



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

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

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and Crew LLP

Related U.S. Application Data

(63) Continuation of application No. 10/111,716, filed as
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now abandoned.

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

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Data storage and access systems are described for down-
loading 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
payment 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 ter-
minal, data supply computer system and data access device
are also described. The combination of payment data and
stored content data and, in preferred embodiments, use rule
data, helps reduce the risk of unauthorized access to data
such as compressed music and video data, especially over
the Internet.

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

(52) **U.S. Cl.** **230/380; 235/382; 235/492;**
235/451

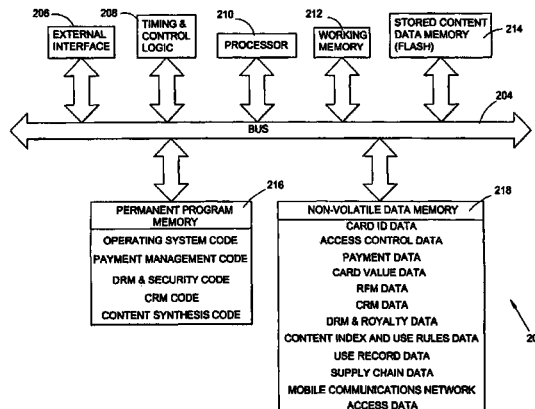
(58) **Field of Classification Search** **235/380,**
235/382, 492, 451; 711/100, 101, 103
See application file for complete search history.

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18 Claims, 17 Drawing Sheets



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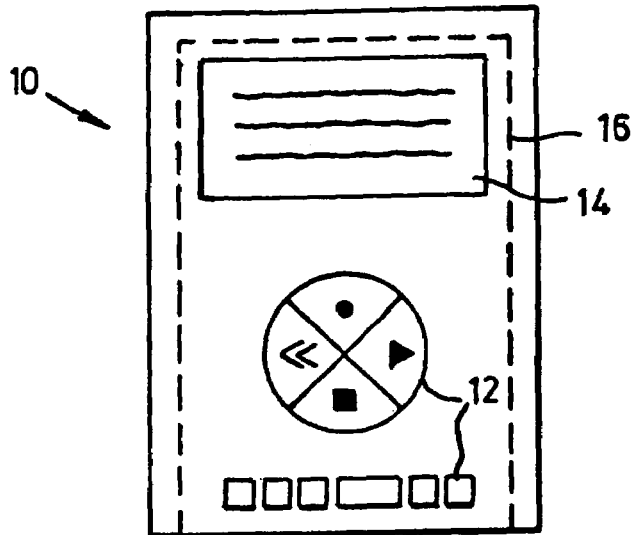
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Fig. 1

A



B



C

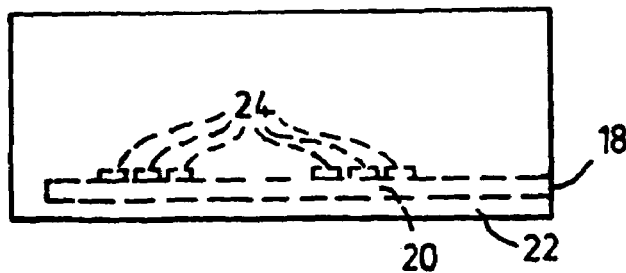


Fig. 2

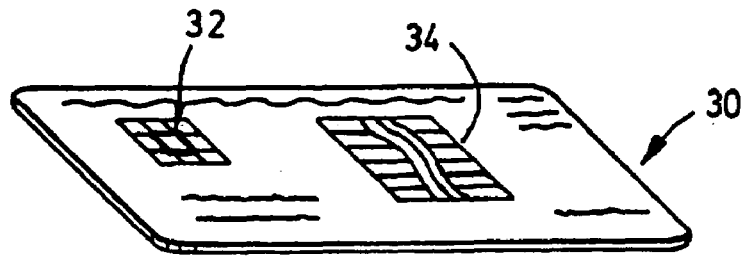


Fig. 3

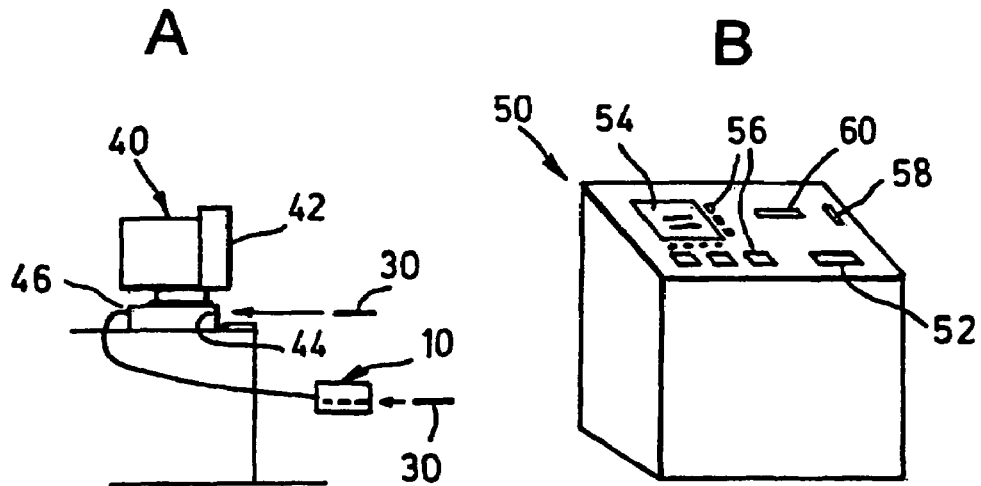
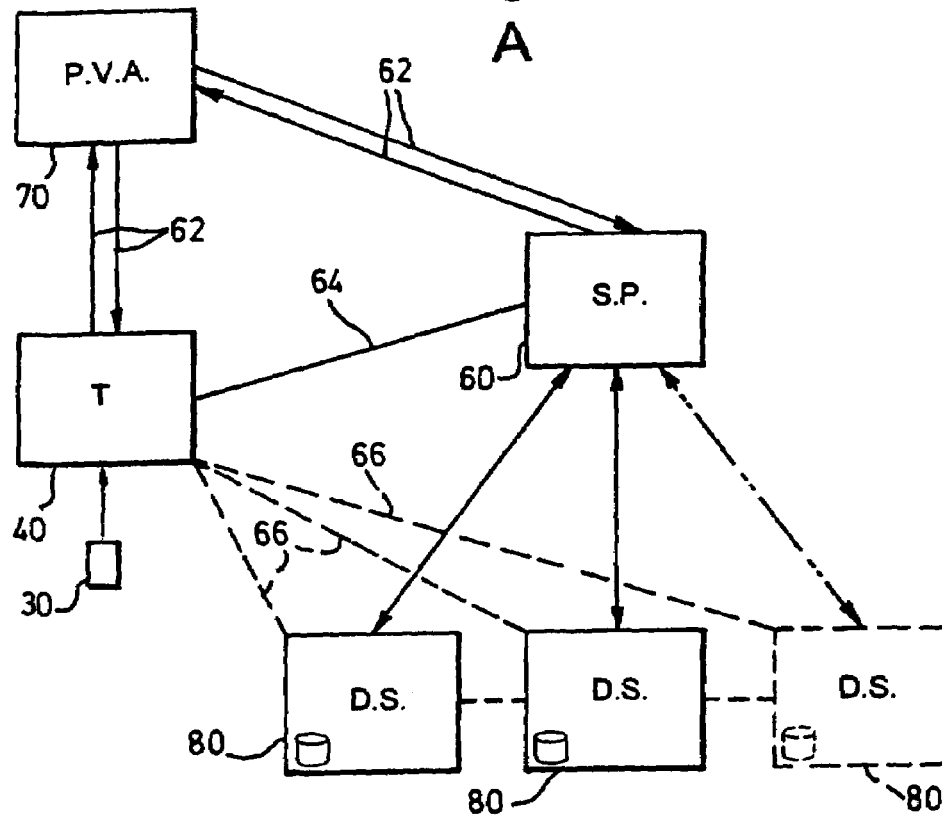
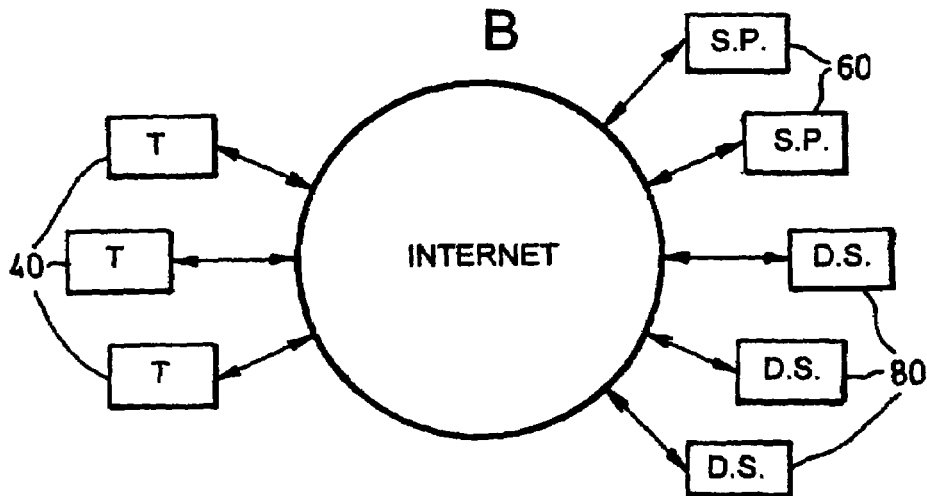


Fig. 4
A



B



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