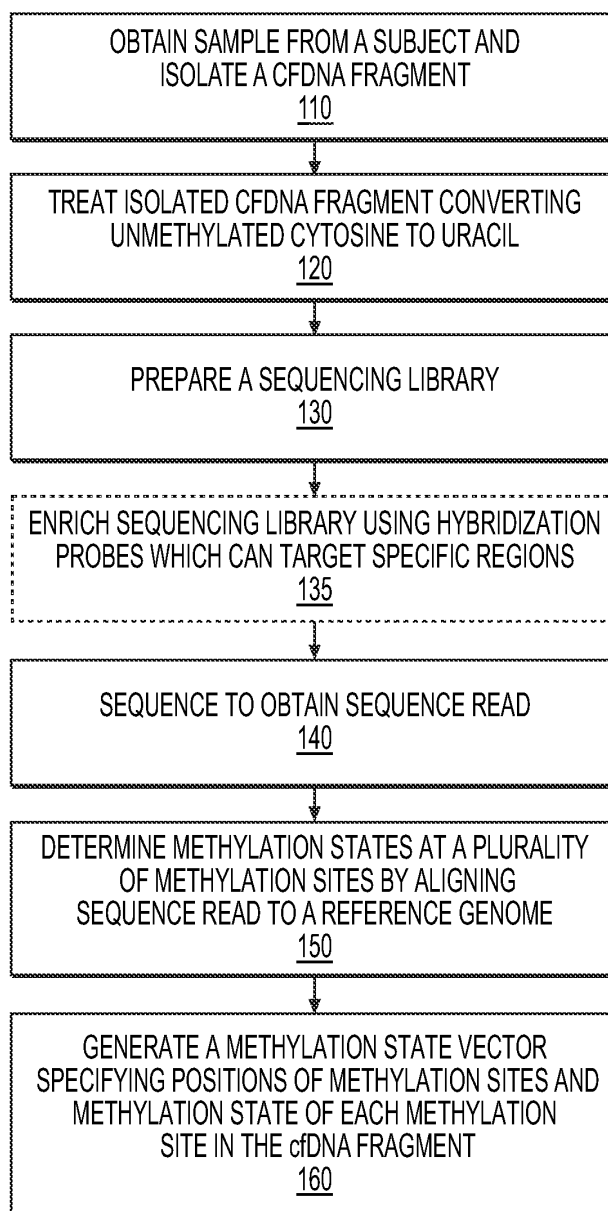


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GENERATE METHYLATION STATE VECTOR FROM
CELL-FREE (CF) DNA FRAGMENT IN SAMPLE

100**FIGURE 1**

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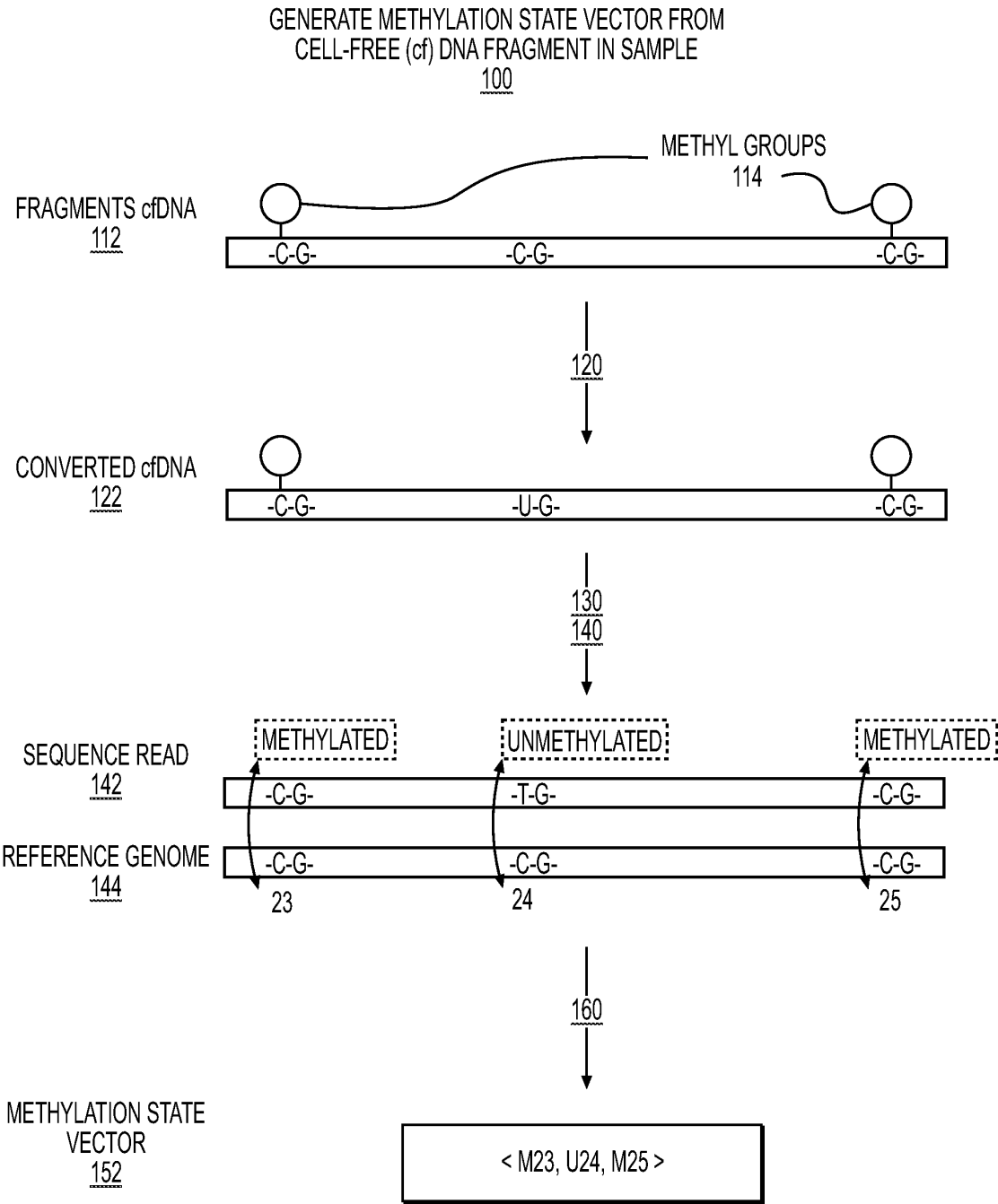
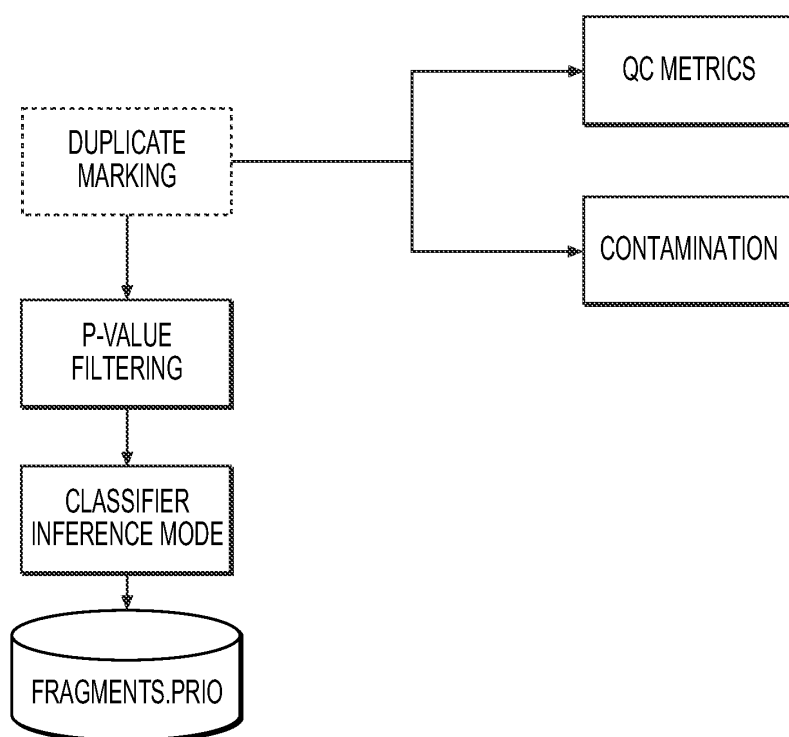


FIGURE 2

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**FIGURE 3**

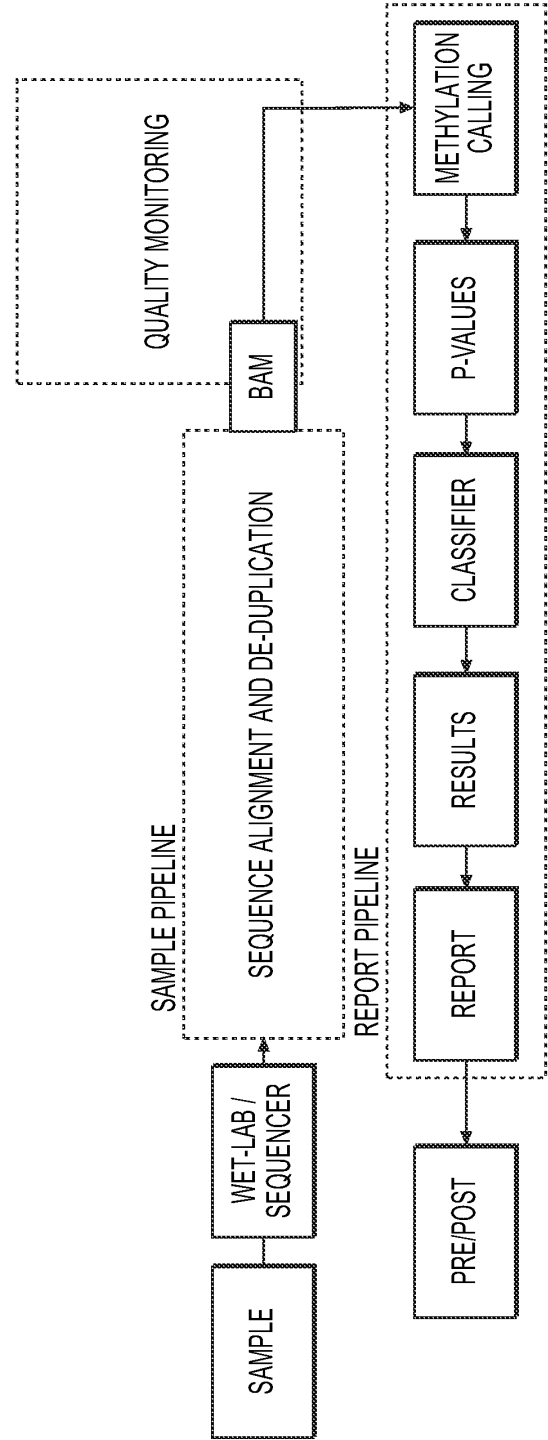


FIGURE 4

500

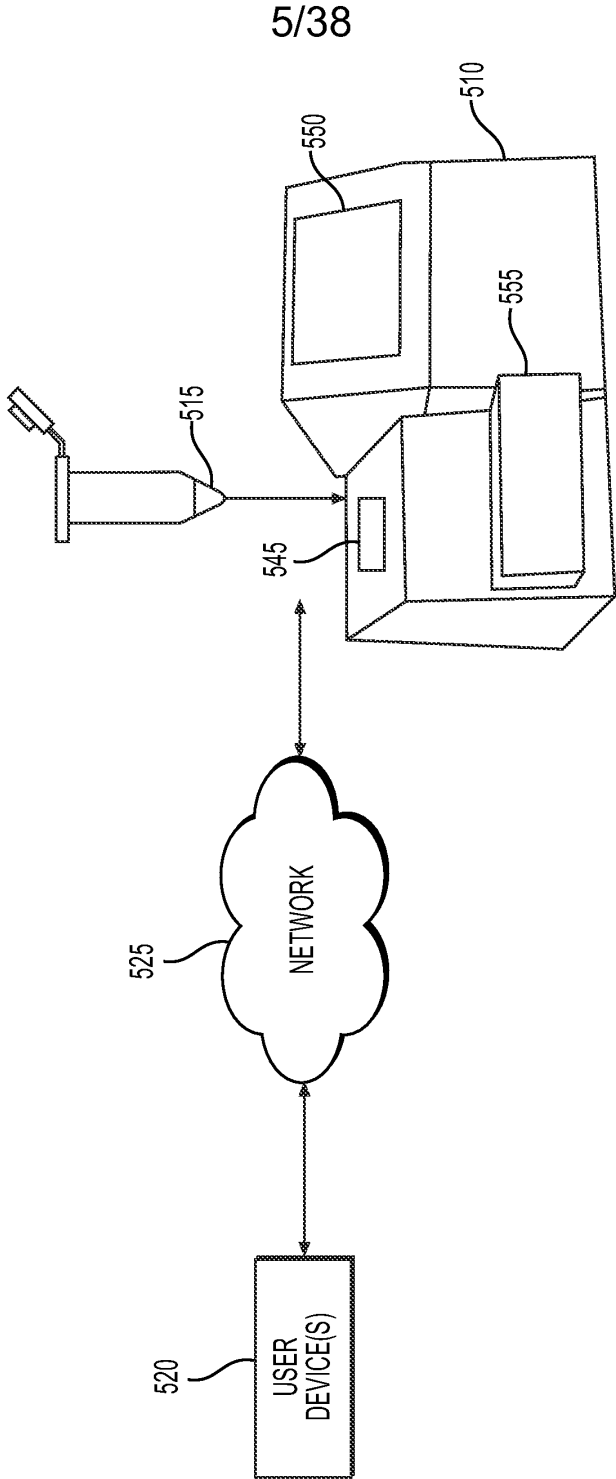


FIGURE 5A

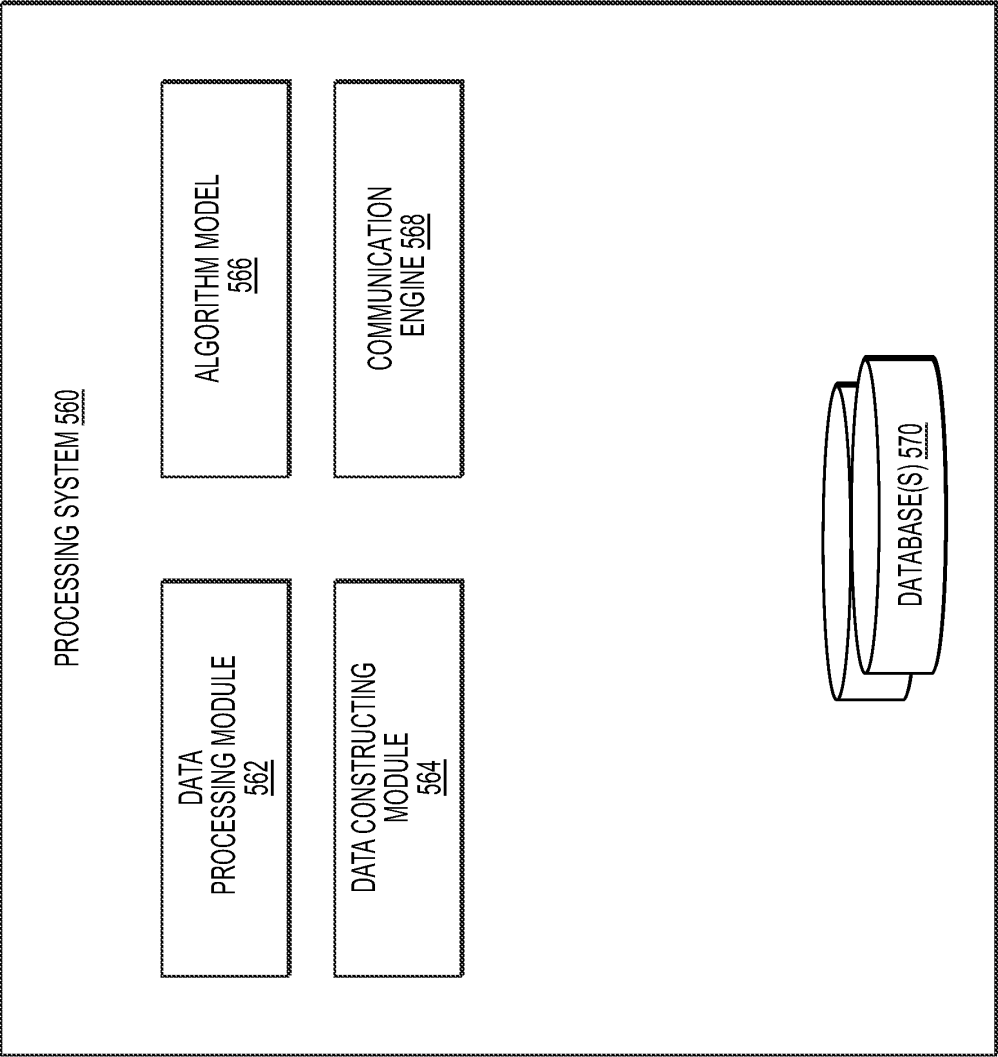
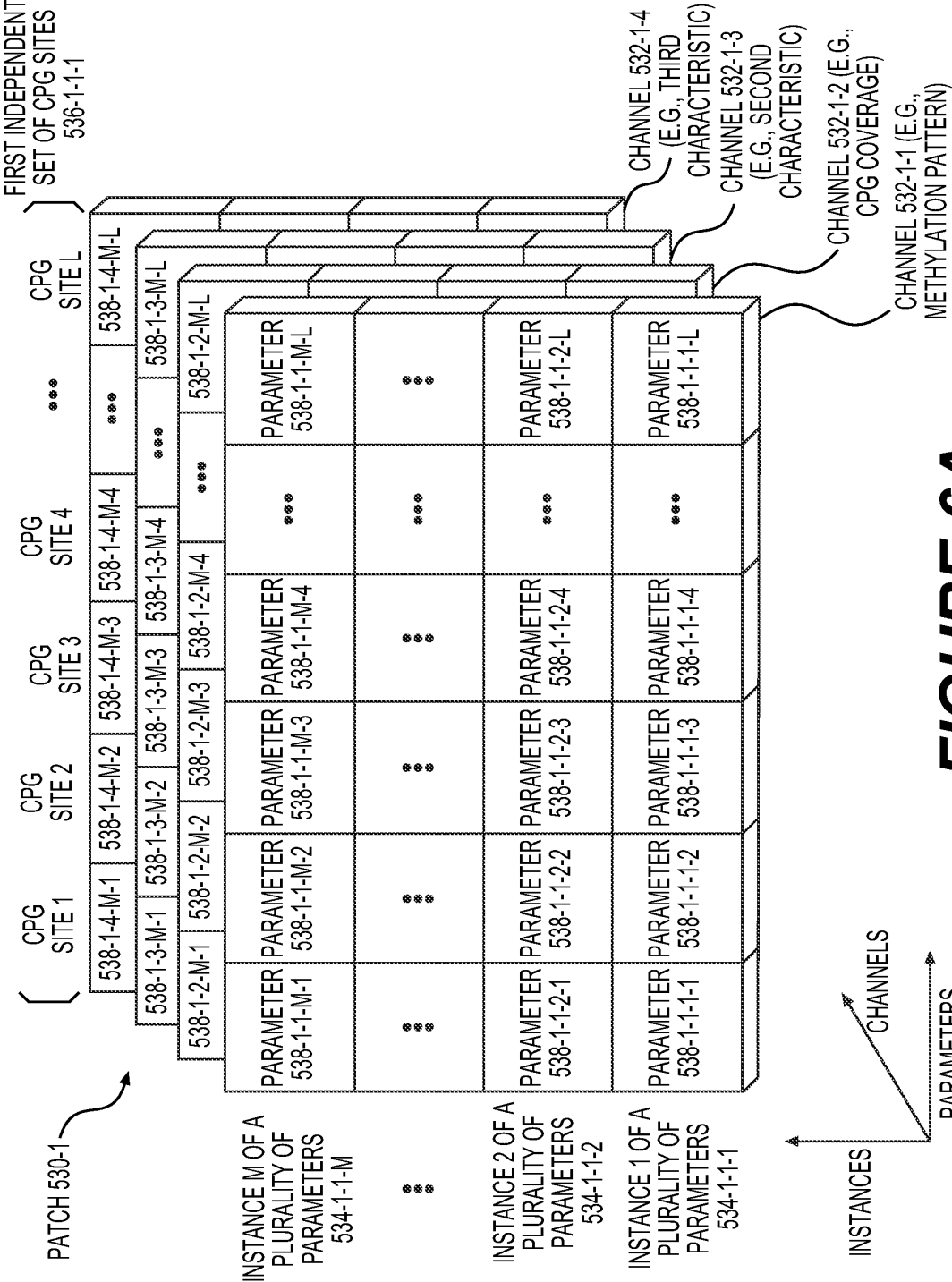


FIGURE 5B



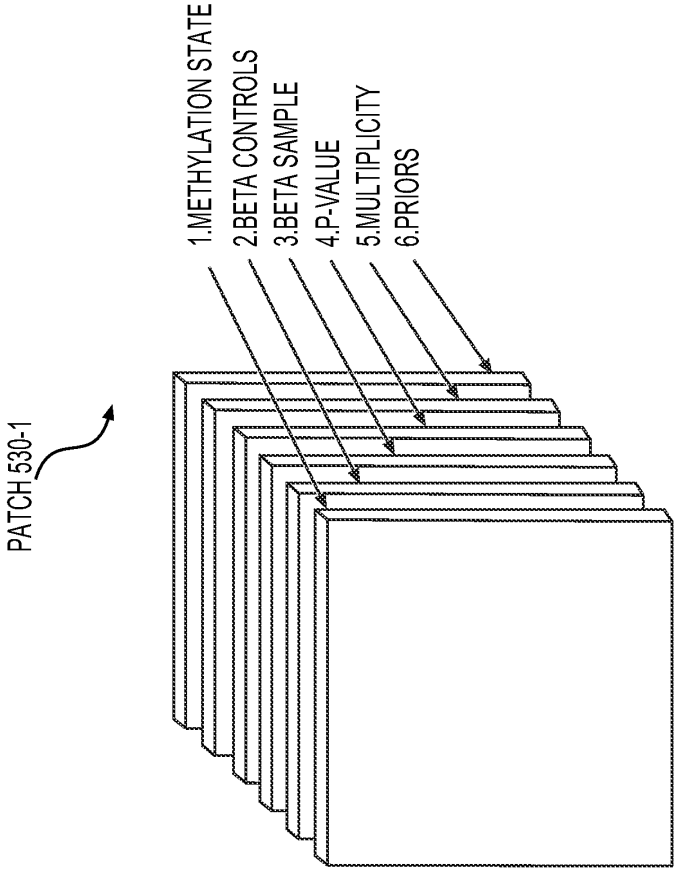


FIGURE 6B

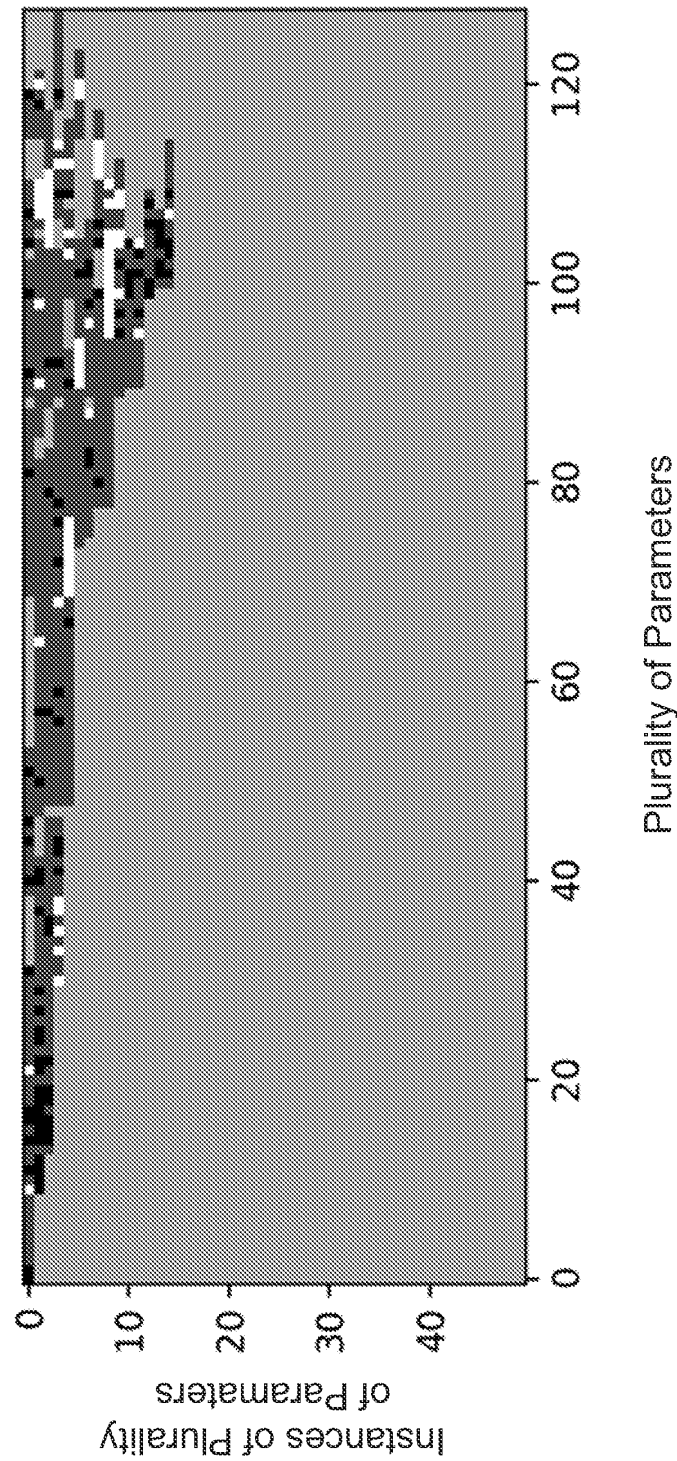
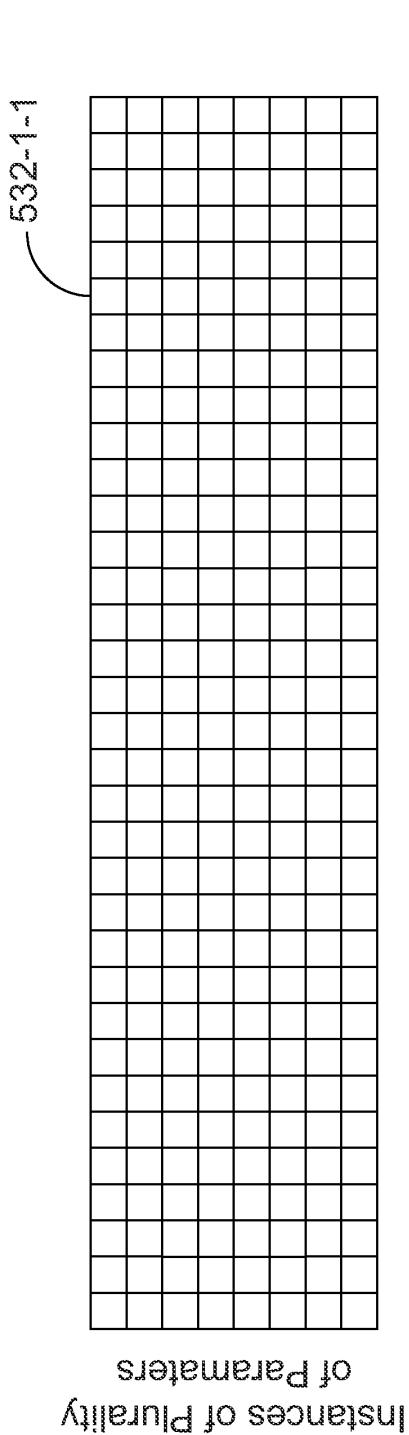
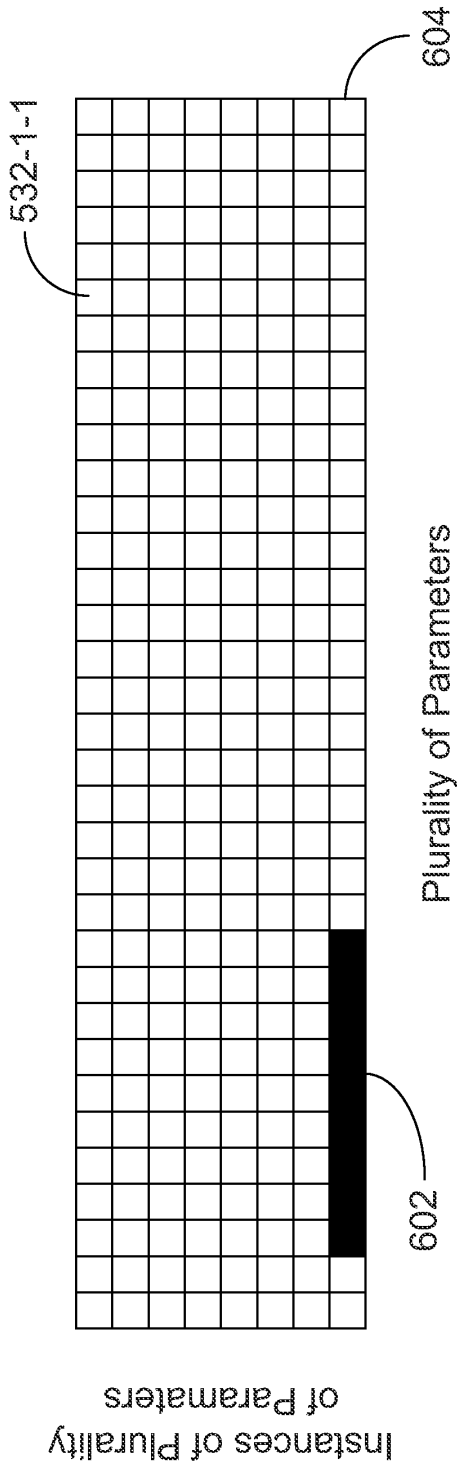


FIGURE 6C



Plurality of Parameters
FIGURE 6D



Plurality of Parameters
FIGURE 6E

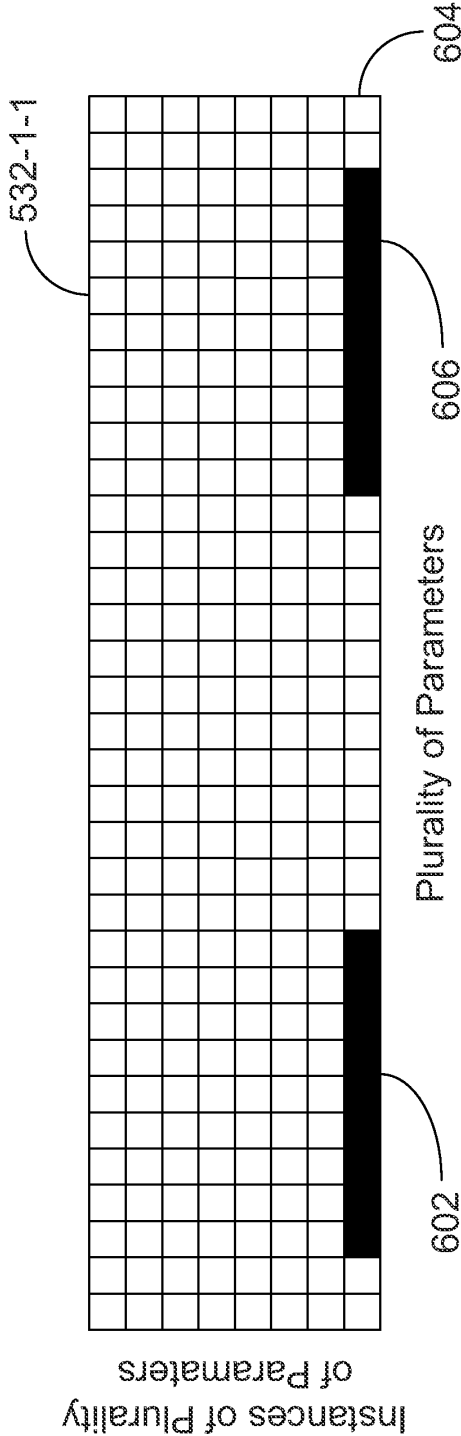


FIGURE 6F

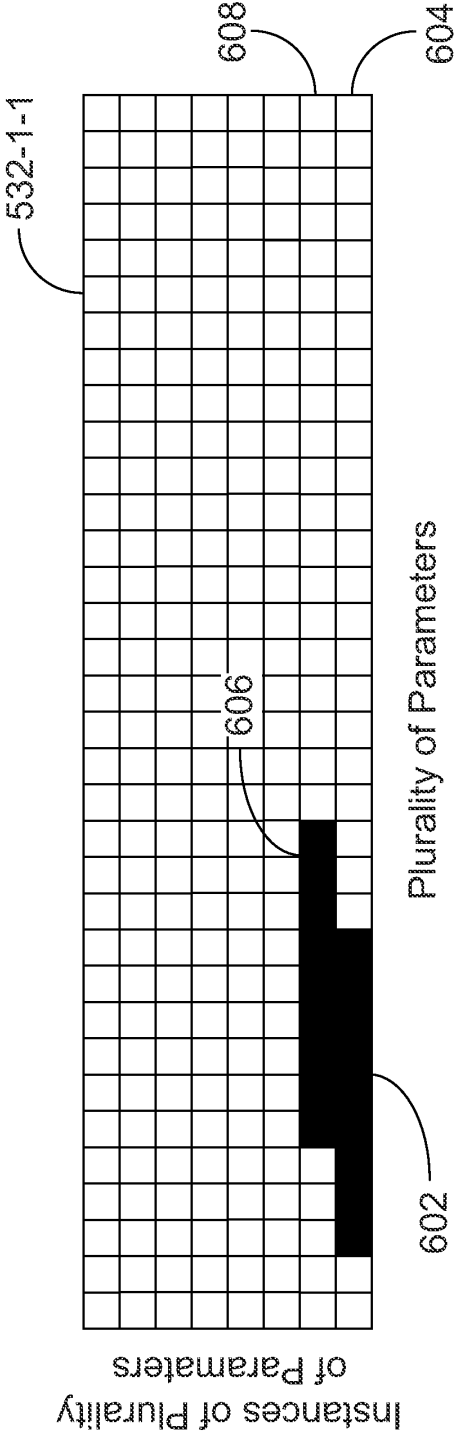


FIGURE 6G

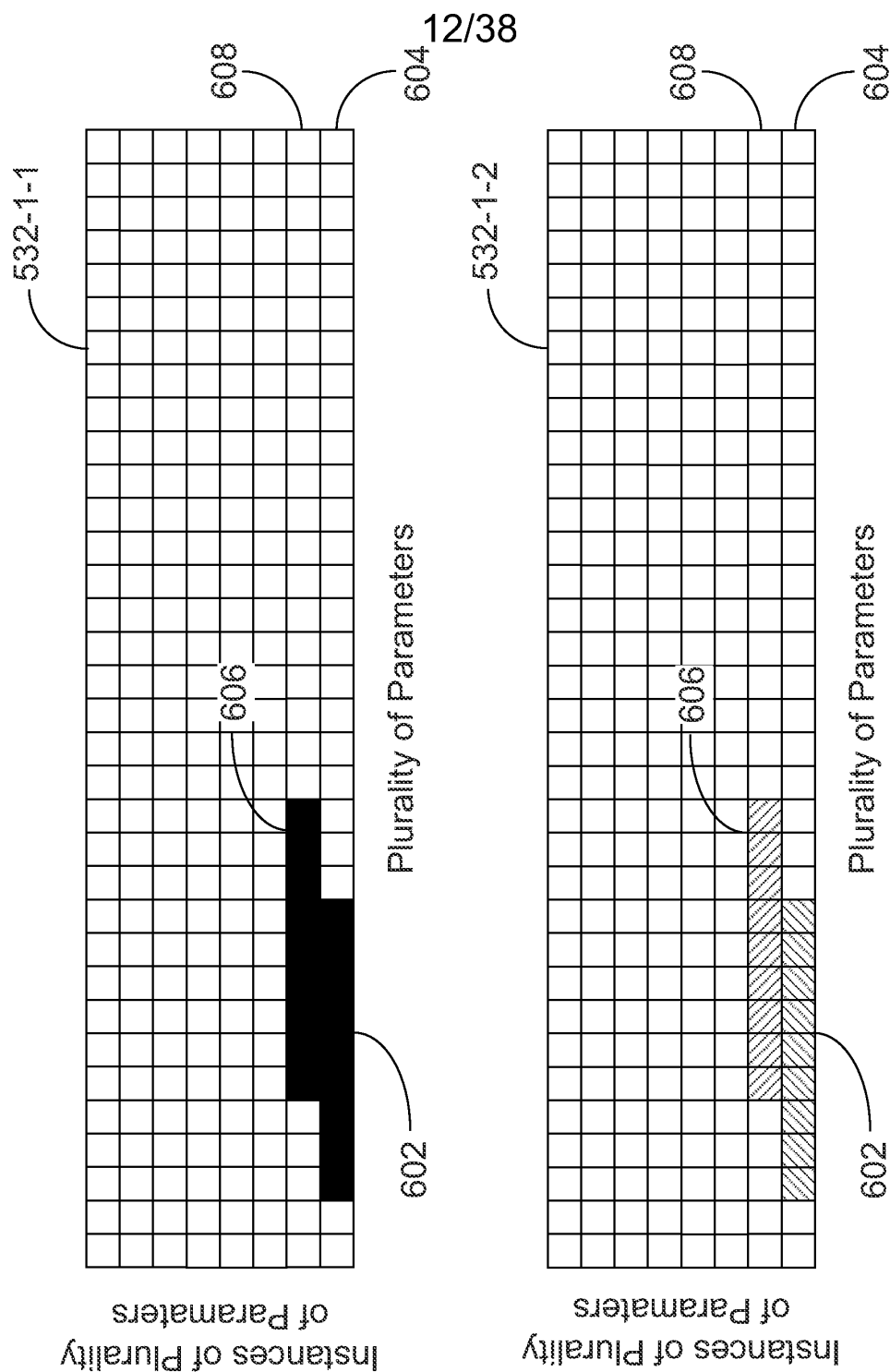


FIGURE 6H

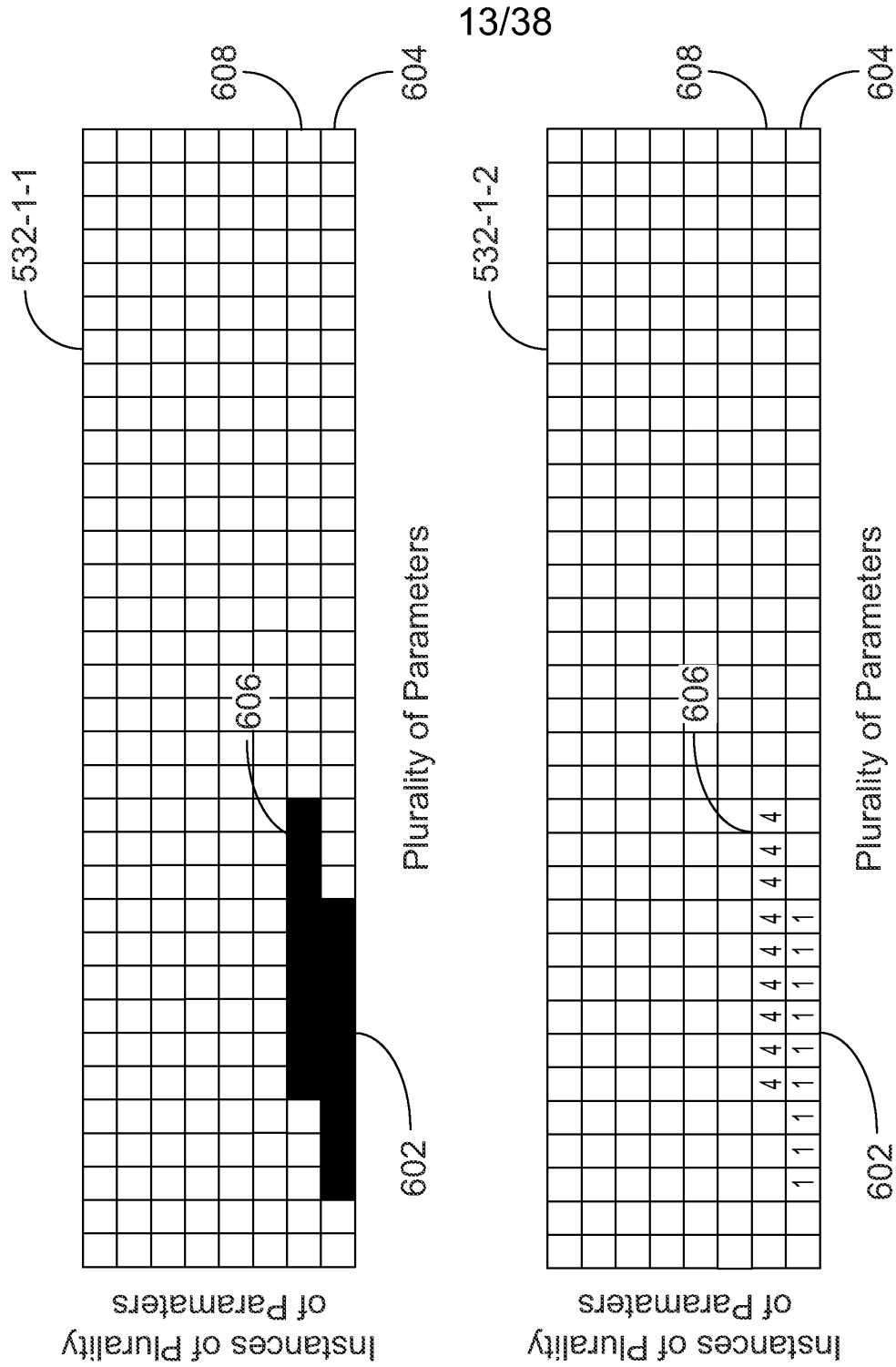
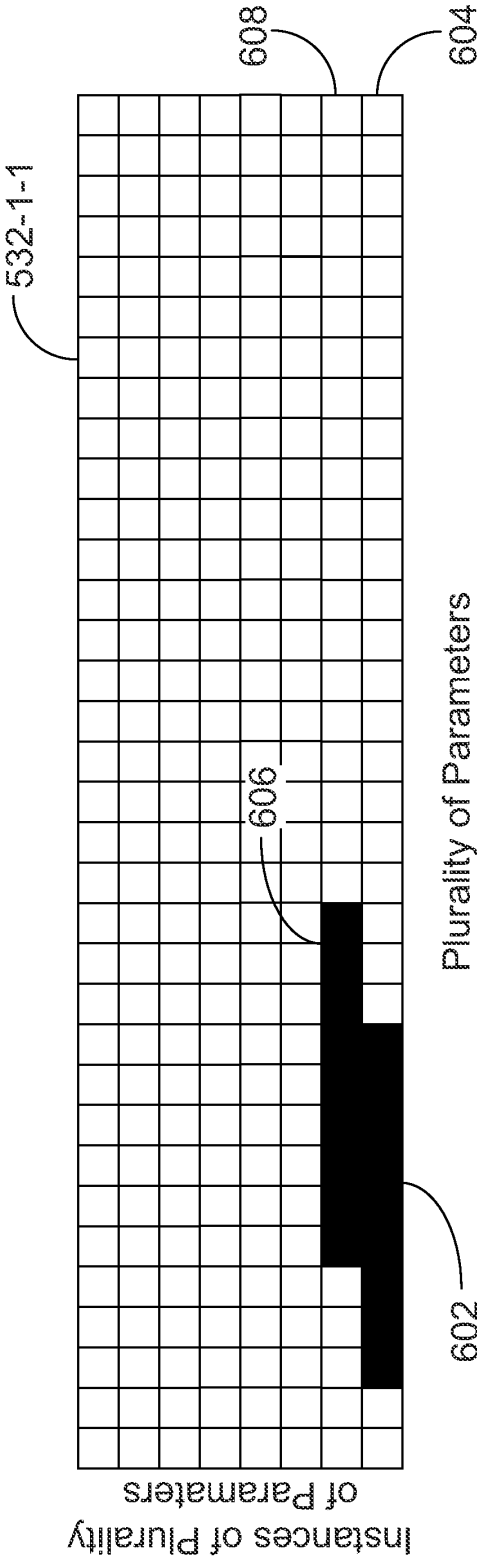


FIGURE 6I



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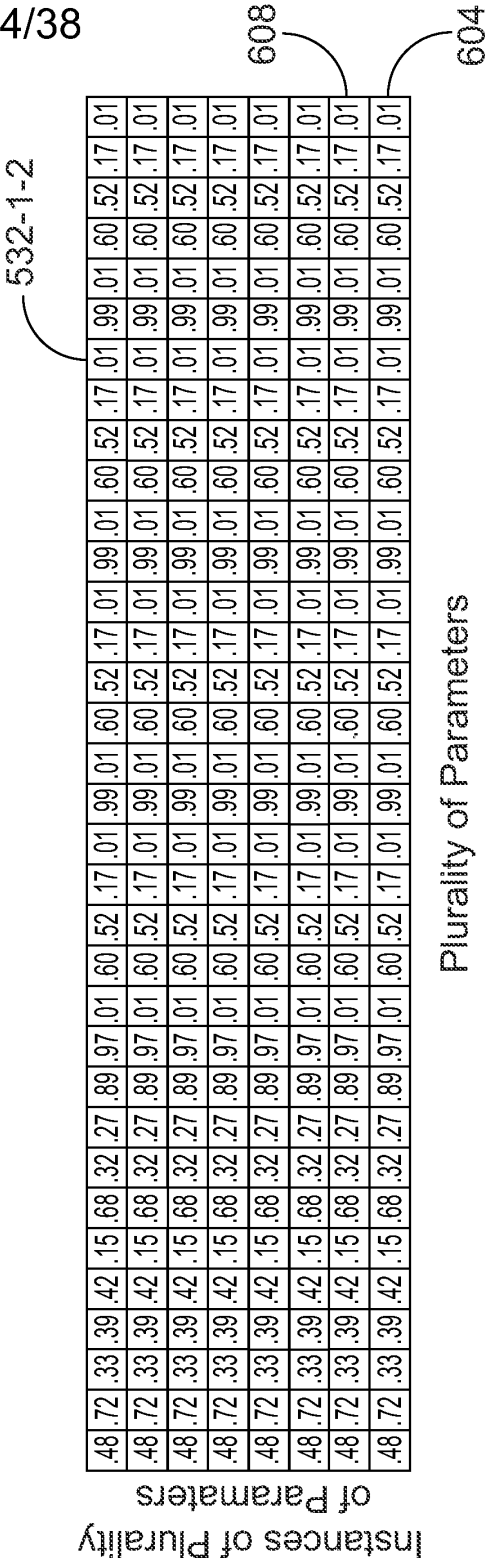


FIGURE 6J

Instances of Plurality of Parameters

532-1-2

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608

604

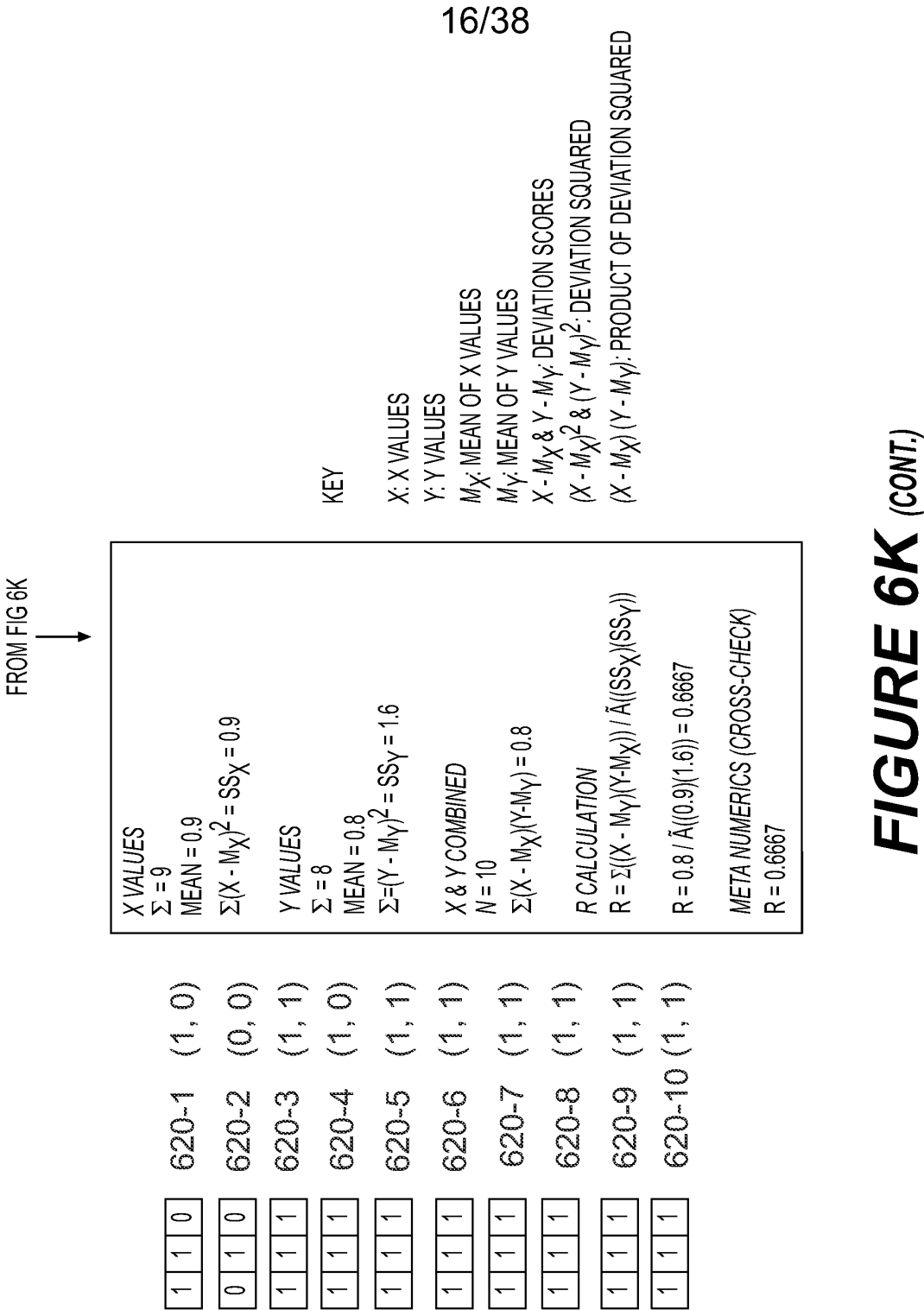
610

Plurality of Parameters

.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01
.48	.72	.33	.39	.42	.15	.67	.32	.27	.89	.97	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01	.99	.01	.60	.52	.17	.01

FIGURE 6K

TO FIG 6K (CONT.)



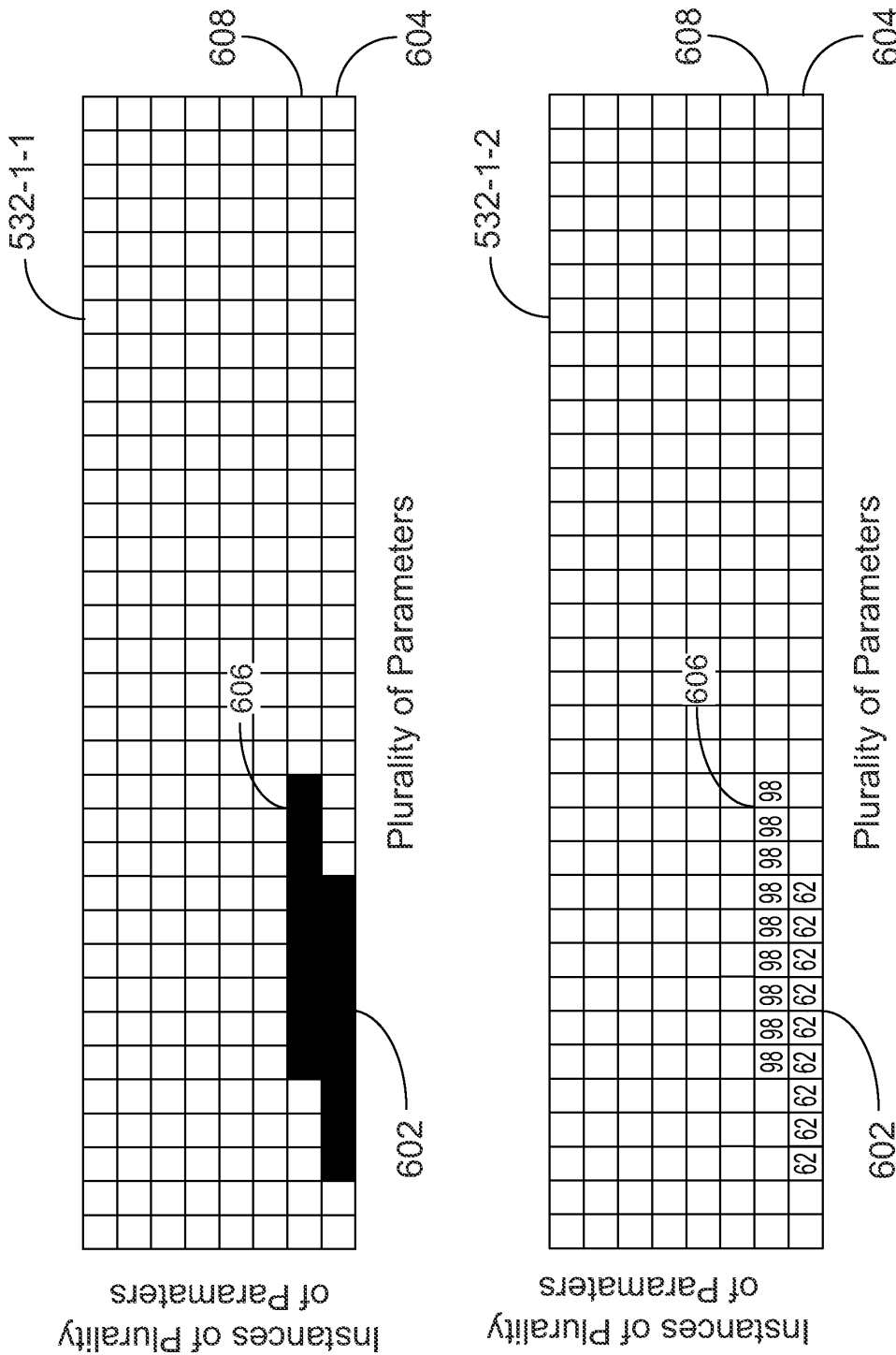


FIGURE 6L

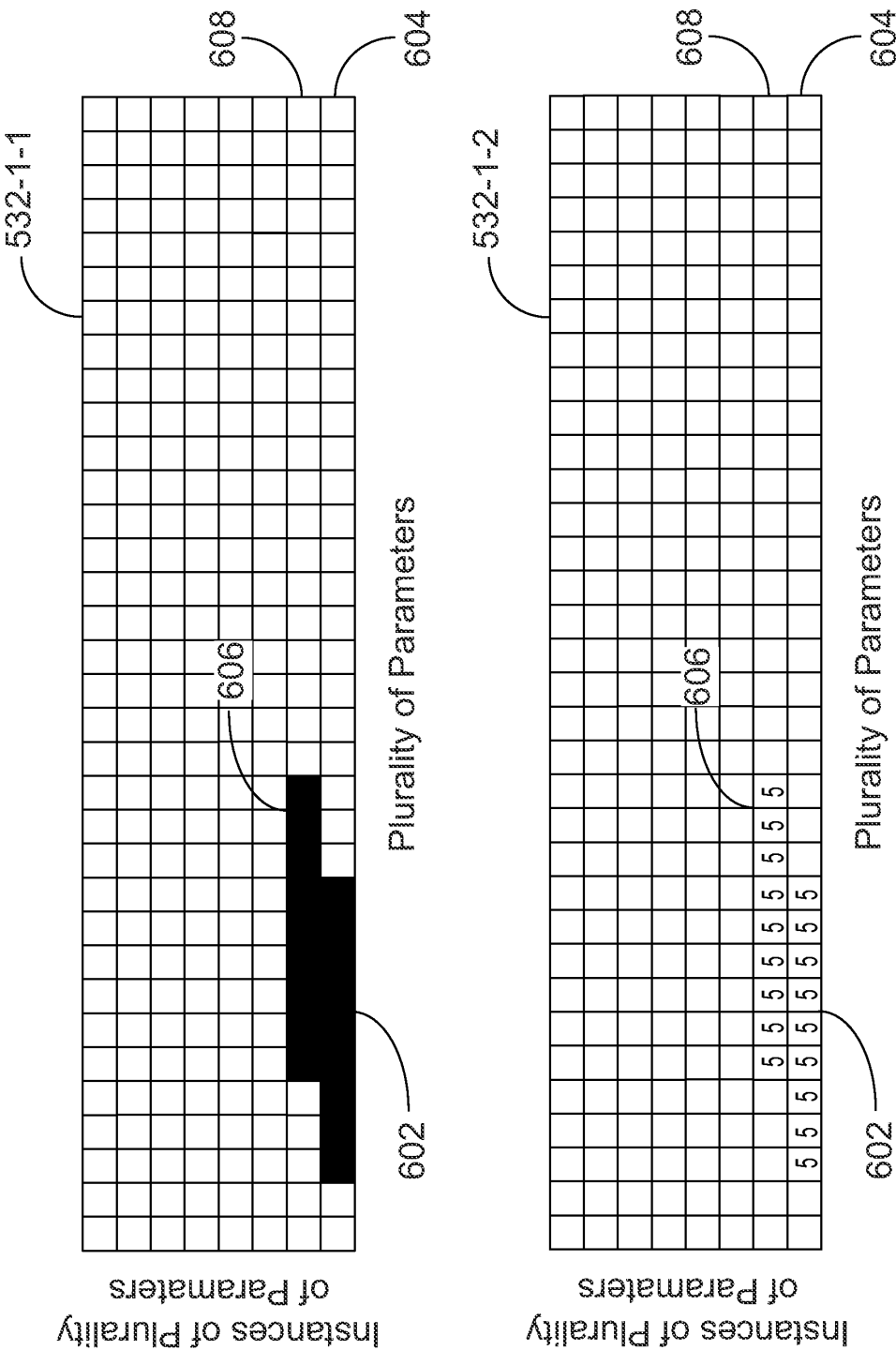


FIGURE 6M

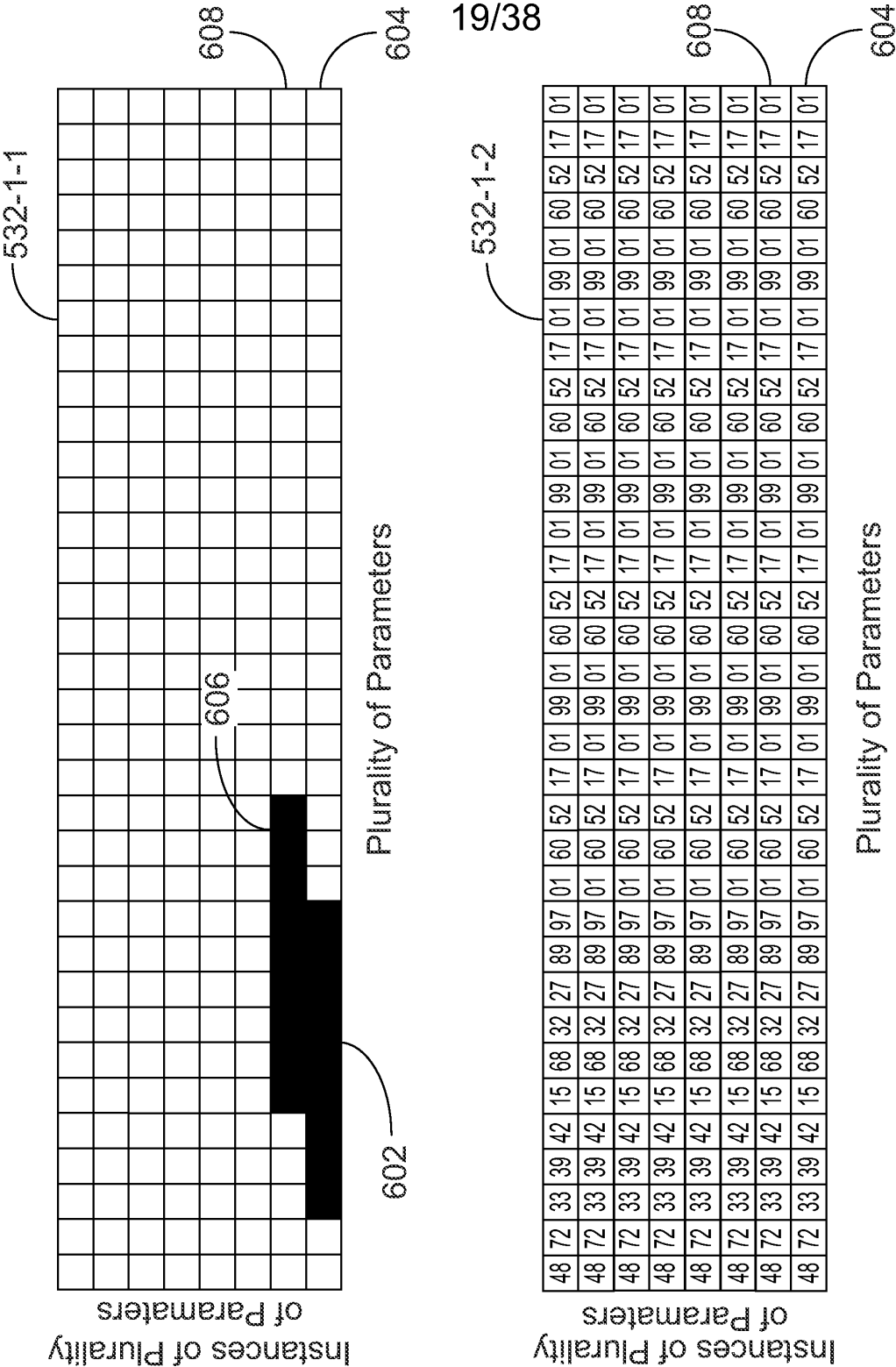


FIGURE 6N

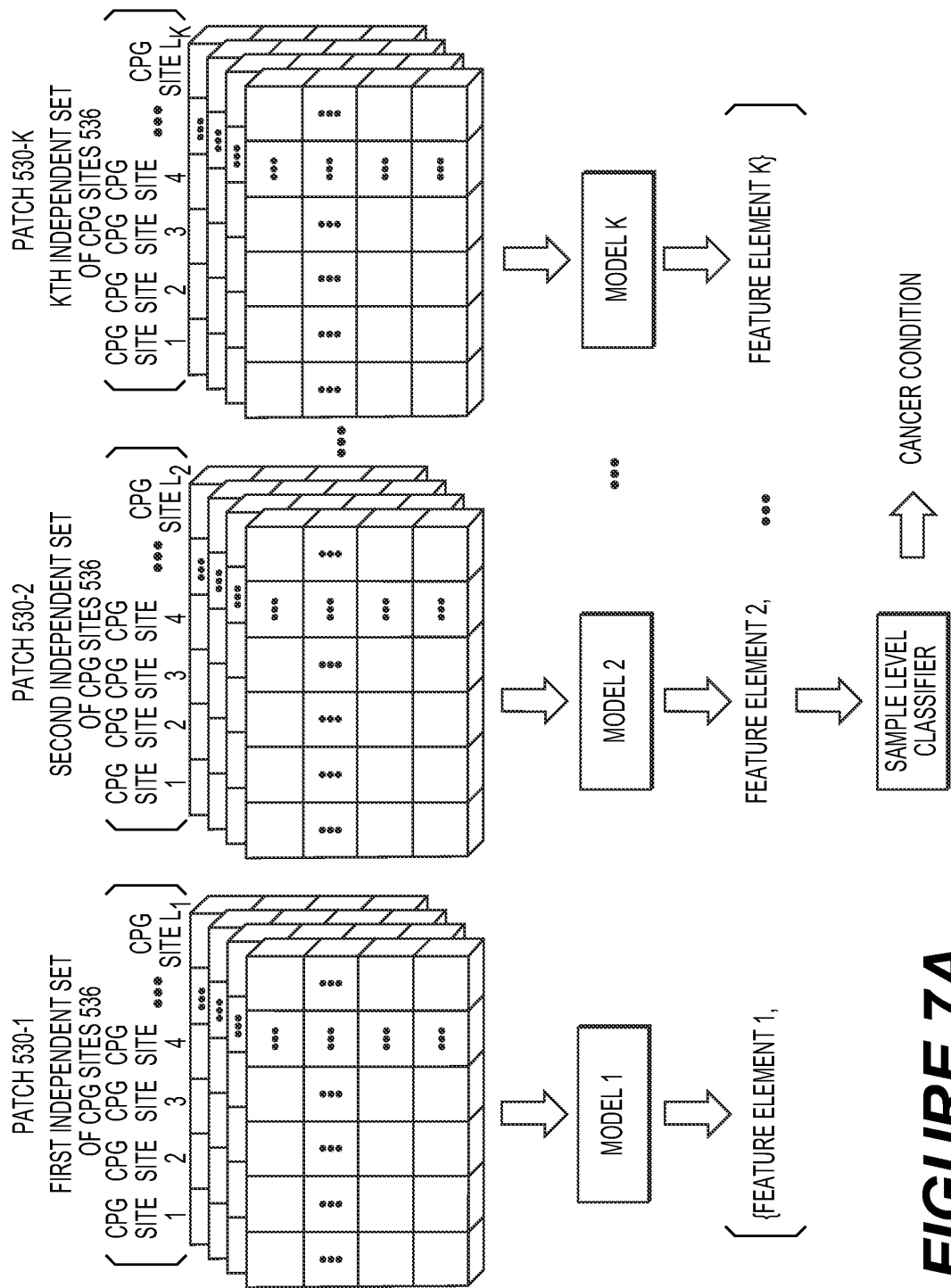
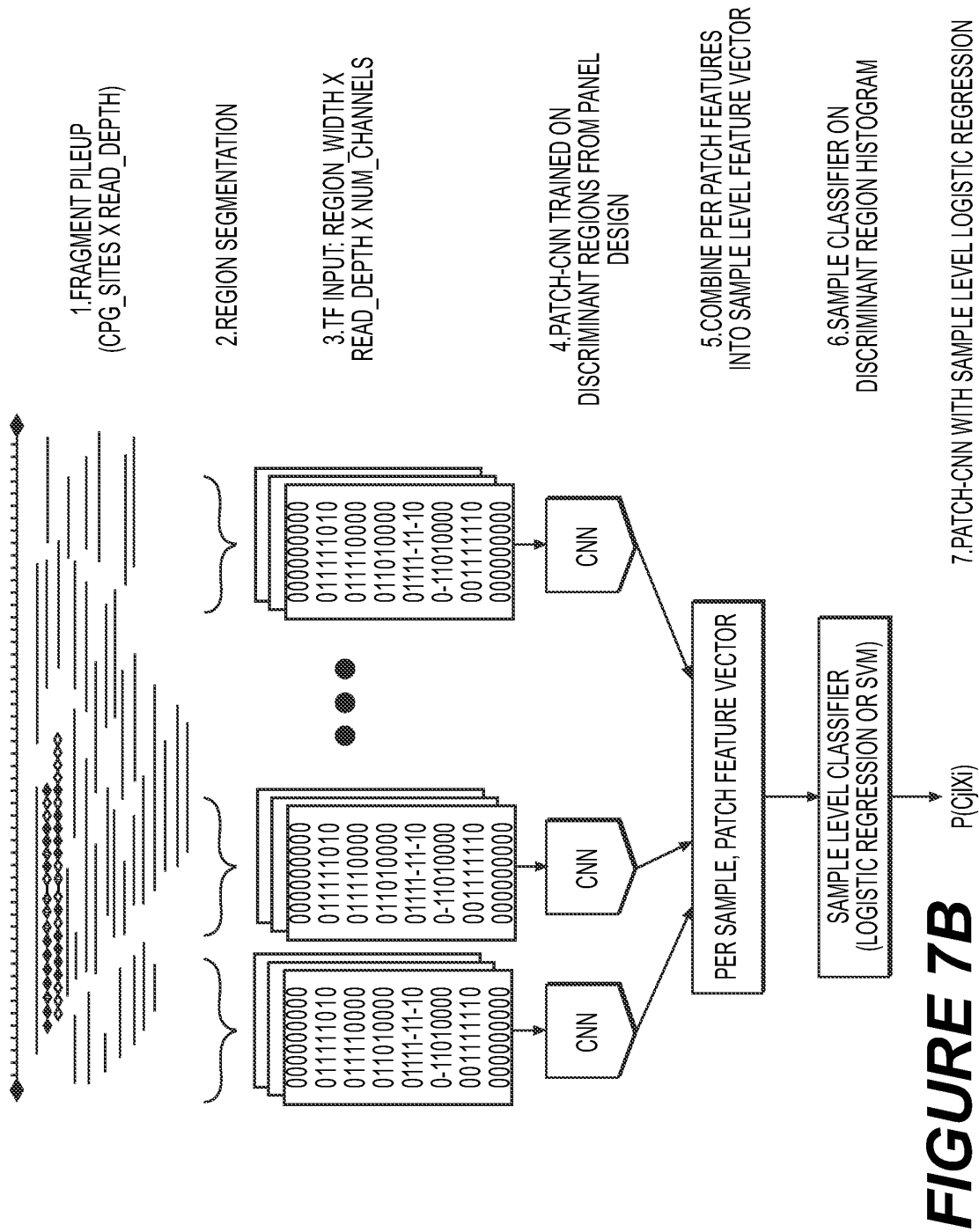
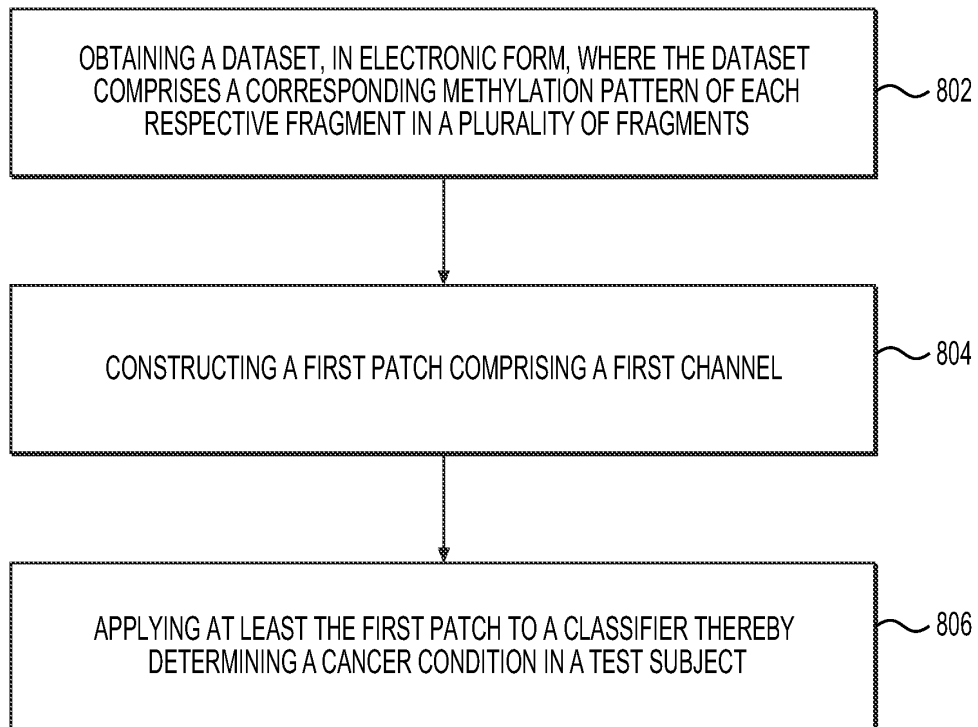


FIGURE 7A

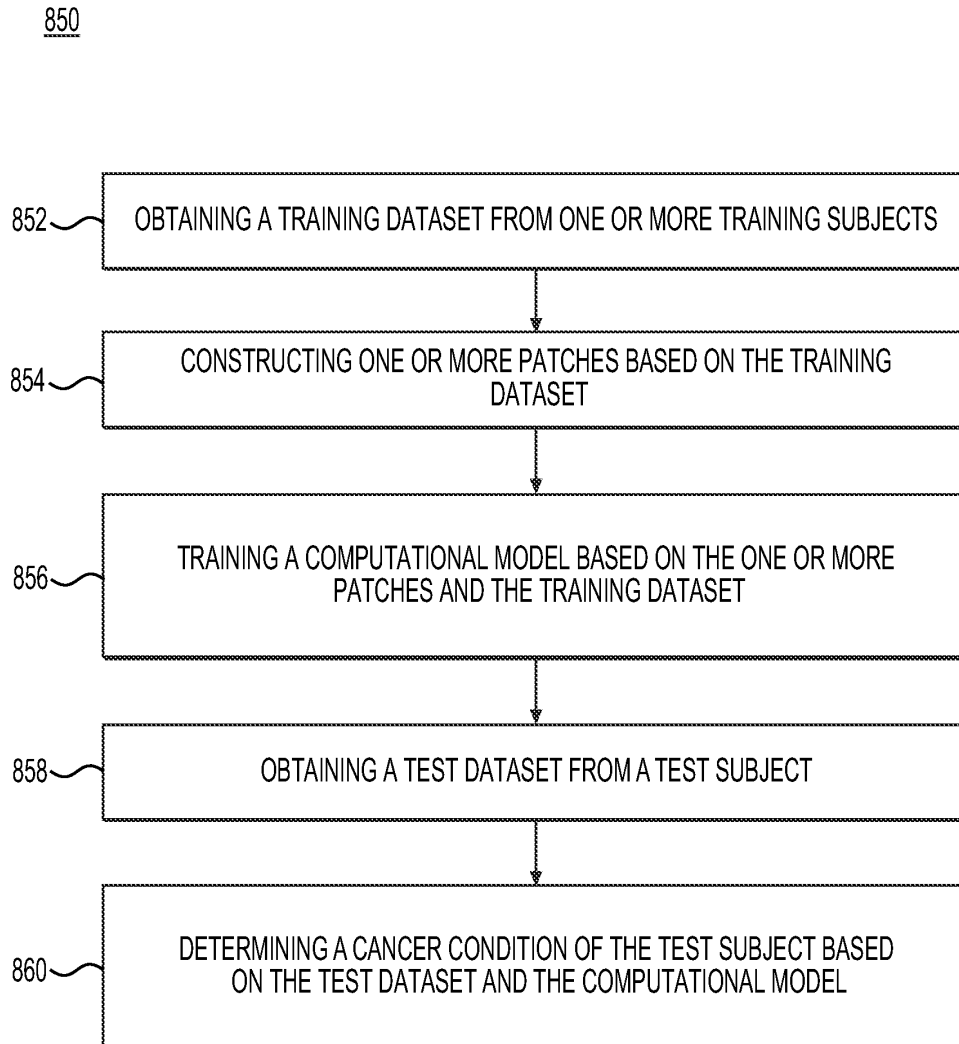


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**FIGURE 8A**

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**FIGURE 8B**

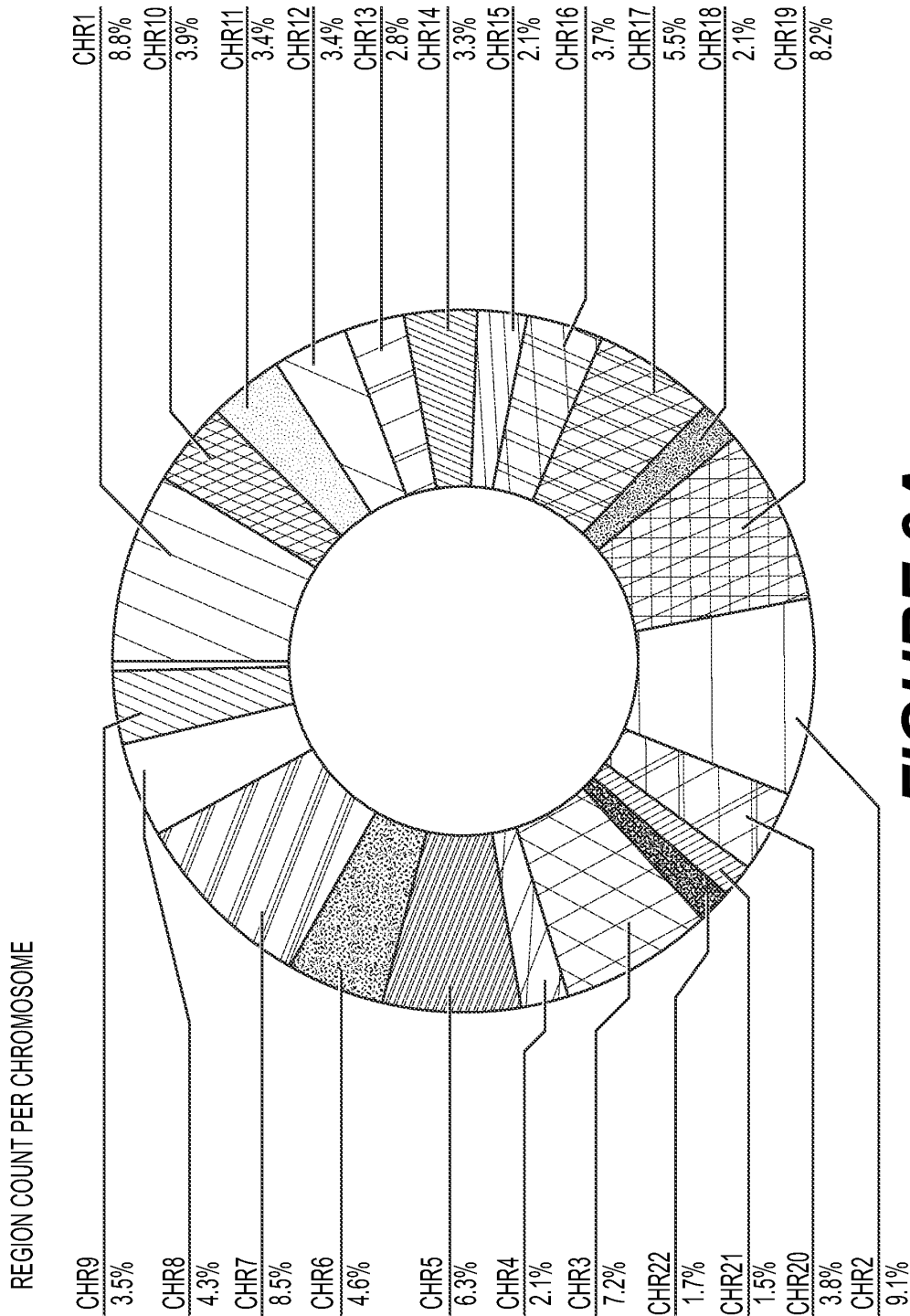


FIGURE 9A

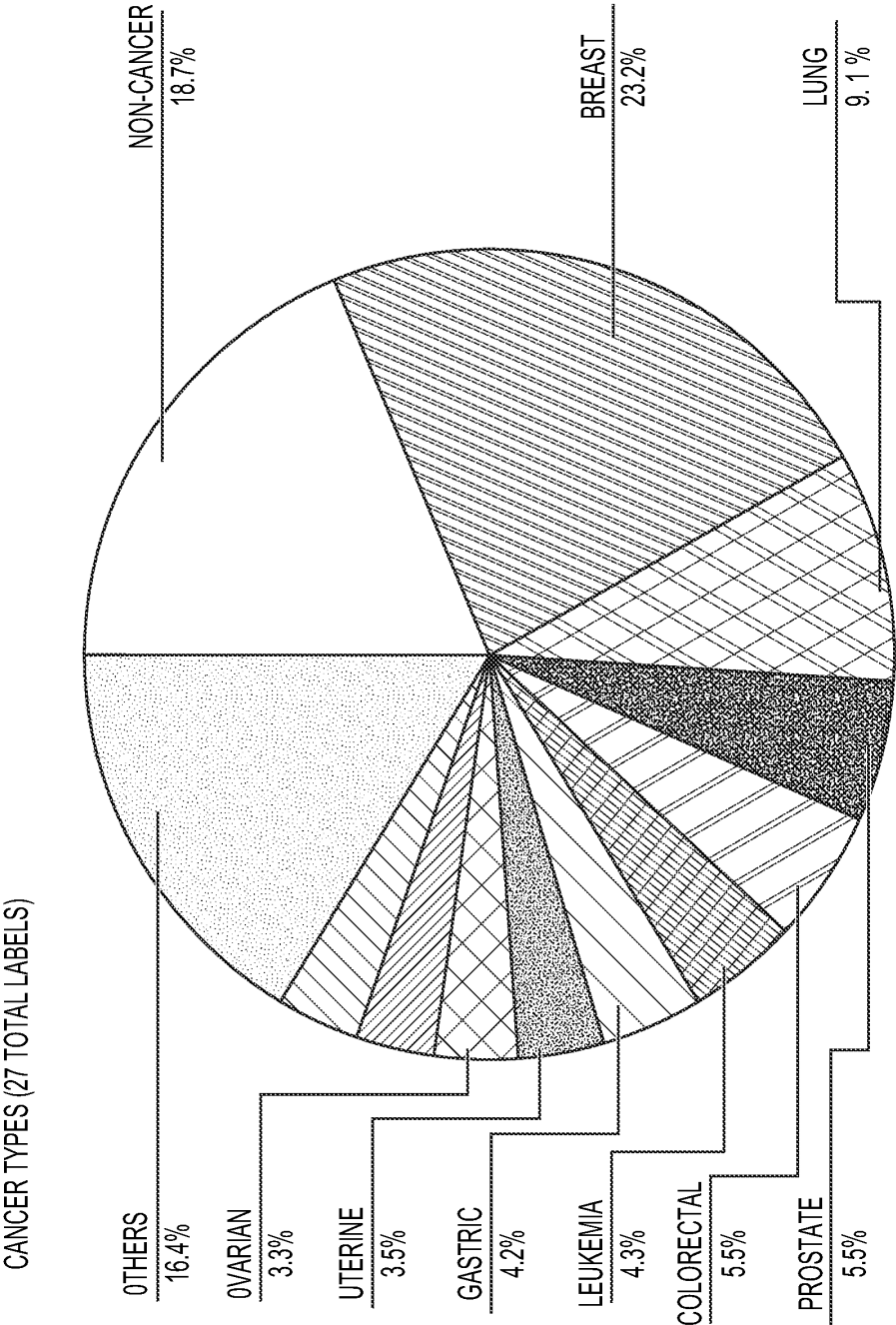
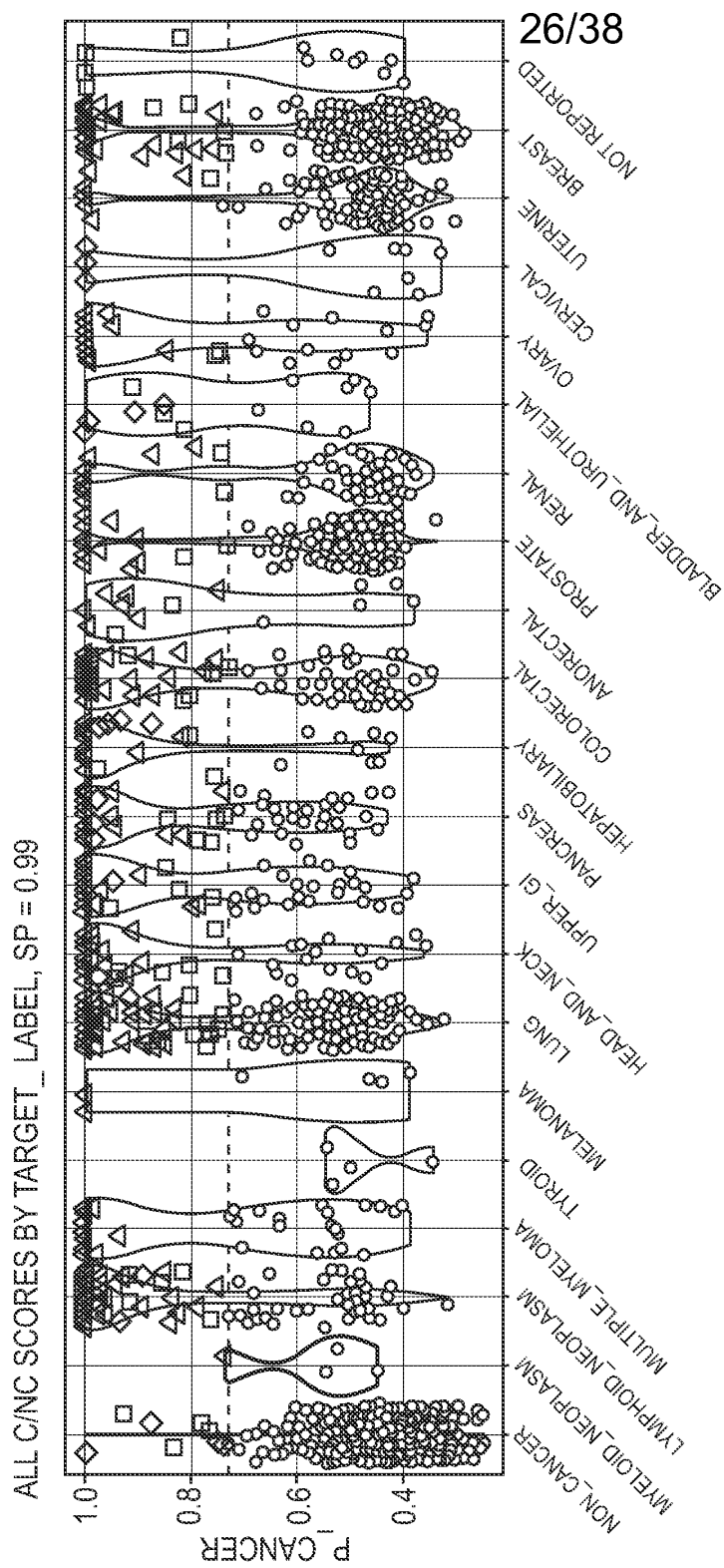


FIGURE 9B



TARGET_LABEL
DETECTED_AND_TOO
DETECTED = NO:TOO = NO
DETECTED = YES:TOO = INDETERMINATE
DETECTED = YES:TOO = NO
DETECTED = YES:TOO = YES

FIGURE. 9C

CLASSIFICATION PERFORMANCE (CANCER DETECTION AND TISSUE-OF-ORIGIN: TOO), SPECIFICITY = 0.99

CANCER STAGE	DETECTION	TOO RESULT
I	16% [12.6-20] (65/405)	50.8% [38.1-63.4] (33/65)
II	40.3% [35.3-45.5] (150/372)	70.7% [62.7-77.8] (106/150)
III	77% [71.8-81.6] (231/300)	73.2% [67-78.8] (169/231)
IV	89.9% [86.3-92.9] (312/347)	83% [78.4-87] (259/312)
NOT_EXPECTED	48.9% [33.7-64.2] (22/45)	68.2% [45.1-86.1] (15/22)
ALL_STAGES	53.1% [50.5-55.7] (780/1469)	74.6% [71.4-77.6] (582/780)
I + II	27.7% [24.6-31] (215/777)	64.7% [57.9-71] (139/215)
III + IV	83.9% [80.9-86.7] (543/647)	78.8% [75.1-82.2] (428/543)
I + II + III	41.4% [38.5-44.4] (446/1077)	69.1% [64.5-73.3] (308/446)
NON_CANCER	1.1% [0.7-1.6] (22/2052)	45.5% [24.4-67.8] (10/22)

FIGURE. 10A

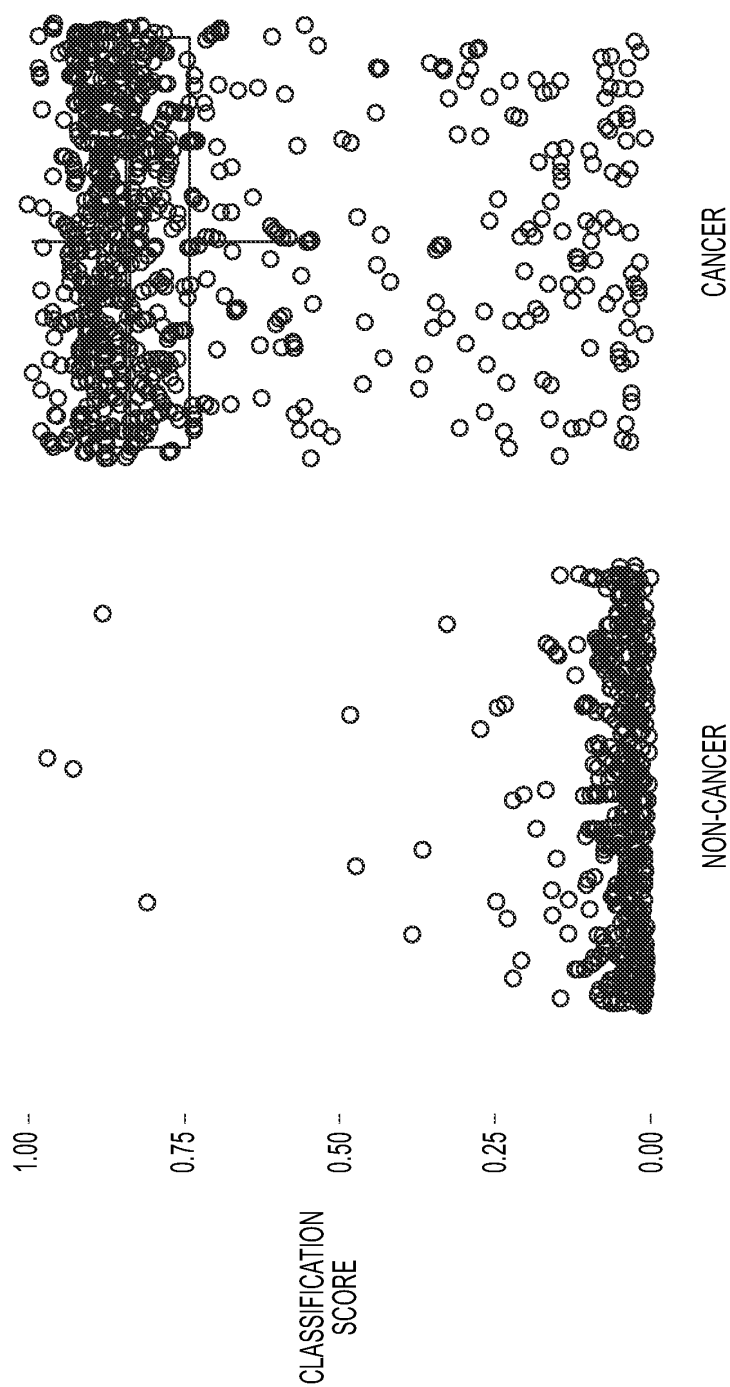


FIGURE 10B

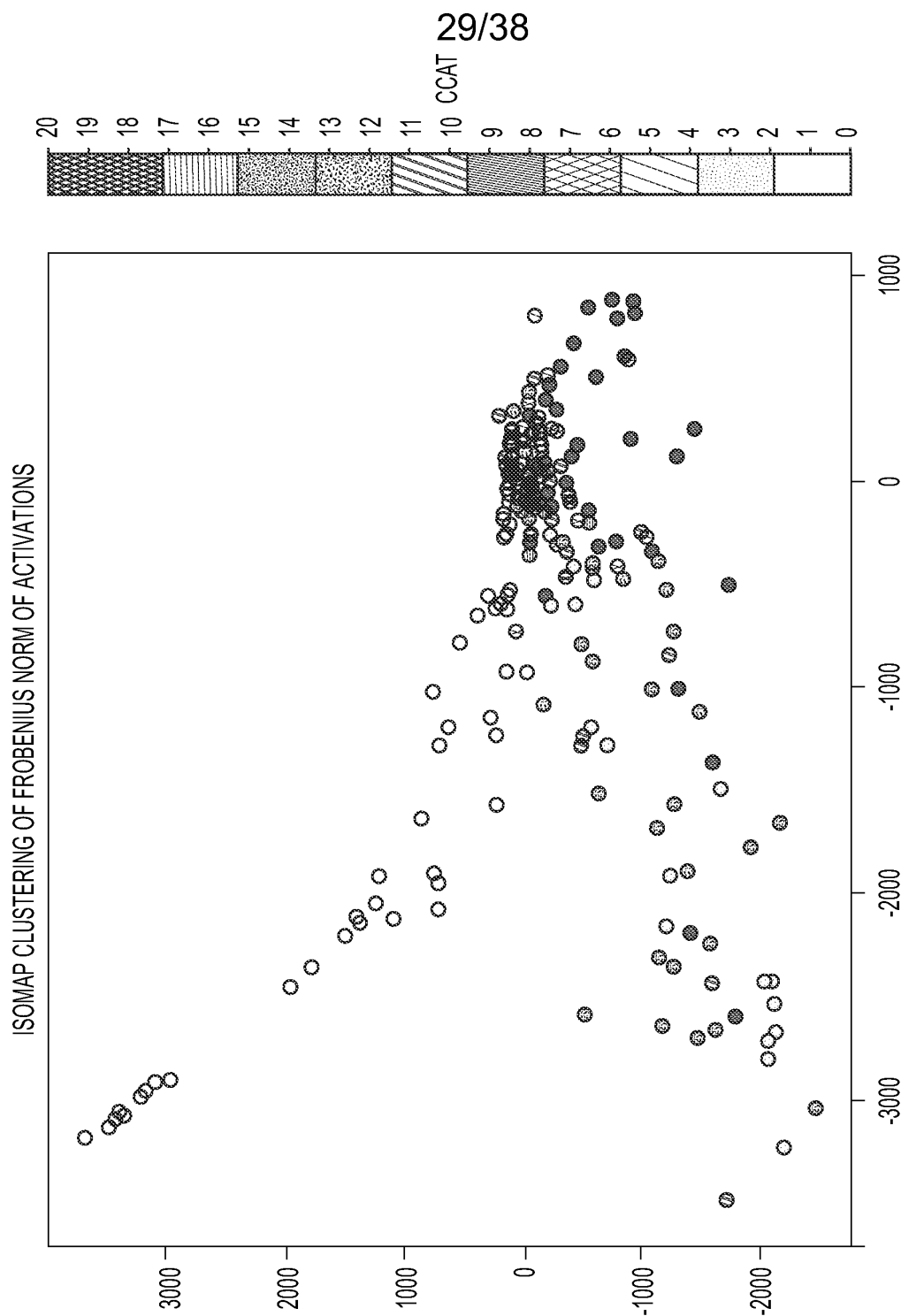


FIGURE 11

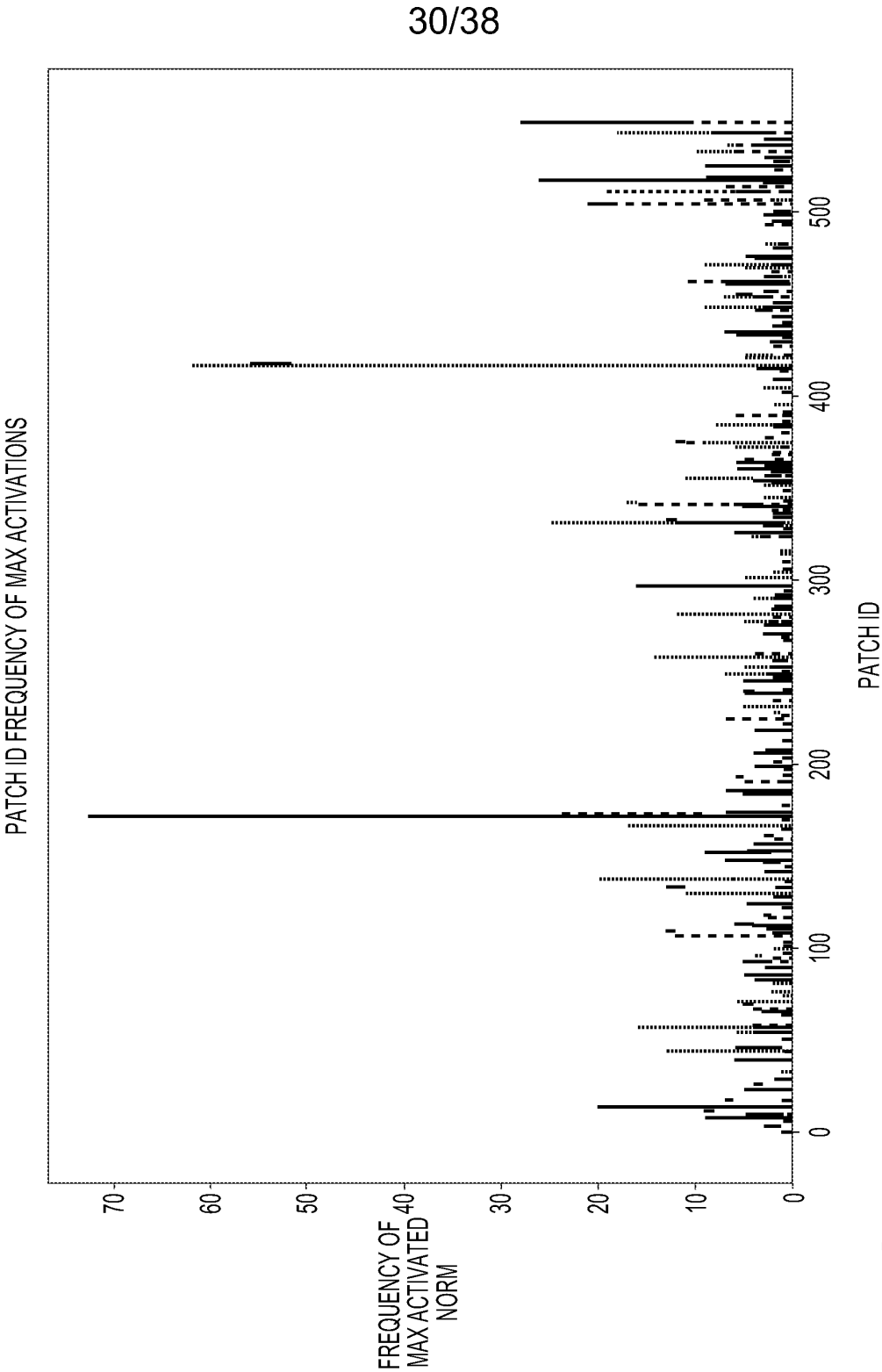


FIGURE 12

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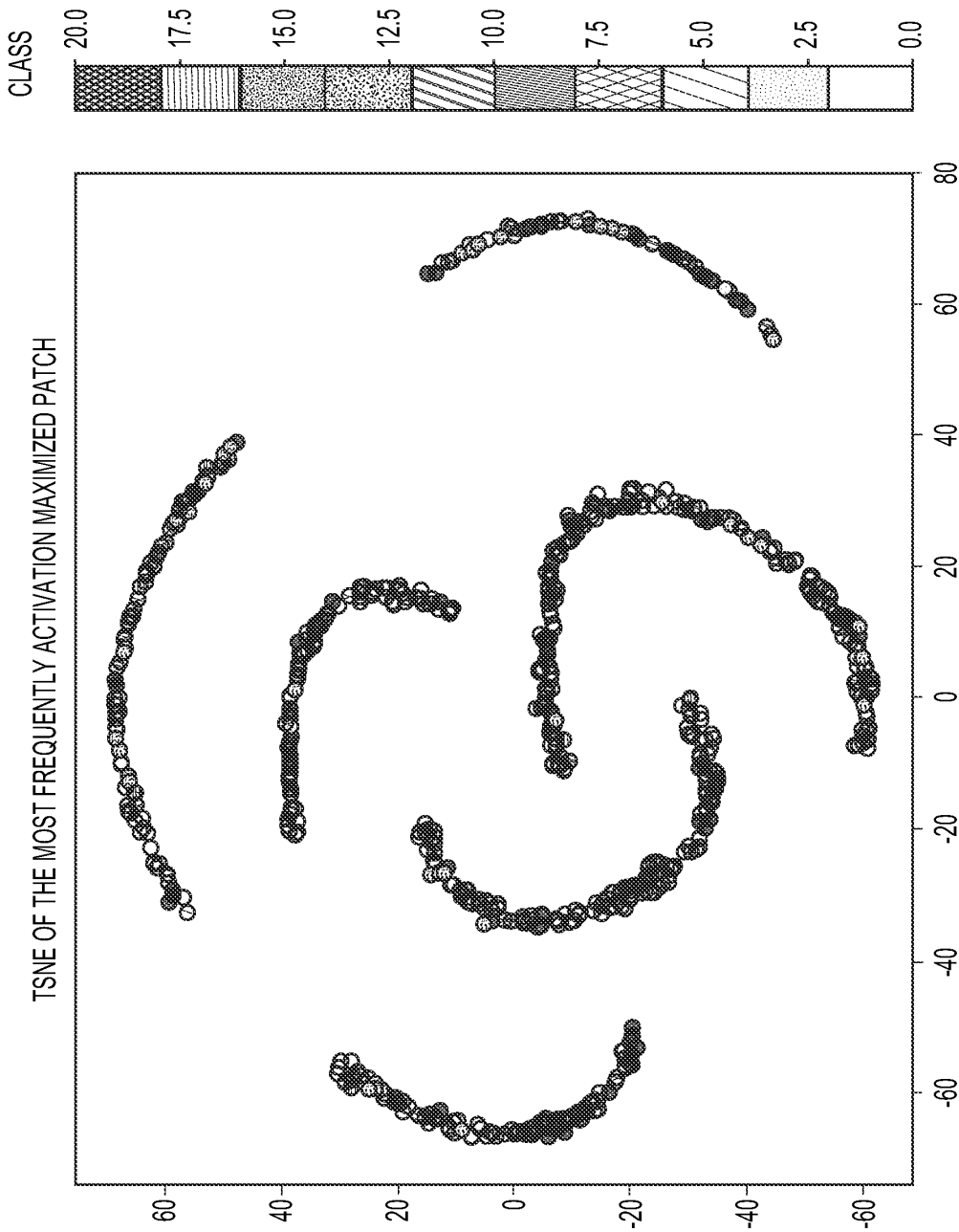


FIGURE 13

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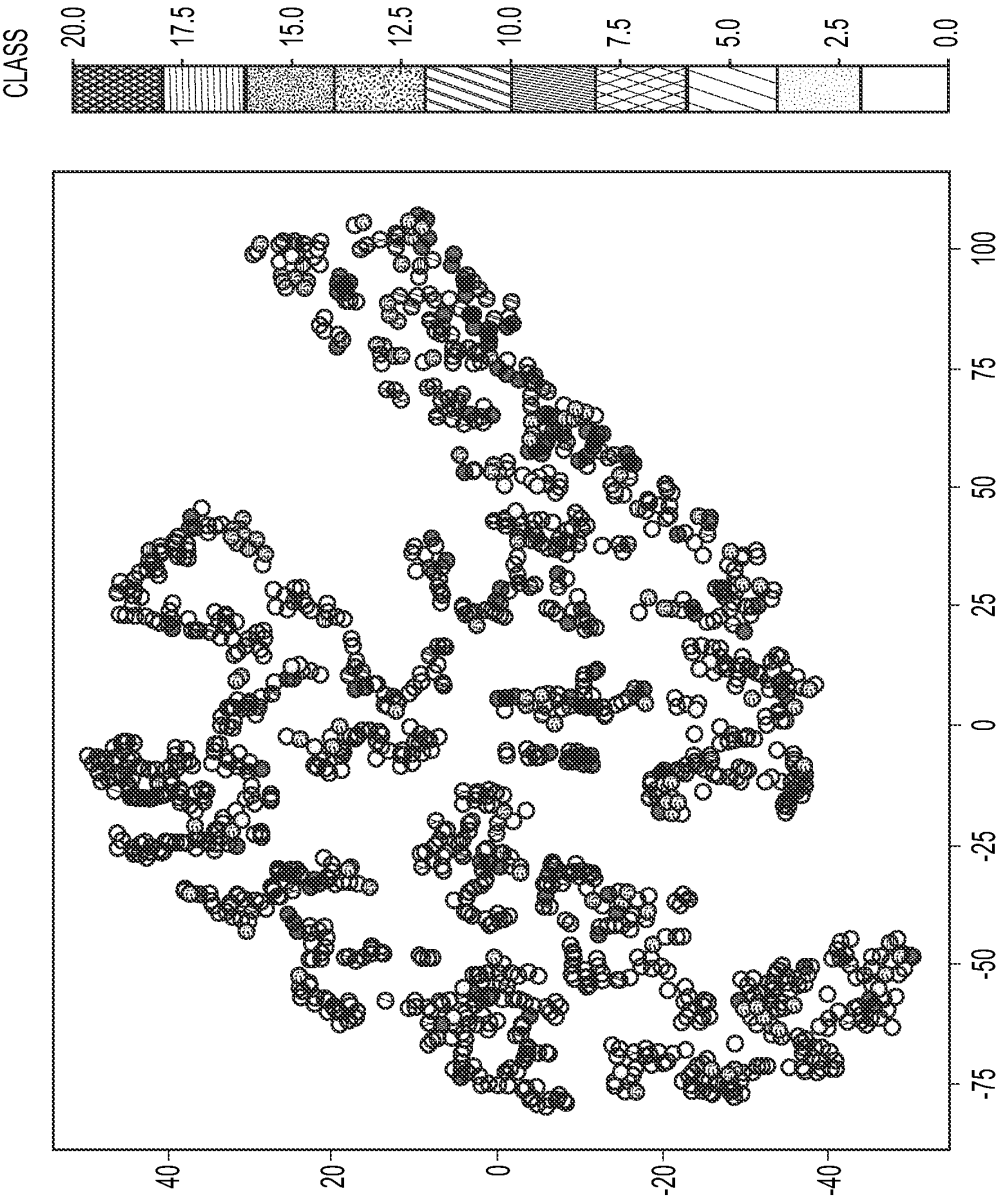


FIGURE 14

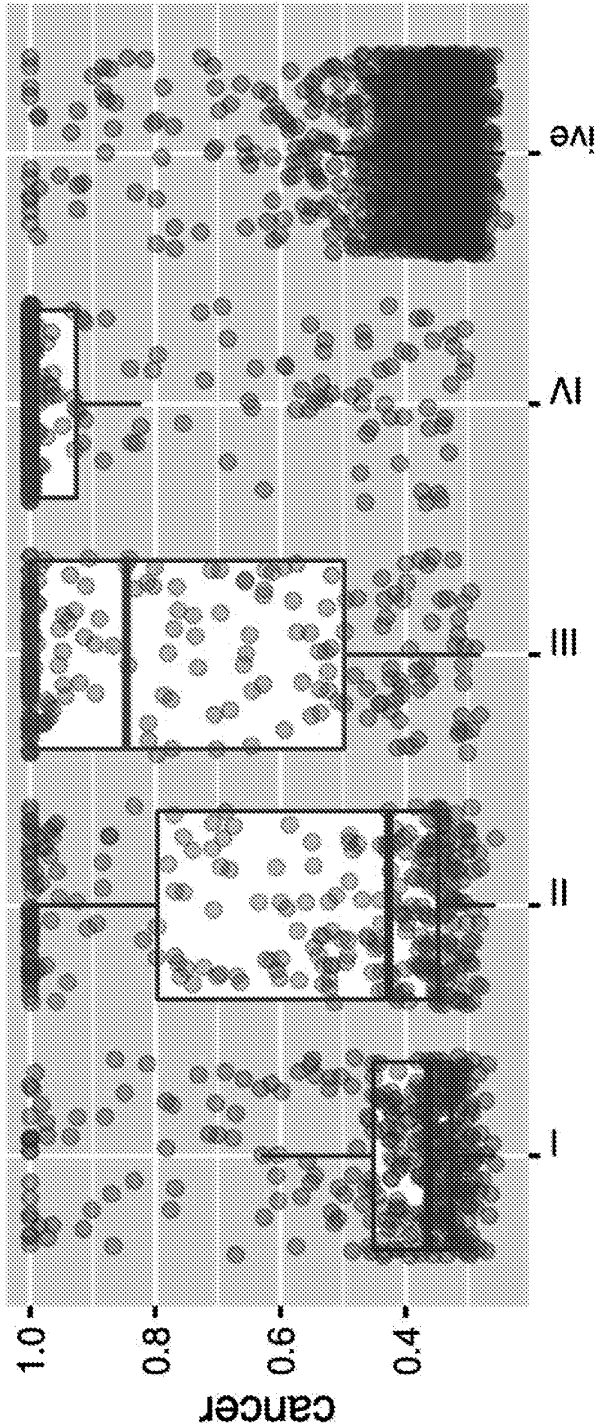


FIGURE 15

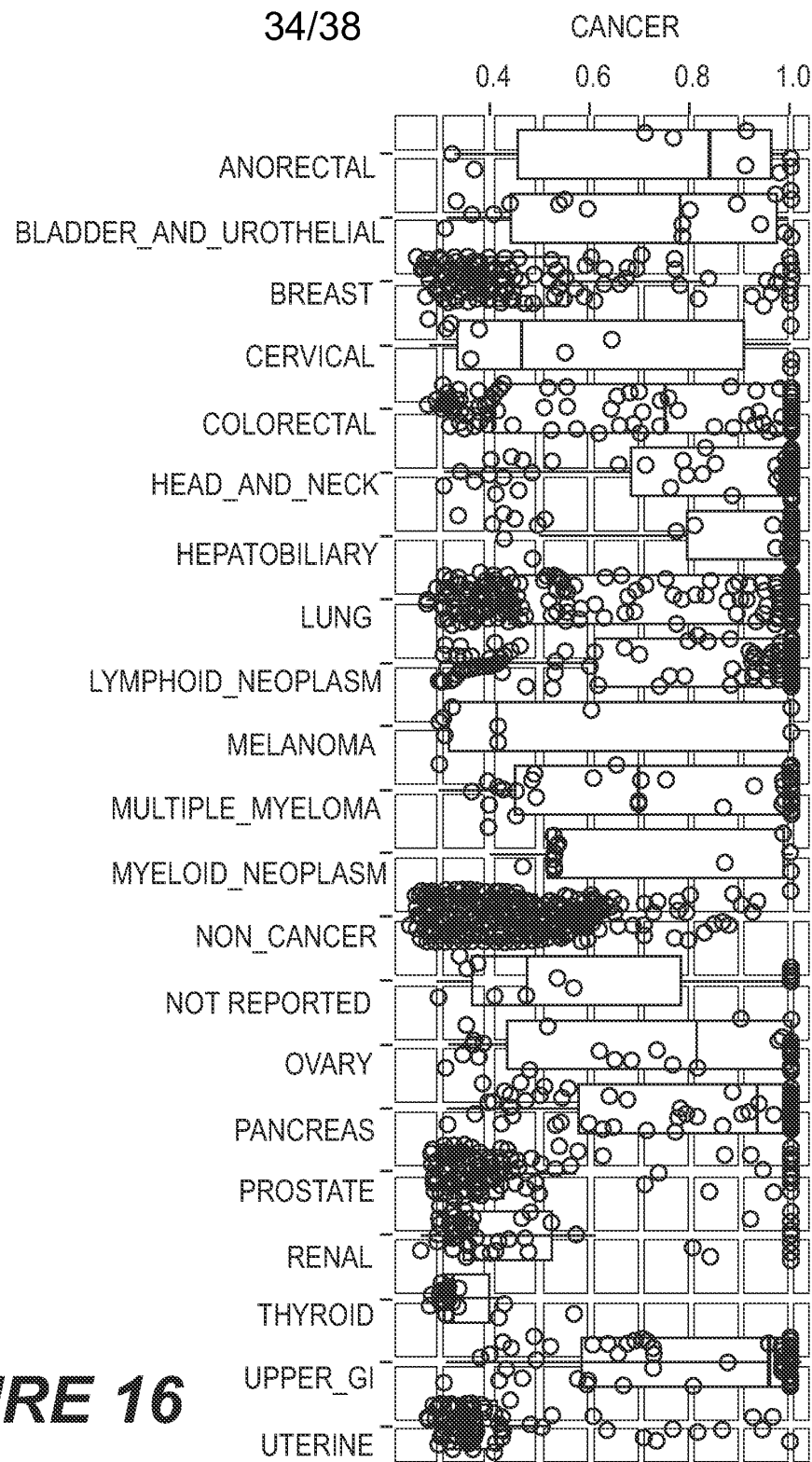


FIGURE 16

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TOO PRECISION: 89.4% (529/592)

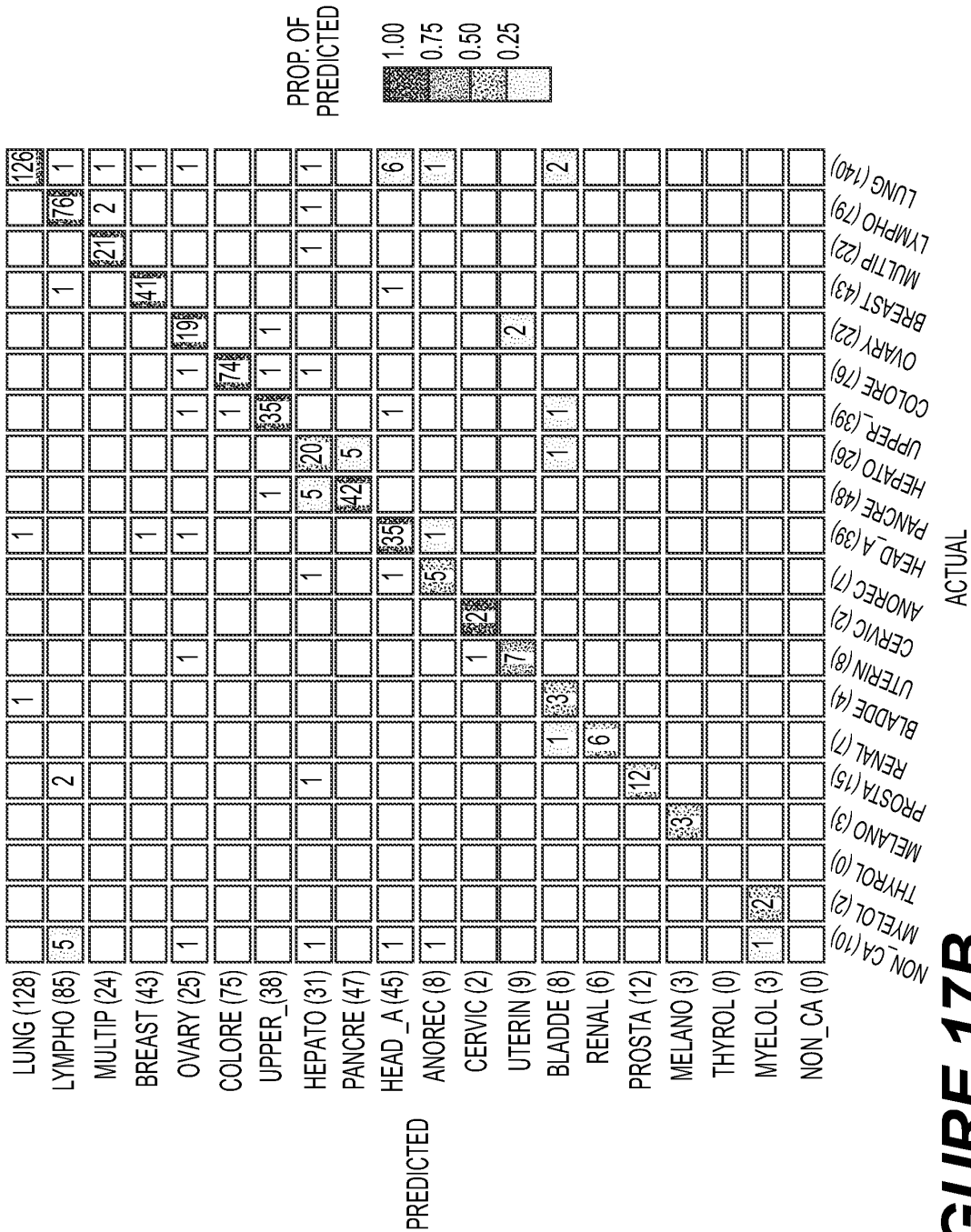


FIGURE 17B

CpG ₁ CpG ₂ CpG ₃ CpG ₄ CpG ₅ CpG ₆	1802
1 1 0 1 1 1	1803

1 1 1 1 1 1	1806-1
0 1 1 1 1 1	1806-2
1 0 1 1 1 1	1806-3
⋮	
0 0 0 0 0 0	1806-M

CpG ₁ CpG ₂ CpG ₃ CpG ₄ CpG ₅ CpG ₆	1804-1
1 1 0 1 1 1	
1 0 0 1 1 0	1804-2
CpG ₁ CpG ₂ CpG ₃ CpG ₄ CpG ₅ CpG ₆	
⋮	
1 1 0 1 1 1	1804-100
CpG ₁ CpG ₂ CpG ₃ CpG ₄ CpG ₅ CpG ₆	

FIGURE 18

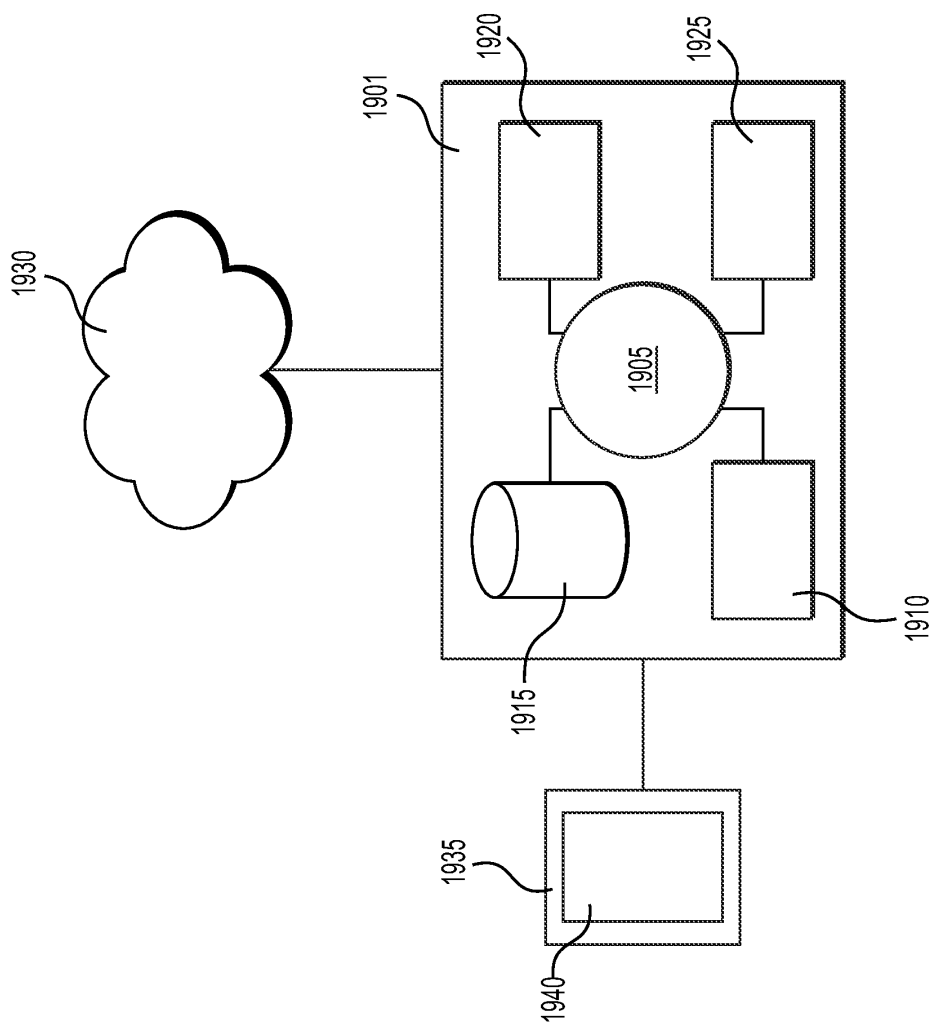


FIGURE 19