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(12) **United States Patent**  
**Racz et al.**

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(54) **DATA STORAGE AND ACCESS SYSTEMS**

(56) **References Cited**

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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 245 days.

This patent is subject to a terminal dis-  
claimer.

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Stockton LLP

**Related U.S. Application Data**

(63) Continuation of application No. 11/336,758, filed on  
Jan. 19, 2006, now Pat. No. 7,334,720, which is a  
continuation of application No. 10/111,716, filed as  
application No. PCT/GB00/04110 on Oct. 25, 2000,  
now abandoned.

(57) **ABSTRACT**

Data storage and access systems are described for download-  
ing and paying for data such as audio and video data, text,  
software, games and other types of data. A portable data  
carrier has an interface for sending and receiving data, non-  
volatile data memory for storing received content data and  
non-volatile payment validation memory for providing pay-  
ment validation data to an external device. The carrier may  
also store a record of access made to the stored content, and  
content use rules for controlling access to the stored content.  
Preferred embodiments store further access control data and  
supplementary data such as hot links to web sites and/or  
advertising data. A complementary data access terminal, data  
supply computer system and data access device are also  
described. The combination of payment data and stored con-  
tent data and, in preferred embodiments, use rule data, helps  
reduce the risk of unauthorized access to data such as com-  
pressed music and video data, especially over the Internet.

(30) **Foreign Application Priority Data**

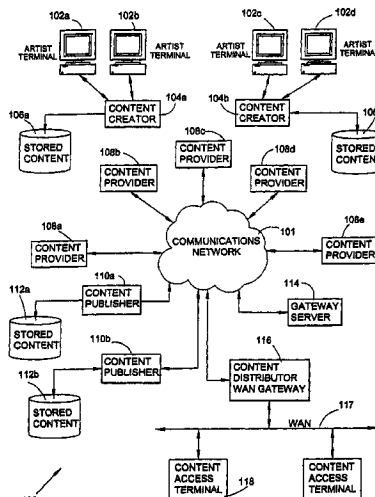
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(51) **Int. Cl.**  
**G06K 5/00** (2006.01)

(52) **U.S. Cl.** ..... **235/380; 235/382**

(58) **Field of Classification Search** ..... 235/451,  
235/380, 382, 492; 711/100, 101, 103  
See application file for complete search history.

**19 Claims, 17 Drawing Sheets**



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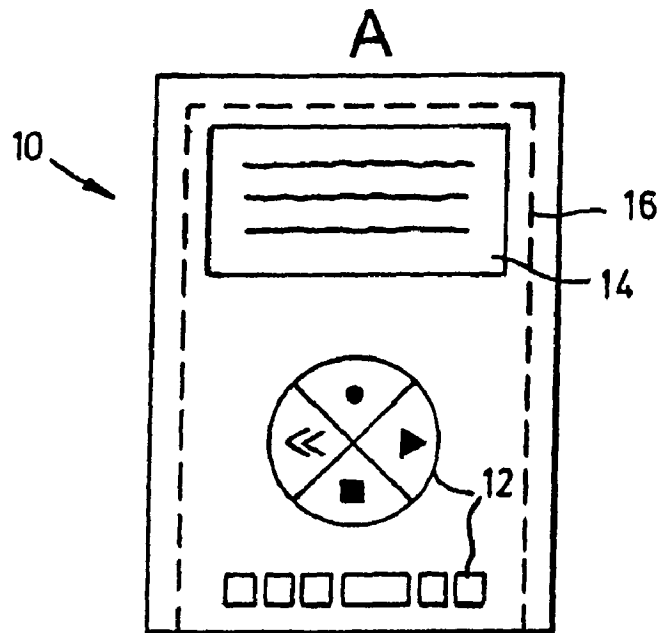
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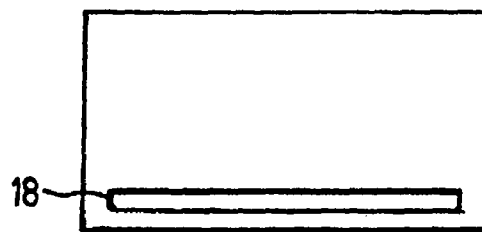
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Fig. 1



B



C

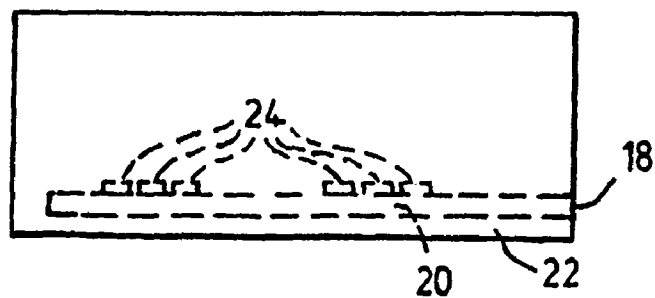


Fig. 2

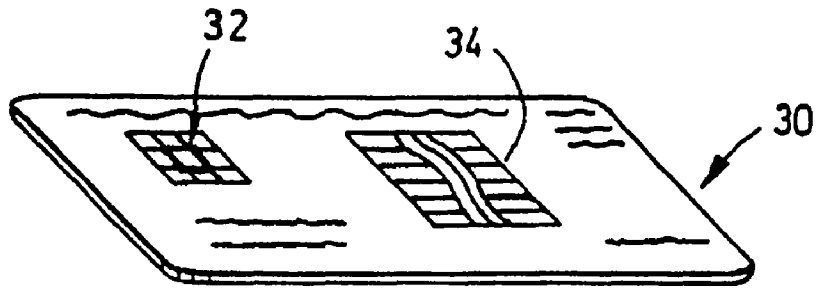


Fig. 3

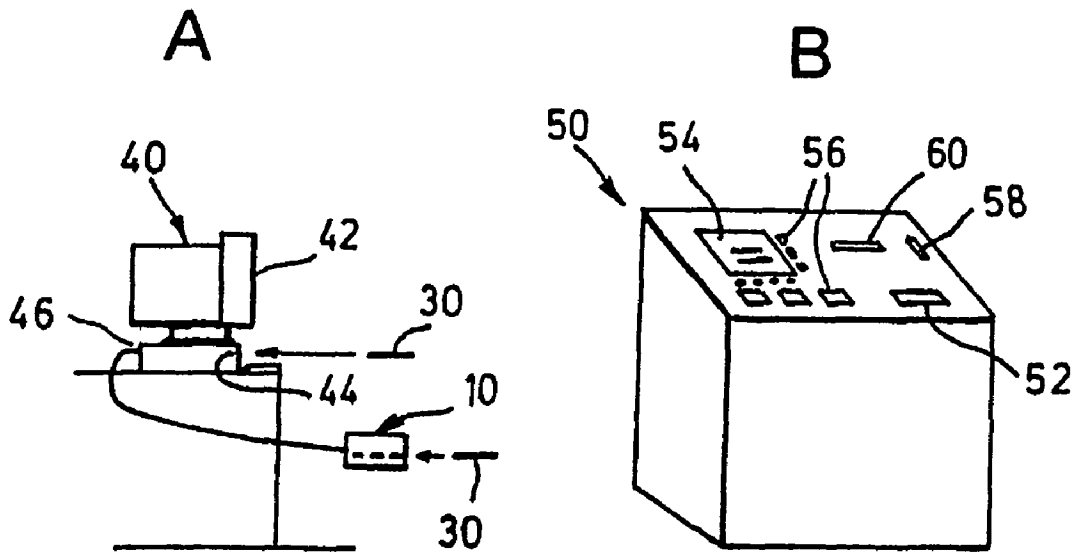
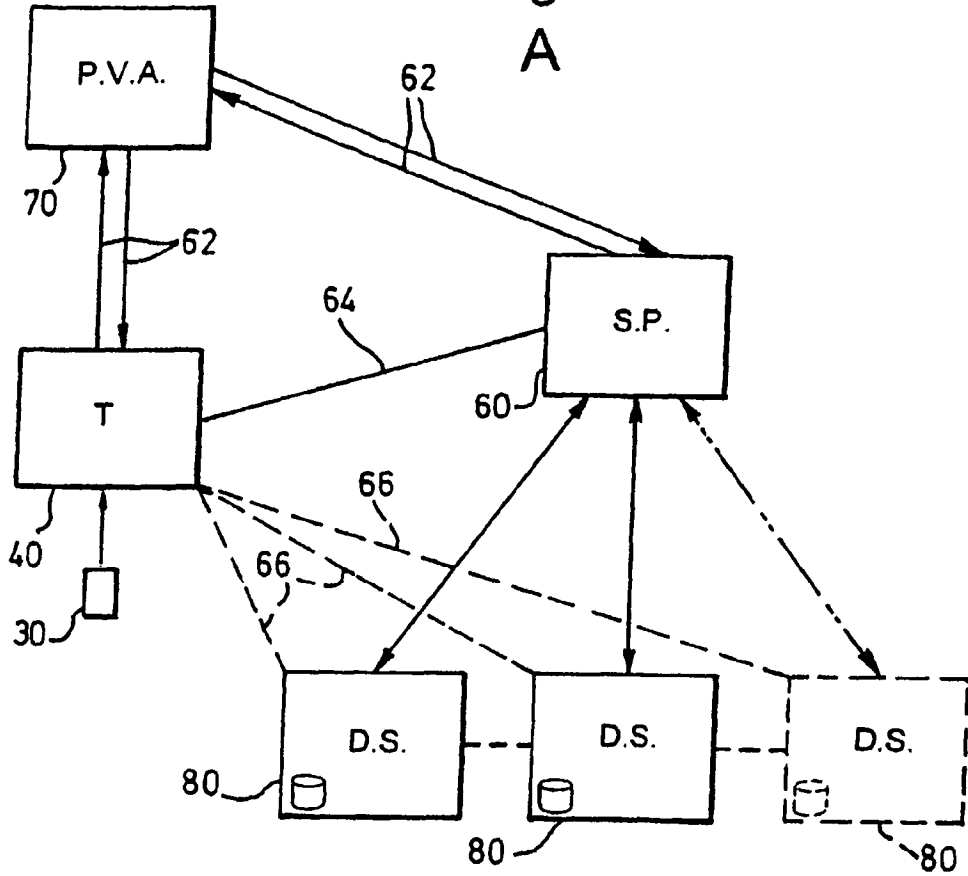
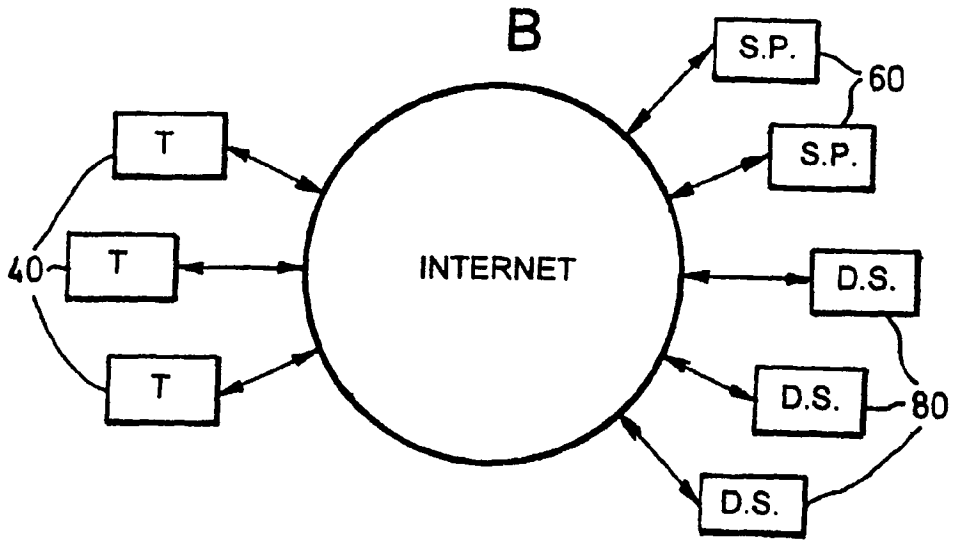


Fig. 4  
A



B



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