

### (12) United States Patent Tanimura

## (45) Date of Patent: Apr. 16, 2002

US 6,371,380 B1

### (54) NON-CONTACTING-TYPE INFORMATION STORING DEVICE

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- (73) Assignee: Sony Corporation, Tokyo (JP)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 09/410,281
- (22) Filed: Sep. 30, 1999

#### (30) Foreign Application Priority Data

- Oct. 2, 1998 (JP) ..... 10-281305
- (51) Int. Cl.<sup>7</sup> ...... G06K 19/06
- (58) **Field of Search** ...... 235/492, 441, 235/486, 488, 493, 487, 449, 450, 451

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 $\mathbf{JP}$ 

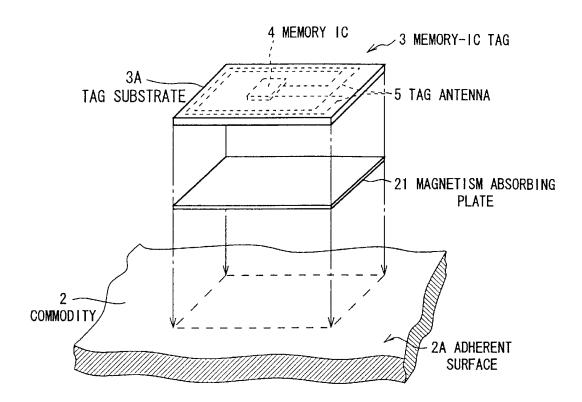
Primary Examiner-Karl D. Frech

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### (57) ABSTRACT

A non-contacting-type information storing device is stuck to the adherent surface of the object, and includes a storing means for storing the stated information and an antenna which has the stated loop form and which is connected to the storing means. The non-contacting-type information storing device further includes a magnetism absorbing plate which is made from high-permeable material and which is placed so that it is interposed between the adherent surface of the object and the antenna at the time when the information storing device is stuck to the adherent surface of the object. As a result, it is possible to provide a non-contacting-type information storing device in which the modulated magnetic-field given from the exterior can be absorbed by the antenna without being leaked to the adherent surface of the object even though the adherent surface of the object is made of metal. Thus the information can be read irrespective of the type of the material of the adherent surface of the object.

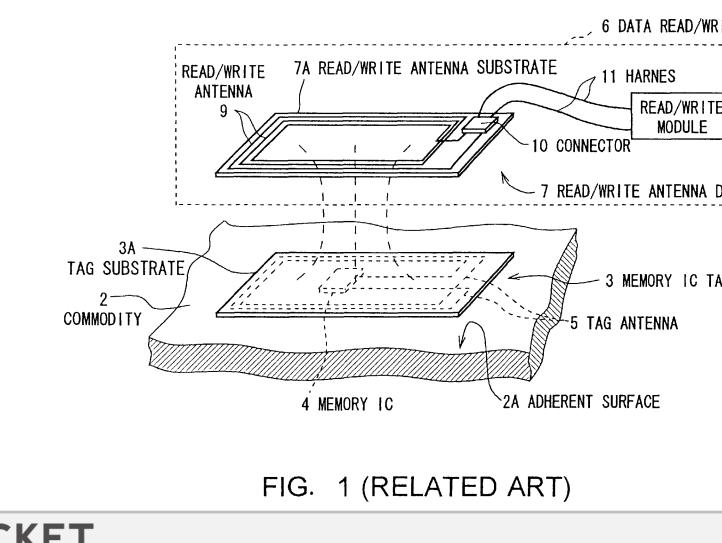
### 4 Claims, 7 Drawing Sheets



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### $\underline{1}$ DATA READ/WRITE SYSTEM

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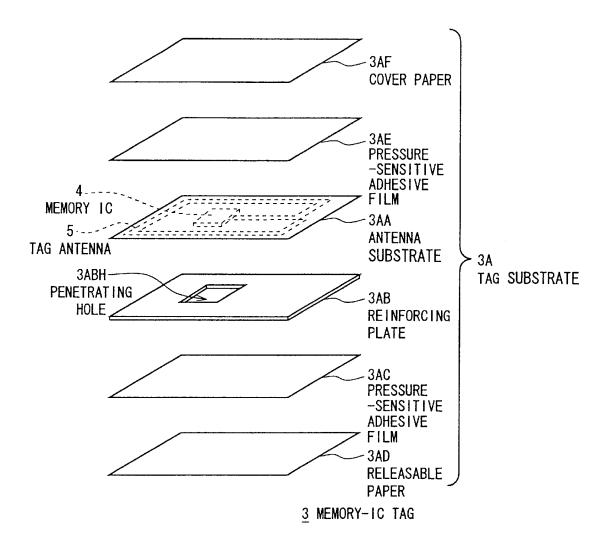


FIG. 2 (RELATED ART)

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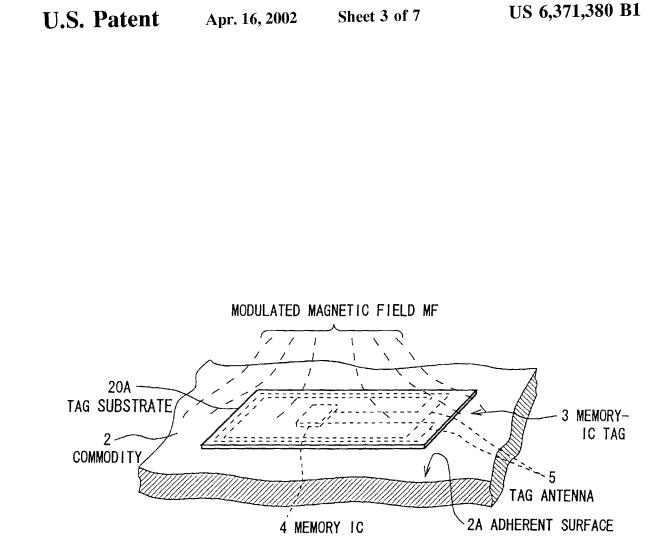
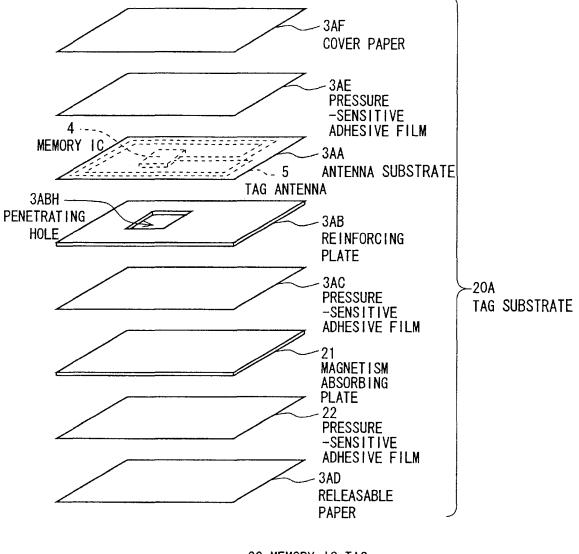


FIG. 3 (RELATED ART)

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Α



20 MEMORY-IC TAG

# FIG. 4

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