

[54] **CONTENT ADDRESSABLE MEMORY WITH FLAG STORAGE TO INDICATE MEMORY STATE**

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[51] Int. Cl.⁵ **G11C 15/00**

[52] U.S. Cl. **365/49; 365/189.01; 364/200; 364/900**

[58] Field of Search 365/49, 189.01, 189.07; 364/200 MS File, 900 MS File

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[57] **ABSTRACT**

A content addressable memory device capable of correct retrieval operation comprises a flag bit column (12) provided in a memory cell array. The flag bit column (12) stores a flag signal indicating whether a word is in a data written state or an empty state for each word in a data array (2). In the retrieval operation, the data written in the data array (2) and a flag bit column (12) are simultaneously retrieved, providing a correct retrieval result. In addition, since the flag bit column (12) is provided in the memory cell array, it can be controlled in a manner similar to controlling the data array (2).

10 Claims, 13 Drawing Sheets

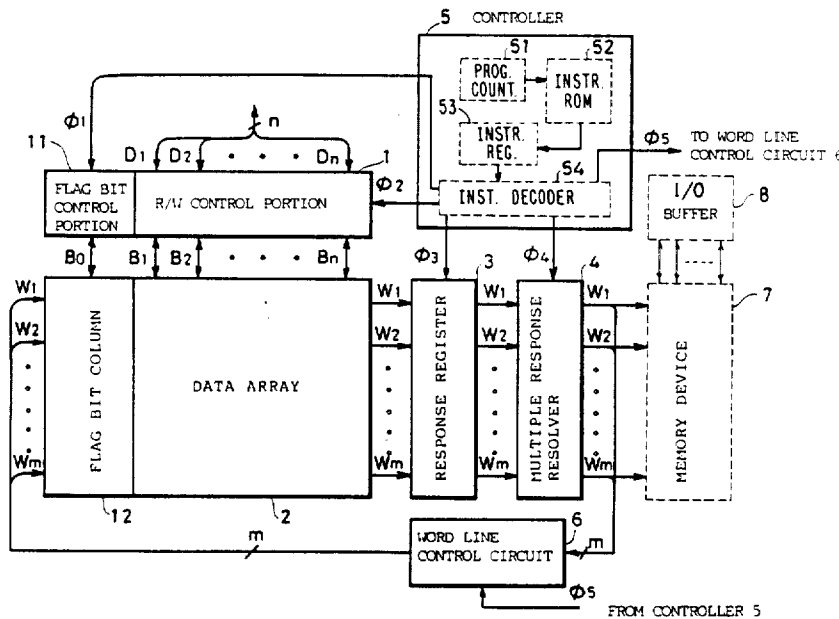
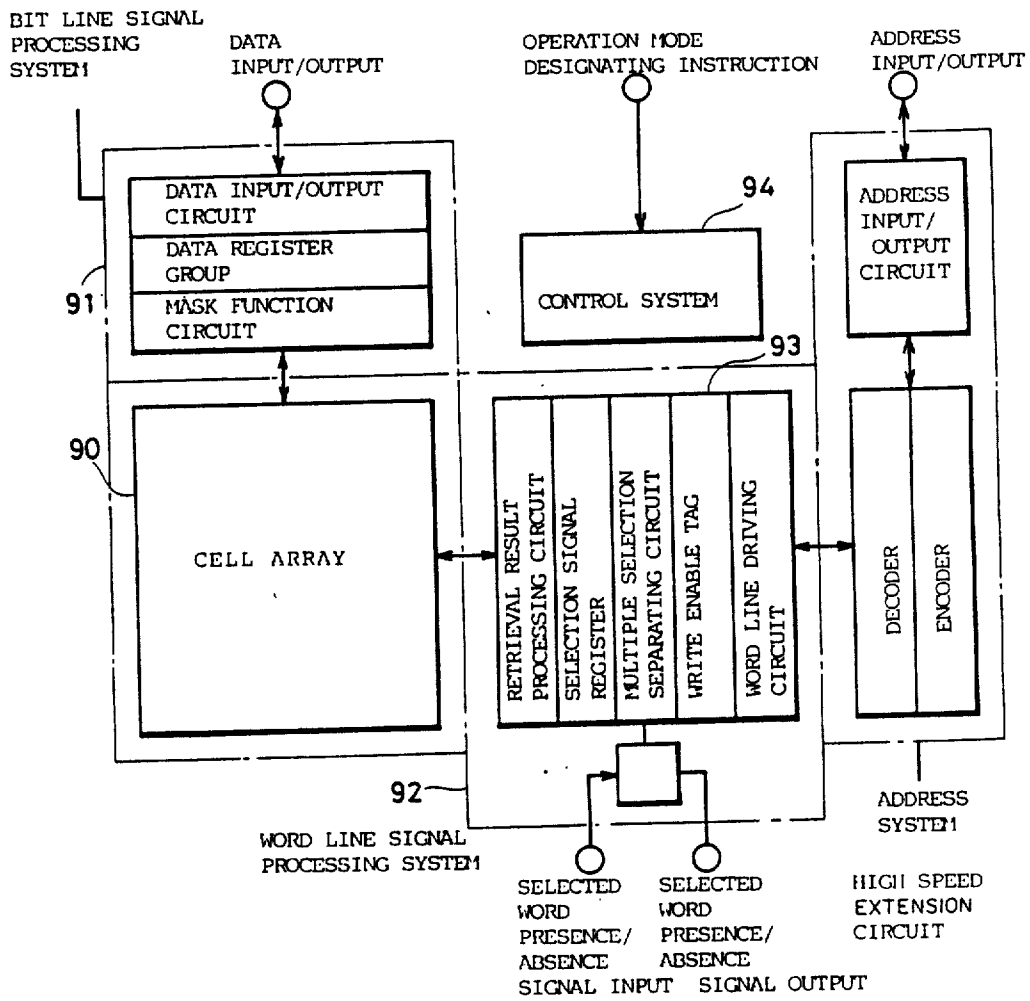


FIG. 1 PRIOR ART



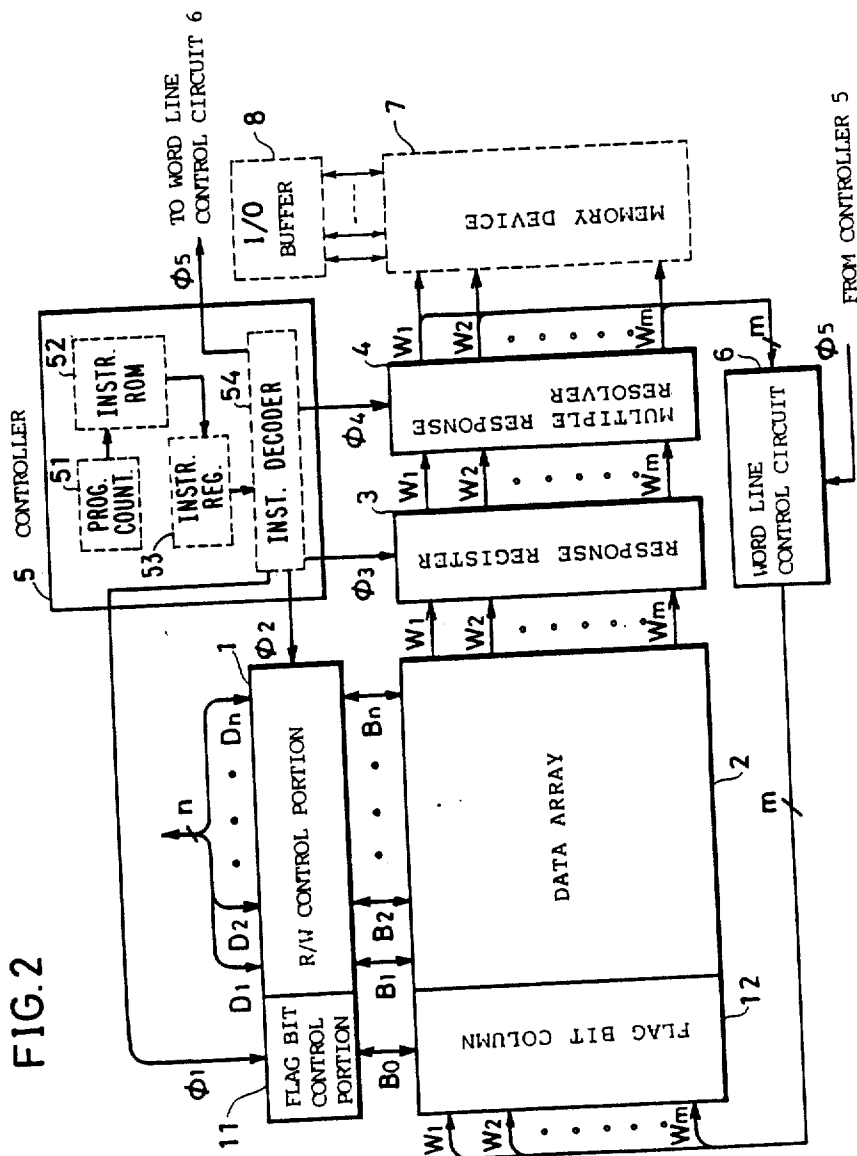


FIG. 3A

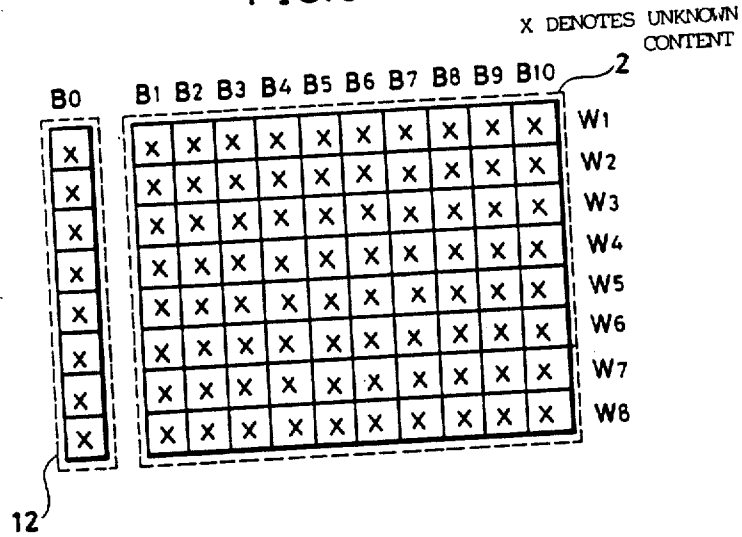


FIG. 3B

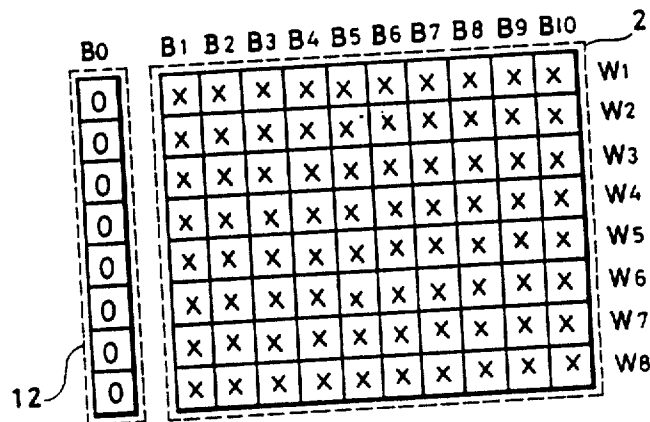


FIG.3C

	B ₀	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈	B ₉	B ₁₀	
	1	0	0	0	0	0	0	0	0	0	0	W ₁
	1	1	1	1	1	1	1	1	1	1	1	W ₂
	1	0	0	0	0	0	1	1	1	1	1	W ₃
	0	x	x	x	x	x	x	x	x	x	x	W ₄
	0	x	x	x	x	x	x	x	x	x	x	W ₅
	0	x	x	x	x	x	x	x	x	x	x	W ₆
	0	x	x	x	x	x	x	x	x	x	x	W ₇
	0	x	x	x	x	x	x	x	x	x	x	W ₈

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FIG.3D

	B ₀	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈	B ₉	B ₁₀	
	1	0	0	0	0	0	0	0	0	0	0	W ₁
	1	1	1	1	1	1	1	1	1	1	1	W ₂
	1	0	0	0	0	0	1	1	1	1	1	W ₃
	1	1	1	1	1	0	0	0	0	0	0	W ₄
	0	x	x	x	x	x	x	x	x	x	x	W ₅
	1	0	1	0	1	0	1	0	1	0	1	W ₆
	0	x	x	x	x	x	x	x	x	x	x	W ₇
	1	1	0	1	0	1	0	1	0	1	0	W ₈

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