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FILE ORGANIZATION ON DIRECT ACCESS DISK DEVICE

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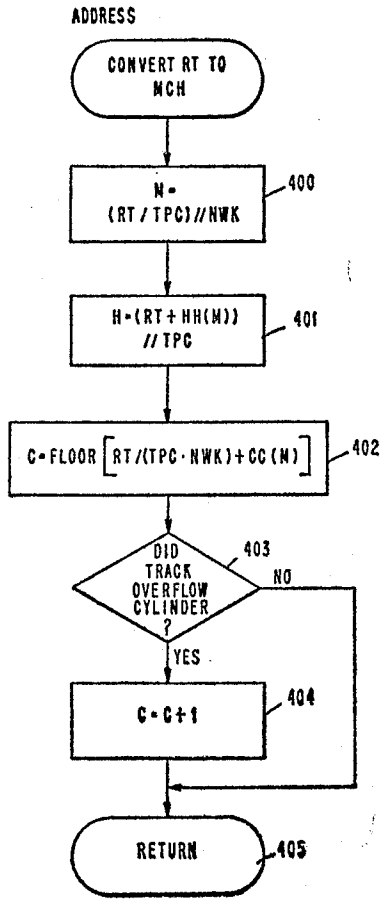
Continuation of application Ser. No. 199,692, Nov. 17, 1971. This application Oct. 2, 1973, Ser. No. 402,694

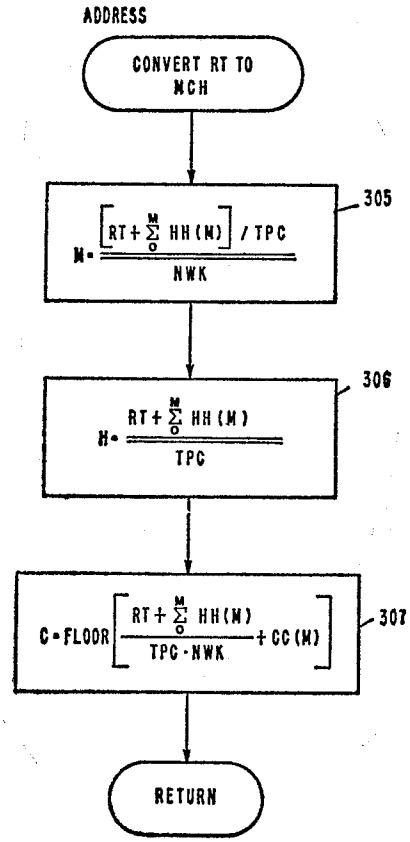
Int. Cl. G06f *9/06, 13/04*

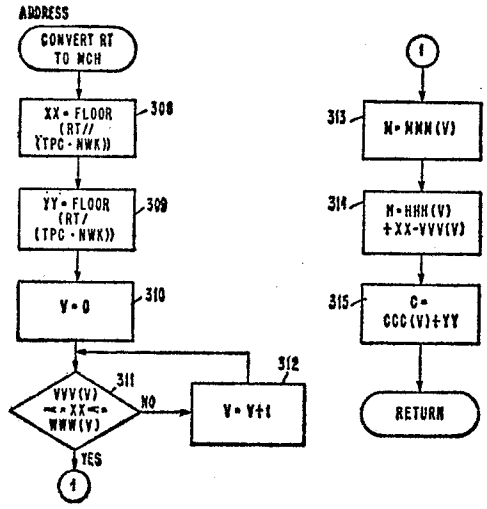
U.S. Cl. 340—172.5

5 Sheets Drawing. 20 Pages Specification

A technique is disclosed for utilizing all available work space on direct access disk devices without regard to the actual physical location of the work space by providing a logical address naming convention for available work space and an automatic translation of physical address to







logical address. The translation is automatically machine calculated according to

$$M=MMM(V)$$
$$H=HHH(V)+XX-VVV(V)$$
$$C=CCC(V)+YY$$
$$XX=FLOOR(RT//(TPC\cdot NWK))$$
$$YY=FLOOR(RT/(TPC\cdot NWK))$$

where M is the physical module number, H is the physical track (head) number, C is the physical cylinder number, MMM, HHH, and CCC are physical module, head and cylinder numbers at predetermined break points selected by the user, XX and YY are parameters, and X is a parameter equal to the lowest possible value of V at which $VVV(V)\leq XX\leq WWW(V)$ where VVV is equal to the first logical track of a group and WWW is equal to the last logical track of that group, a group comprising all logical tracks between two of the predetermined break points, and where a break point is the transfer from one physical cylinder to another physical cylinder.

A track interleaving technique is also disclosed for combination with the work space technique to achieve rapid comparison of parallel files.

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Original Filed Nov. 17, 1971

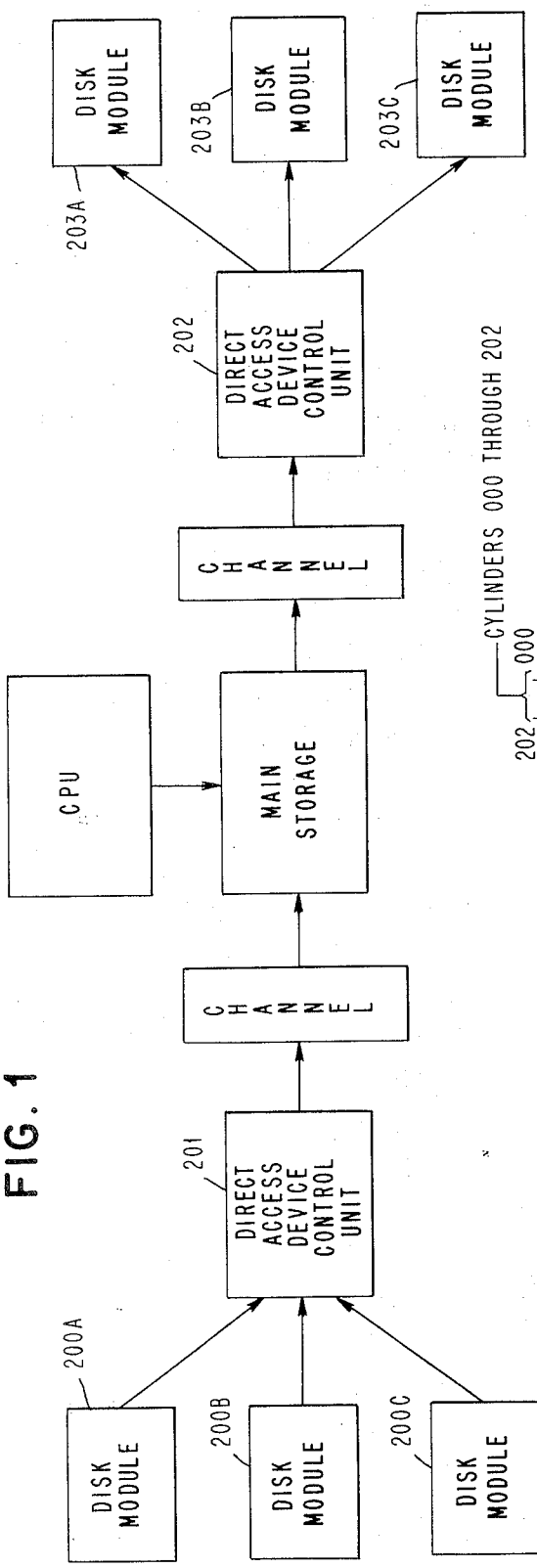


FIG. 1

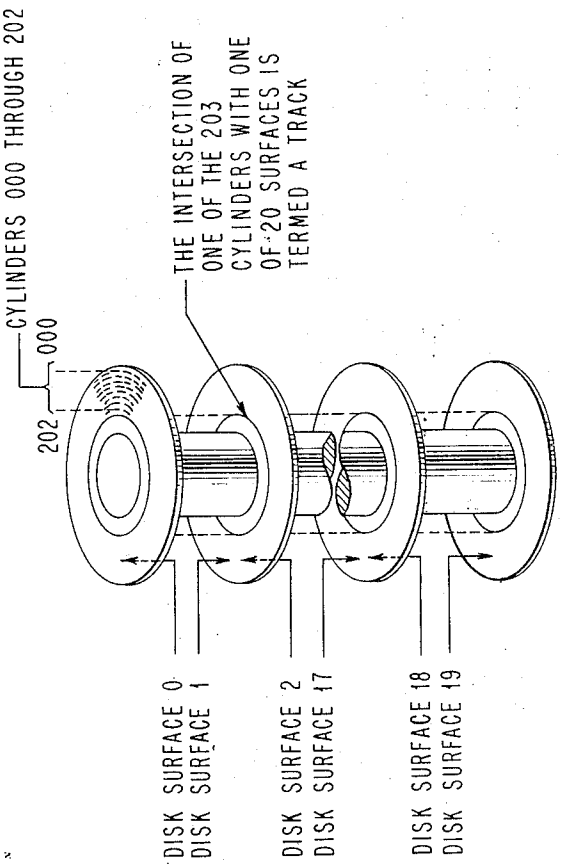


FIG. 2

FILE ORGANIZATION ON DIRECT ACCESS DISK DEVICE

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FIG. 3

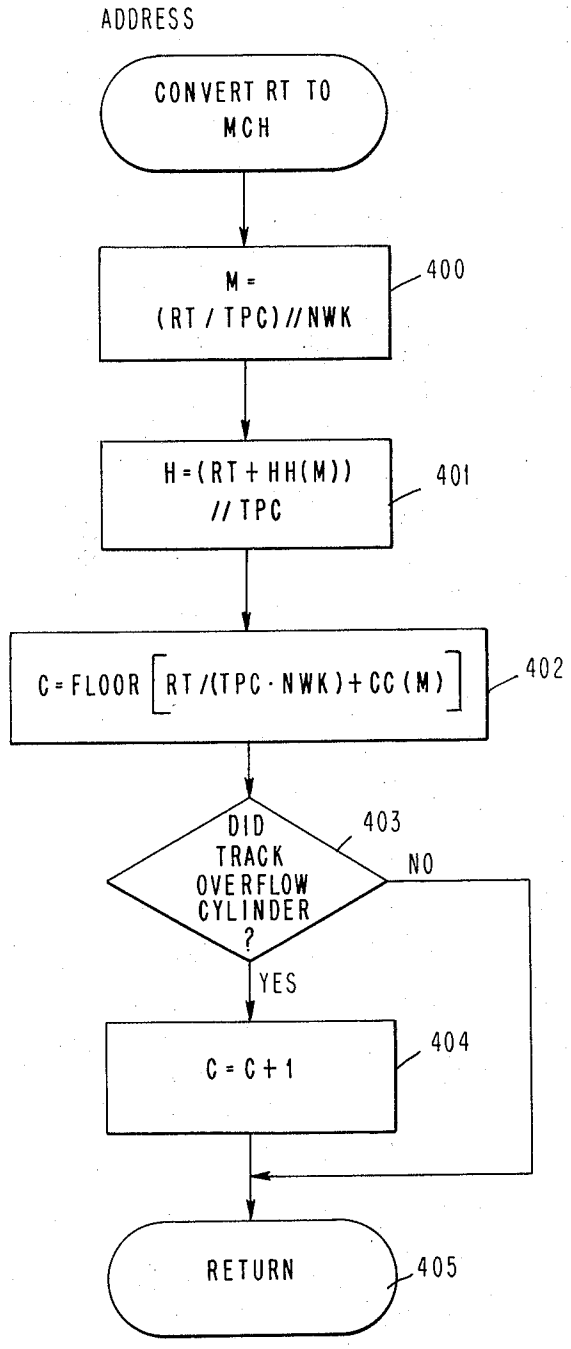


FIG. 4

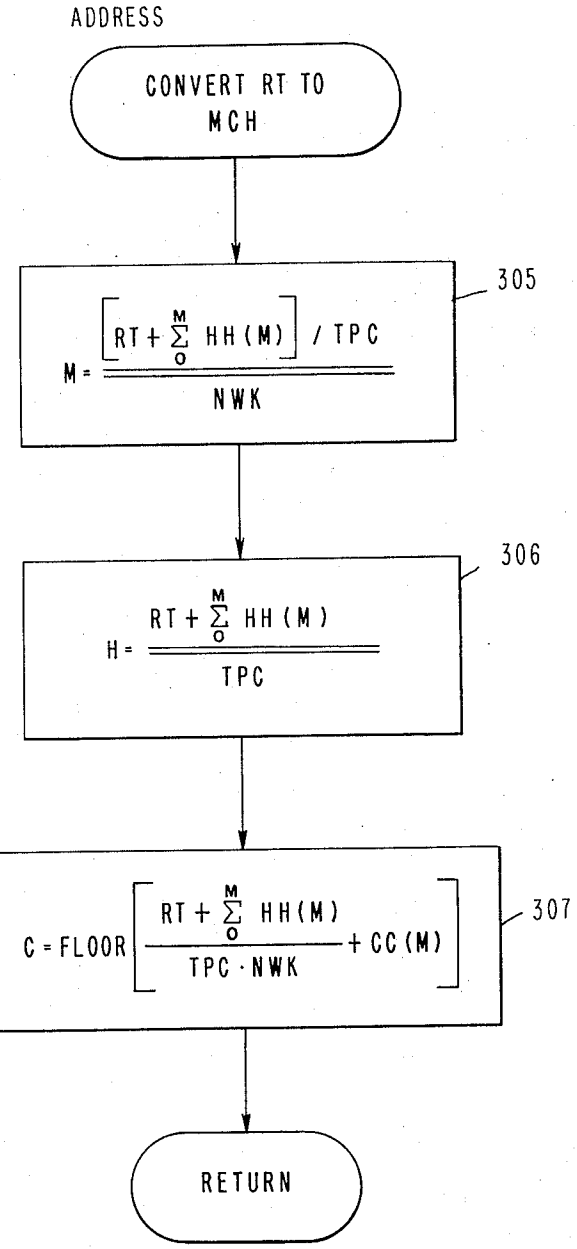

ADDRESS
CONVERT RT TO MCH
305
$M = \frac{\left[RT + \sum_{0}^{M} HH(M)\right] / TPC}{NWK}$
306
$H = \frac{RT + \sum_{0}^{M} HH(M)}{TPC}$
307
$C = FLOOR\left[\frac{RT + \sum_{0}^{M} HH(M)}{TPC \cdot NWK} + CC(M)\right]$
RETURN

FIG. 5

HH(0) = 5 CC(0) = 2 TPC = 20
HH(1) = 10 CC(1) = 5 NWK = 3
HH(2) = 4 CC(2) = 1 TPC · NWK = 60

	RT	M	C	H
15B	0	0	2	5
15A	0	0	2	5
15B	1			6
15A	1			6
15B	2			7
15A	2			7
	3			8
	3			8
	4			9
	4			9
	5			10
	5			10
	6			11
	6			11
	7			12
	7			12
	8			13
	8			13
	9			14
	9			14
	10			15
	10			15
	11			16
	11			16
	12			17
	12			17
	13			18
	13			18
	14			19
	14			19
	15	1	5	10
	15	0	3	0
	16			11
	16			1
	17			12
	17			2
	18			13
	18			3
	19			14
	19			4

RT	M	C	H
20	1	3	15
20	1	5	10
21			16
21			11
22			17
22			12
23			18
23			13
24			19
24			14
25	2	1	4
25			15
26			5
26			16
27			6
27			17
28			7
28			18
29			8
29			19
30			9
30	1	6	0
31			10
31			1
32			11
32			2
33			12
33			3
34			13
34			4
35			14
35			5
36			15
36			6
37			16
37			7
38			17
38			8
39			18
39			9

RT	M	C	H
40	2	1	19
40	2	1	4
41	0	3	0
41			5
42			1
42			6
43			2
43			7
44			3
44			8
45			4
45			9
46			5
46			10
47			6
47			11
48			7
48			12
49			8
49			13
50			9
50			14
51			10
51			15
52			11
52			16
53			12
53			17
54			13
54			18
55			14
55			19
56			15
56	2	2	0
57			16
57			1
58			17
58			2
59			18
59			3

FILE ORGANIZATION ON DIRECT ACCESS DISK DEVICE

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FIG. 6

VVV	WWW	MMM	CCC	HHH
0	14	0	2	5
15	19	0	3	0
20	29	1	5	10
30	39	1	6	0
40	55	2	1	4
56	60	2	2	0

FIG. 7

VVV	WWW	MMM	CCC	HHH
0	14	0	2	5
15	24	1	5	10
25	40	2	1	4
41	60	0	3	0

FIG. 8

