To the Honorable Commissioner of Patents and Trademarks or copy thereof.

1. Name of conveying party(ies):
   * Nobuya Matsumura
   * Fuminori Sai
   * Yuzo Nakagawa

2. Name and address of receiving party(ies):
   * Name: International Business Machines Corporation
   * Street Address: New Orchard Road
   * City: Armonk
   * State: NY
   * ZIP: 10504

   Additional name(s) of conveying party(ies) attached: Yes

   Additional name(s) & address(es) attached:

   Yes

3. Nature of conveyance:
   XX Assignment
   Execution Date: 08/17/98; 08/17/98; 08/17/98

4. Application number(s) or patent number(s):
   If this document is being filed together with a new application, the execution date of the application is:

   A. Patent Application No.(s)
      09/100,496

   B. Patent No.(s)

   Additional numbers attached:

   Yes

5. Name and address of party to whom correspondence concerning document should be mailed:
   * Name: IBM Corporation
   * Internal Address: Intellectual Property Law
   * Street Address: 5600 Cottle Road (L2PA/0142)
     San Jose, CA 95193

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   01 FC:581

   40.00 CH

6. Total Number of applications and patents involved: One

7. Total fee (37 CFR 3.41) $ 40.00
   Enclosed
   XX Authorized to be charged to deposit account

8. Deposit Account Number:
   09-0466

   To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

   Monica D. Lee
   August 31, 1998
   Date

   Total number of pages including cover sheet, attachments, and document: 2
ASSIGNMENT

Whereas, we

have invented certain improvements in

METHOD AND APPARATUS FOR CONTROLLING READ AND WRITE OPERATIONS IN A STORAGE DEVICE

and executed, respectively, a United States patent application therefor on


Whereas, INTERNATIONAL BUSINESS MACHINES CORPORATION, a corporation of New York, having a place of business at Armonk, New York 10504, (hereinafter called IBM), desires to acquire the entire right, title and interest in the said application and invention, and to any United States and foreign patents to be obtained therefor;

Now therefore, for a valuable consideration, receipt whereof is hereby acknowledged, we, the above named, hereby sell, assign, and transfer to IBM, its successors and assigns, the entire right, title and interest in the said application and invention therein disclosed for the United States and foreign countries, and all rights of priority resulting from the filing of said United States application, and we request the Commissioner of Patents to issue any Letters Patent granted upon the inventions set forth in said application to IBM, its successors and assigns; and we hereby agree that IBM may apply for foreign Letters Patent on said invention and we will execute all papers necessary in connection with the United States and foreign applications when called upon to do so by IBM.

Signed and sealed

(1) at Fujisawa on Aug. 17, 1998,

Nobuya Matsubara

INVENTOR

(2) at Fujisawa on Aug. 17, 1998,

Fuminori Sai

INVENTOR

(3) at Fujisawa on August 17, 1998,

Yuzo Nakagawa

INVENTOR

RECORDED: 09/03/1998

PATENT
REEL: 9431 FRAME: 0469