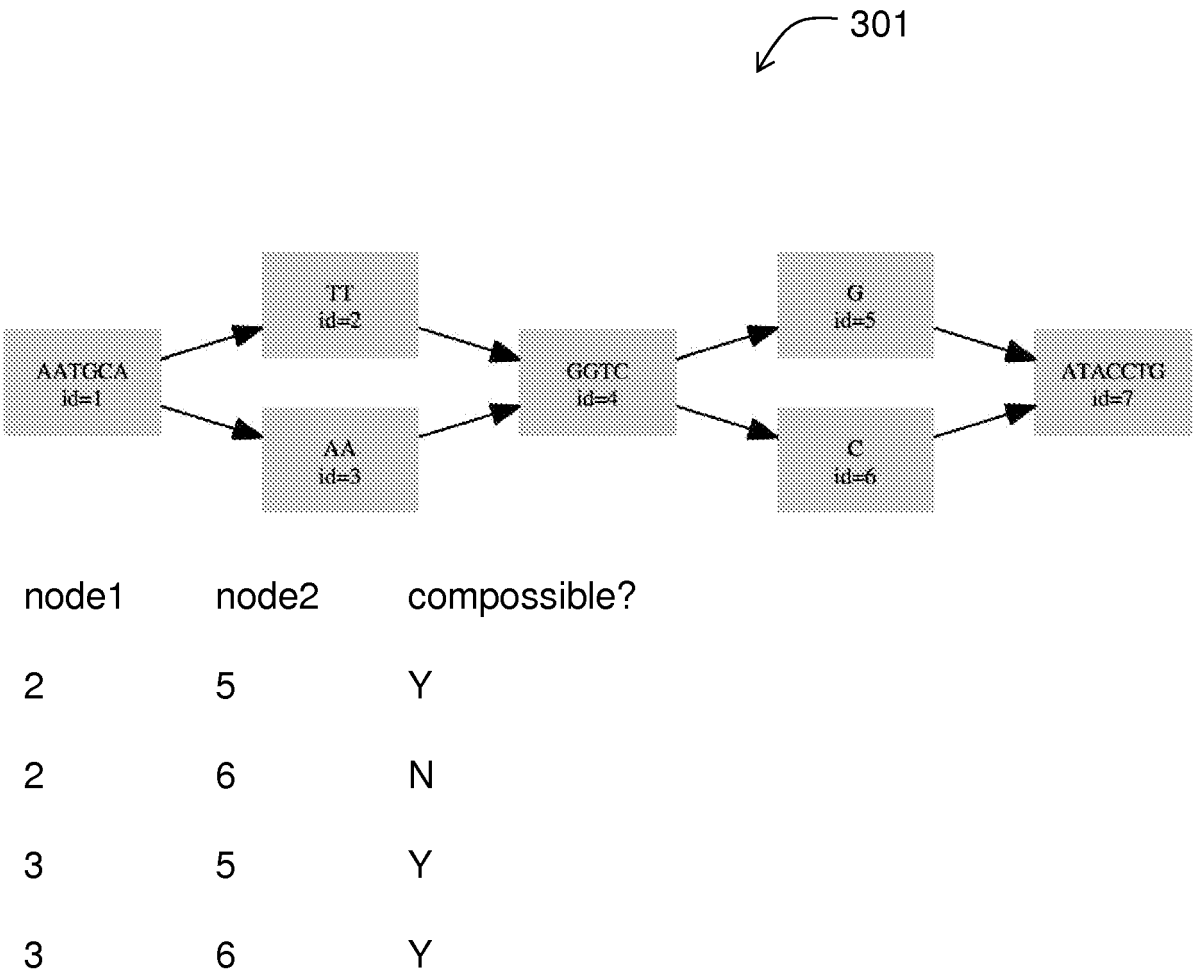


FIG. 4

5/12

TTGGATATGGG (SEQ ID NO. 11) ATCGAA (read)
TTGGATCGAATTATGGG (SEQ ID NO. 12)



AT CGAA (read)
TTGGAT → CGAATT → ATGGG (SEQ ID NO. 12)
TTGGAT → ATGGG (SEQ ID NO. 11)

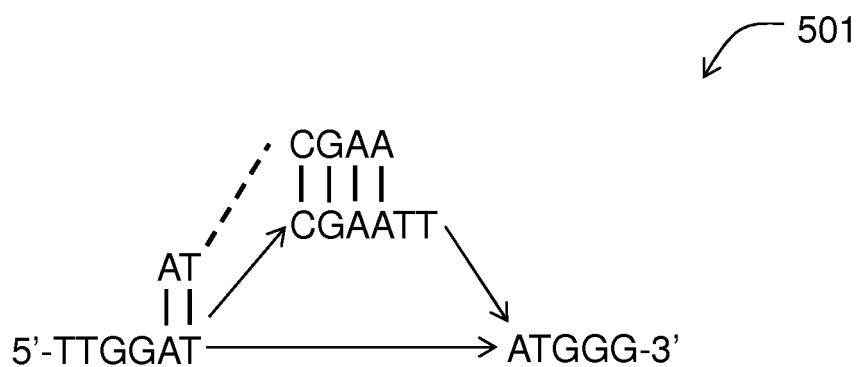


FIG. 5

Left Matrix: Evolution from 'A' to Mixture

		T	T	G	G	A	T
		0	0	0	0	0	0
A	0	0	0	0	0	10	0
T	0	10	10	0	0	0	20
C	0	0	0	0	0	0	10
G	0	0	0	10	10	0	0
A	0	0	0	0	0	20	10
A	0	0	0	0	0	10	10

Right Matrix: Evolution from Mixture to 'A'

		C	G	A	A	T	T
		0	0	0	0	0	0
A	0	0	0	10	10	0	0
T	20	10	0	0	0	20	10
C	10	30	20	10	0	10	10
G	0	20	40	30	20	10	0
A	10	10	30	50	40	30	20
A	10	0	20	40	60	50	40

FIG. 6

7/12

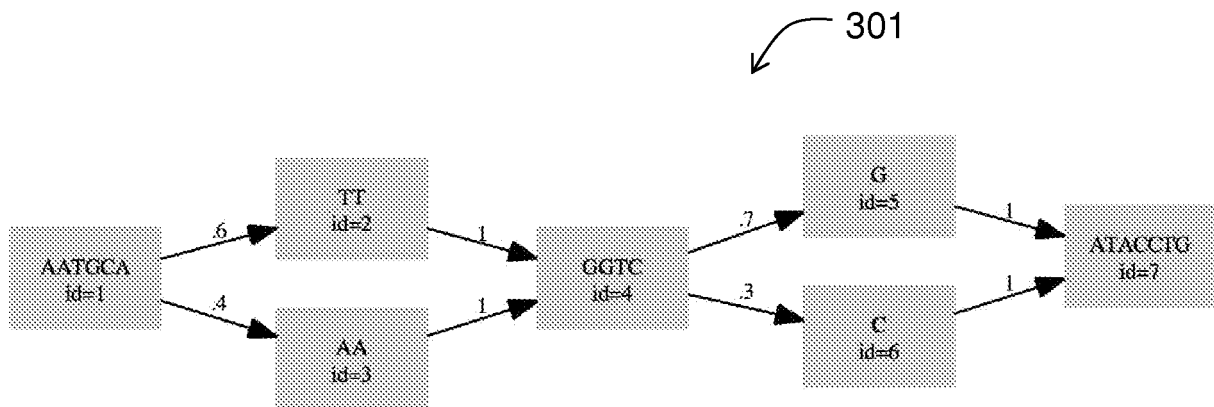


FIG. 7

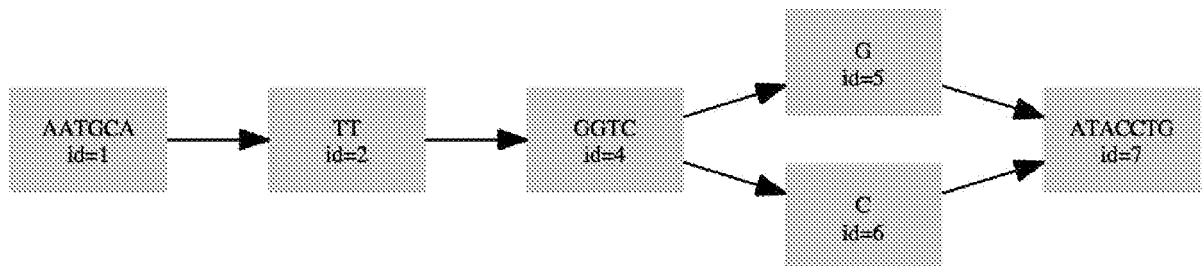


FIG. 8



FIG. 9

8/12

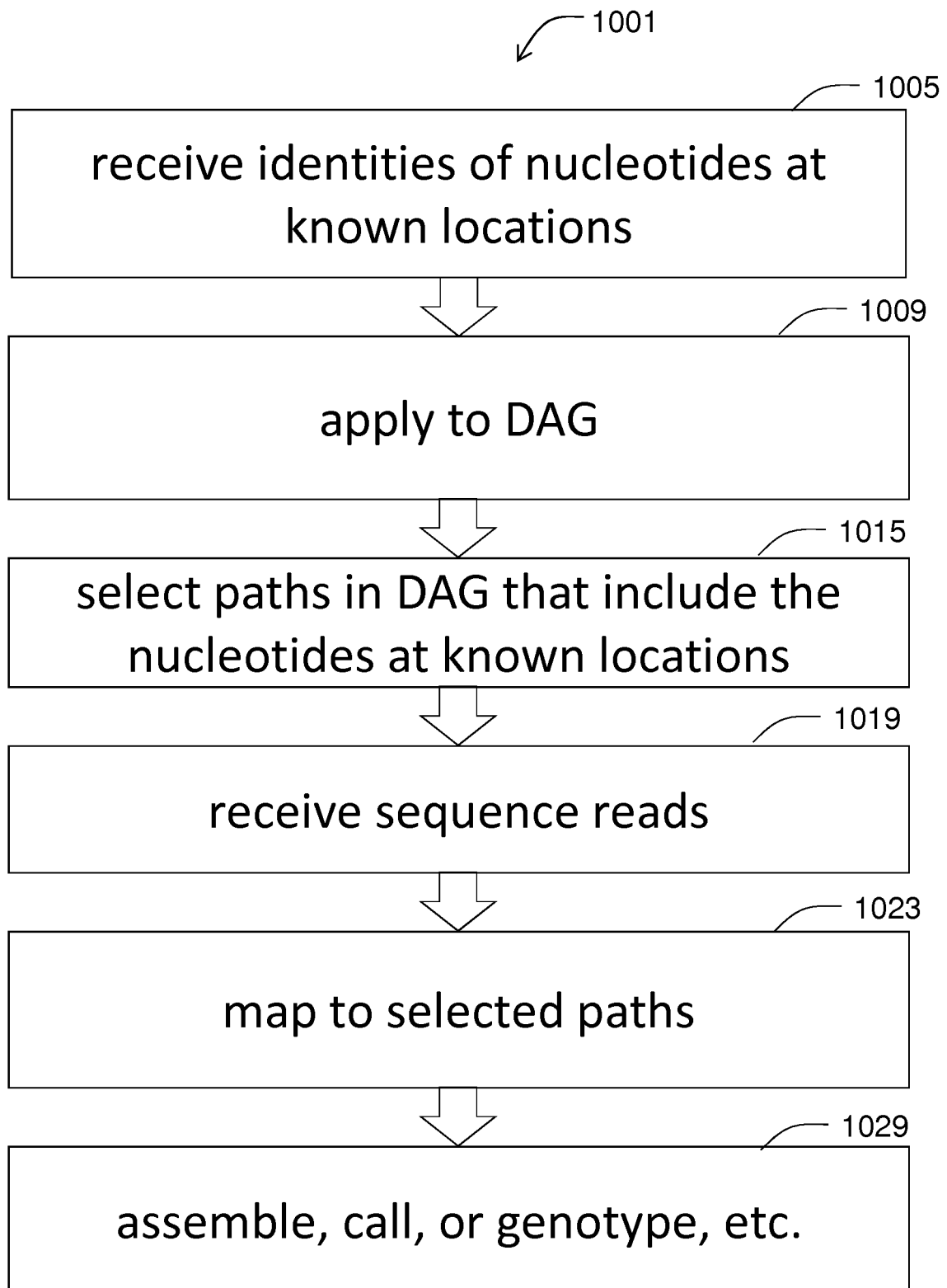


FIG. 10

9/12

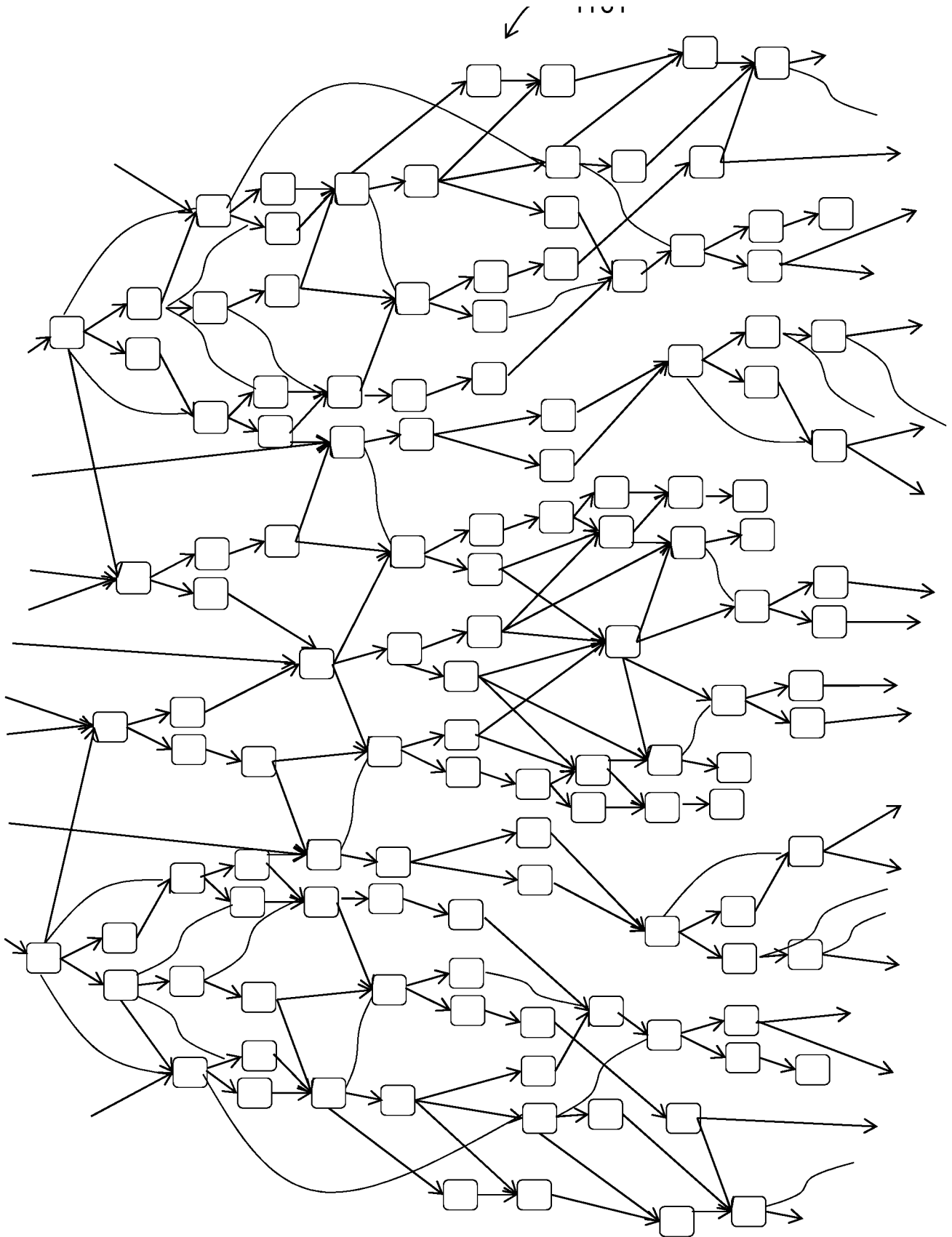


FIG. 11

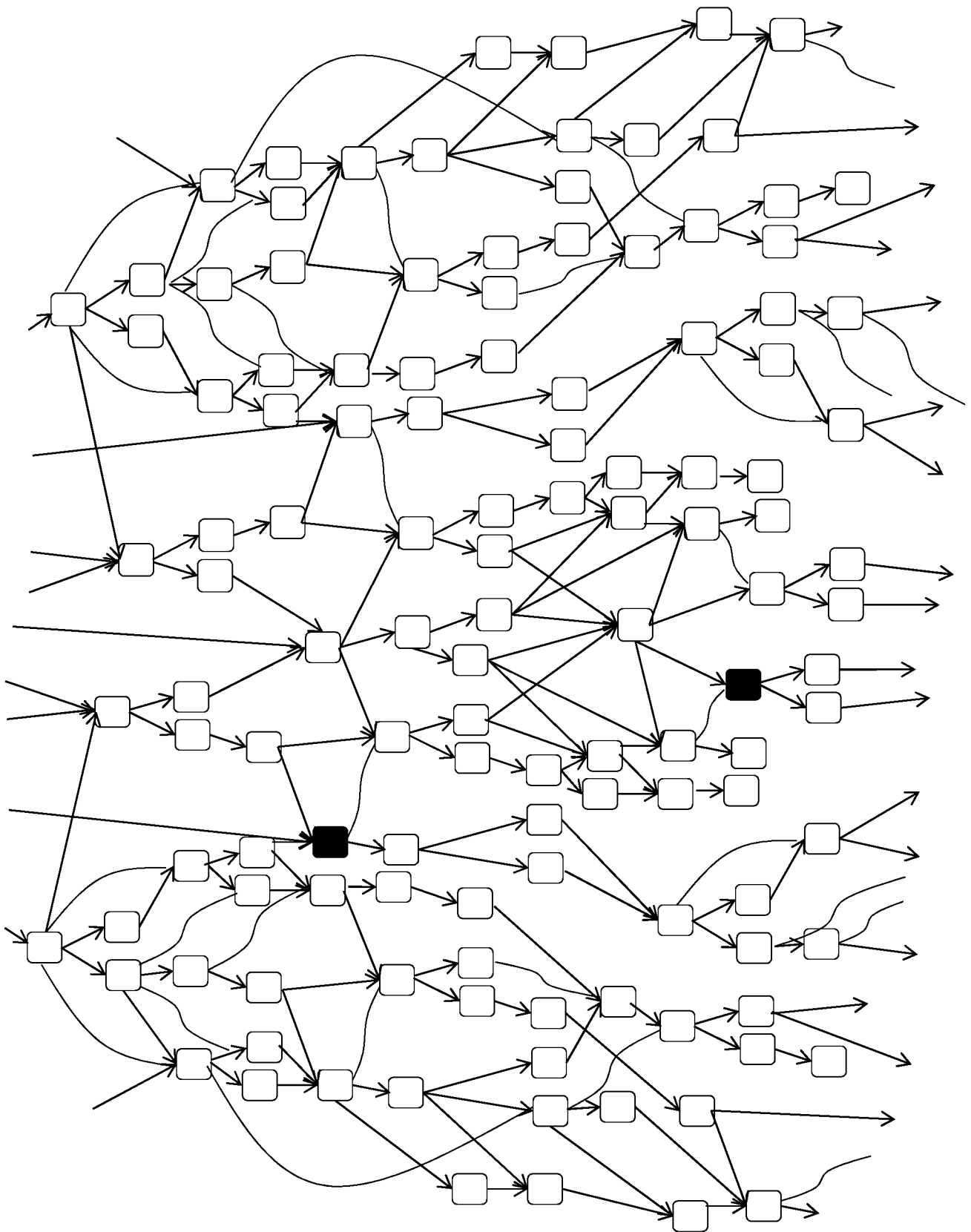
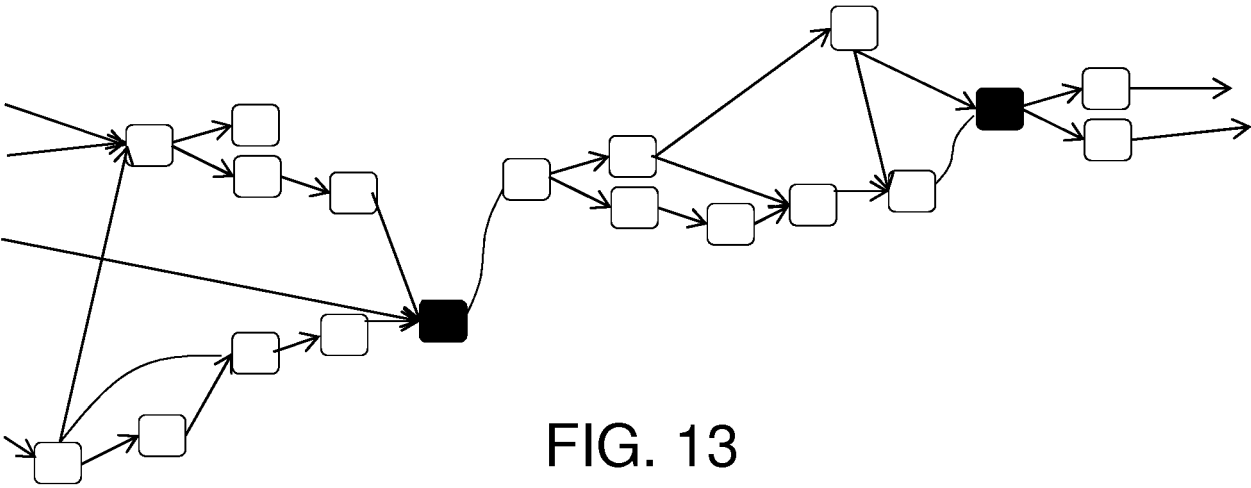


FIG. 12



12/12

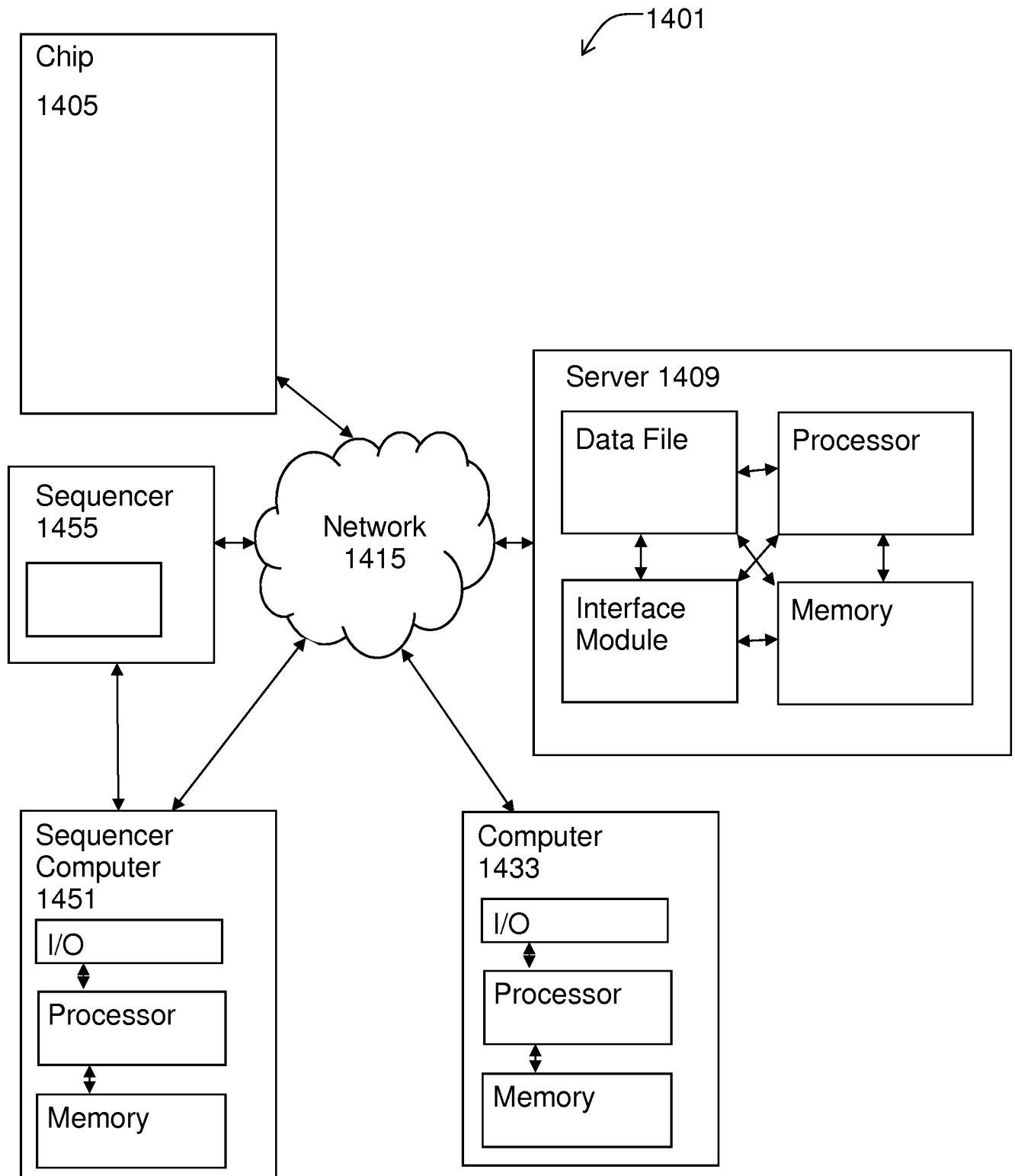


FIG. 14