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Bates et al.

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(54) **UNINITIALIZED MEMORY WATCH**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(51) Int. Cl.⁷ **G06F 9/44; G06F 9/00**

(52) U.S. Cl. **717/131; 717/124; 717/127; 717/129; 717/130; 712/227**

(58) Field of Search **717/124, 125, 717/127, 129, 130, 131; 714/25, 37, 38, 40, 42; 712/227, 244**

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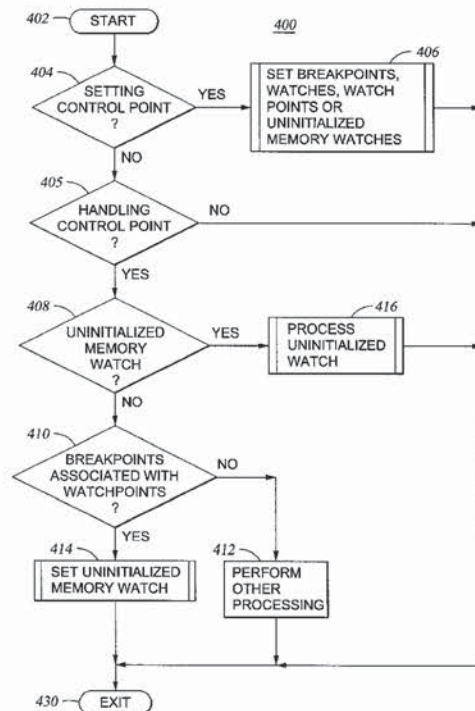
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(57) **ABSTRACT**

In the present invention, a special purpose watch function is used to find reference to uninitialized memory within a computer program during debugging. The uninitialized memory watch may be implemented singularly with respect to a given memory allocation or as a watchpoint wherein a watch is set on a memory space for each instance of a memory allocation during execution of a program. At the point where this watch is set, the program assumes that the memory targeted is uninitialized. When storage to the target memory is made, the watch function marks that segment of memory as initialized and permits continued program execution. Upon detecting a reference to the memory, a determination is made as to whether the watched memory space is initialized.

44 Claims, 7 Drawing Sheets



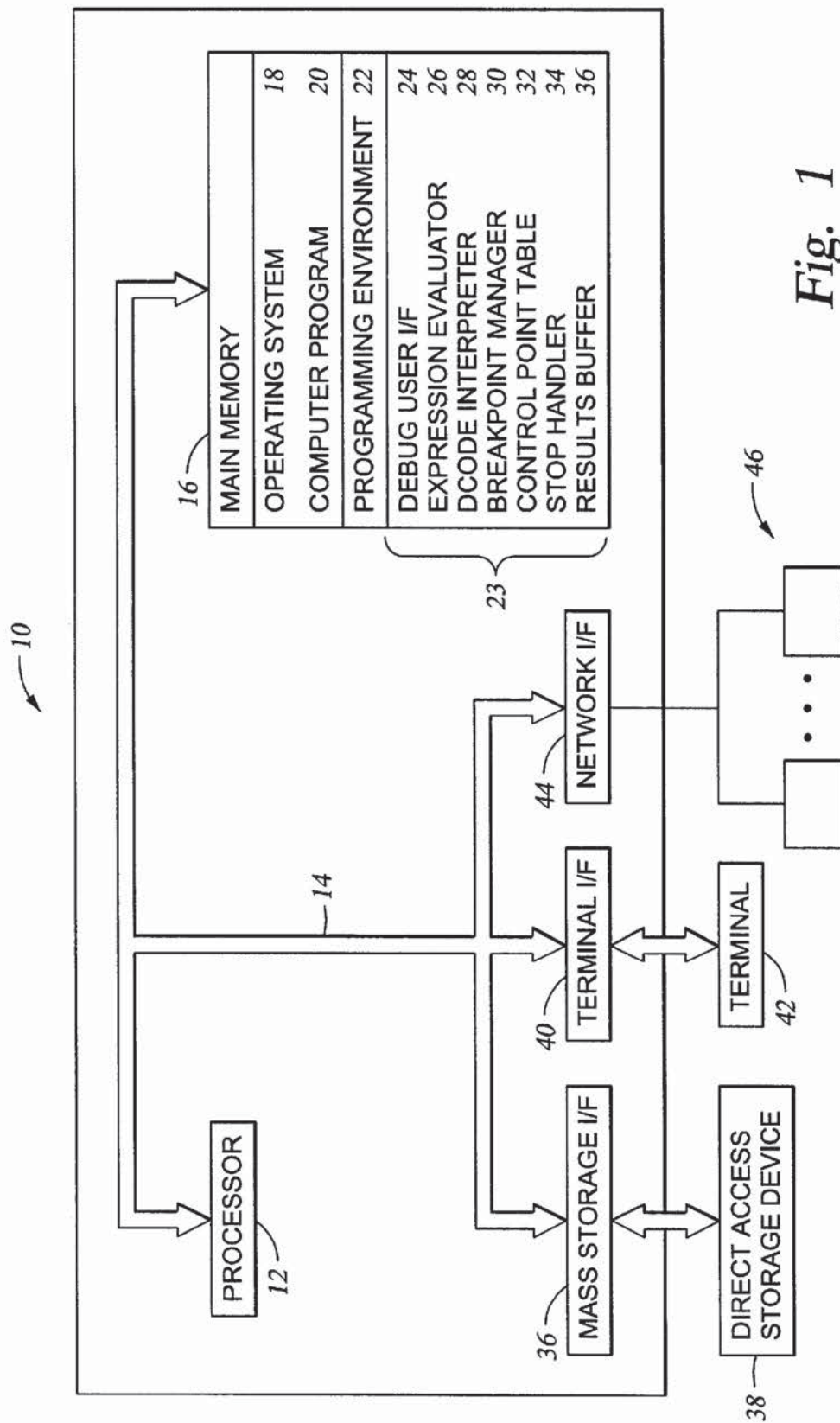


Fig. 1

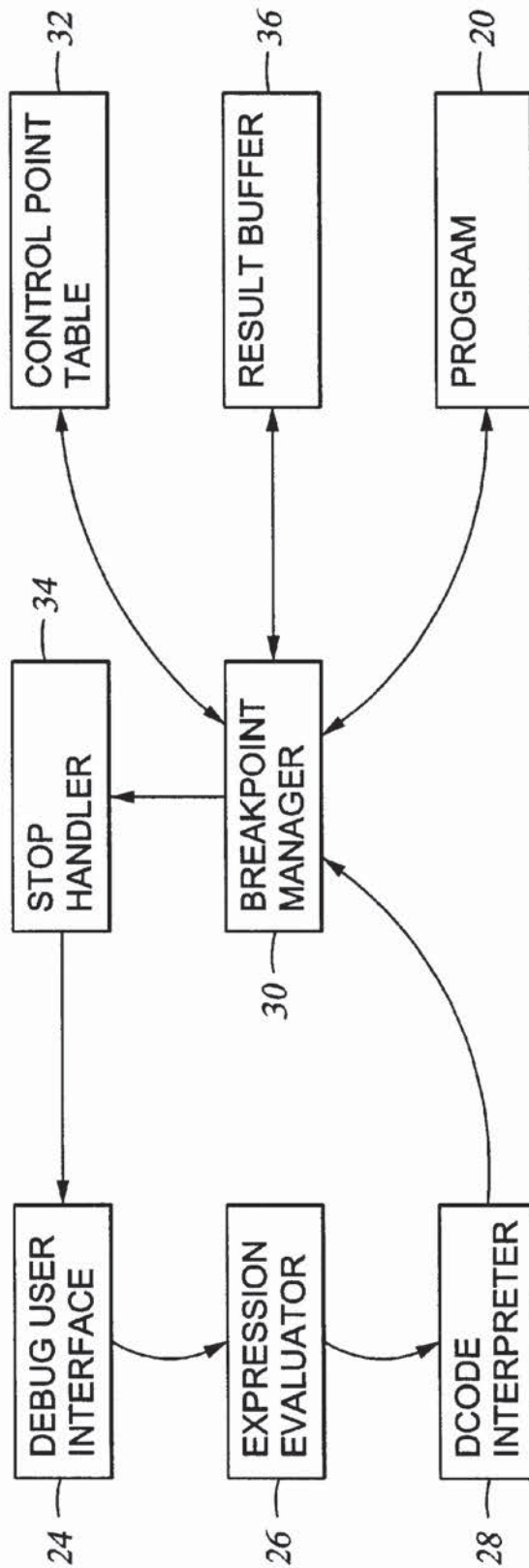


Fig. 2

WATCH NUMBER	WATCH ADDRESS	# BYTES WATCHED	POINTER TO DPCODE PROGRAM	BP ADDRESS	OP CODE	WATCH PT	BIT VECTOR
1	87909724	3	DCODE A				111
2	88100711	5	DCODE B	1234565	AB	YES	01011
2	88101111	5	DCODE B	1234565	AB	YES	11100
2	89000179	5	DCODE B	1234565	AB	YES	00000
3			DCODE B	1237771	AC	YES	

Fig. 3

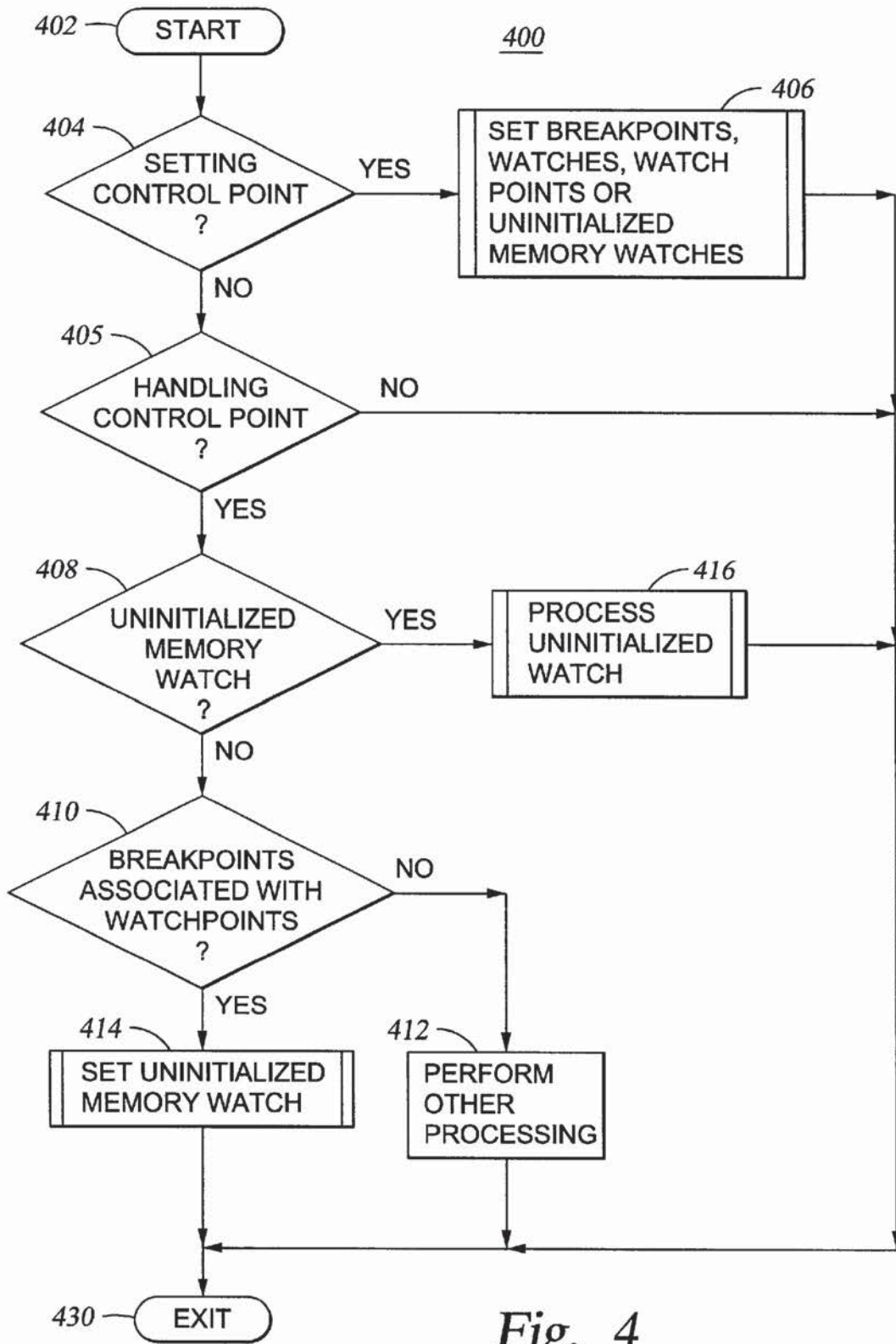


Fig. 4

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