Provisional patent application for a combined computer Human Interface Device and mass storage device

I, Hanmin Sharon Tam, have invented a concept and implementation involving the combination of a computer human interface device (1) and a mass storage device (2). Current human interface devices are single purpose. They are used to provide tactile input for computer. Mass storage devices are used for data transfers between personal computers. However where human interface devices are usually used, in laptops, data transfer ports such as Universal Serial Bus ports are limited in number. In such a case it is highly advantageous to have a multifunctional device.

It works in this way: a human interface device (1) is connected to a computer (3) through a data transfer port (1). It acts as an input device to the computer (3) and the subject uses the device as such. Concurrently the device is connected to the computer (3) as a mass storage device(2). The dual functionality is achieved through running data for the two separate devices through a single data transfer port (1). The hardware for these different devices will be combined through methods known to those skilled in the field. People often use USB mice for their portable computers (3). As they are often plugged into the computers, the media storage portion of my invention will in effect act as a convenient alternative flash hard drive (2). It will be easy to remove for data transfer.

The method or arrangement of wiring or connecting electrical components and mounting them in the device will be well known to those with ordinary skill in the electronic and mechanical arts. The arrangement of circuitry will be through one of a number of methods.

It is preferable to other systems because of the portability and convenience of having one device instead of two. Following the trend set by such devices as the iPhone in combining multiple devices such as the camera, iPod and phone, my invention will streamline modern life. Instead of having to unplug the human interface device from the data transfer port to accommodate a different device, my invention will allow easy access to these freed data transfer ports.

While there are many possible implementations of my concept, one specific implementation is of immediate significance: the USB mouse. It will involve the replacement of a portable laptop mouse and USB mass storage drive with a single device. This “mouse drive” is of particular importance because laptop users often carry both previous devices, but laptops have a limited area for ports.

There are many alternative ways that my setup can be implemented:

- The computer peripheral (1) used can be any device, including a mouse (9), tablet, Bluetooth headset, keyboard, etc.
- The data transfer port(2) can be any type of port compatible with the peripheral devices (i.e. USB, FireWire).
- The human interface device (1)can be composed of any type of material(s), including environmentally friendly plastic.
- The device can be connected with a wire or wirelessly with a wireless hub (5) connected to the data transfer port (2).

- The information for the mass storage device (2) can be stored in either the connection end (10) or the device end (10).
- The allocation of data transfer limitation with respect to the maximum data transfer speed may be determined by an algorithm executed from the device or from software installed on the computer.

Claims:

1. A human interface device (1) with the capability to store data as in a mass storage device (2) wherein:
    a. The human interface device (1)may be any of many computer peripherals such as a mouse (9), keyboard, tablet, or Bluetooth headset.
    b. The mass storage device (2) can access and be accessed by the computer (3) through any of many data transfer port types such as USB or Firewire.
    c. The human interface device(1) may be composed of any materials.
    d. The human interface device(1) may be manufactured based on any schematic in lieu of the proper functionality.
    e. The data transfer protocol of the data transfer port in allocating transfer speed to either mass storage or human interface device is controlled via the peripheral device, a separate logic chip, or a driver on the computer.
2. The system defined in claim 1 wherein:
    a. The human interface device is a tablet peripheral.
3. The system defined in claim 2a wherein:
    a. The tablet peripheral is either wireless or connected by wire and contains all pertinent software for proper functionality in addition to mass storage functionality.

I have included three drawings:

FIG. 1- Top view of mouse drive setup

FIG. 2- Side view of mouse drive setup

FIG. 3- Conceptual schematic without circuitry displayed

The components of my invention are:

- A human interface device (1)
- A data mass storage device (2)
- A computer (3)
- A data transfer port (4)
- A wireless data transfer hub (5)
- A software algorithm to control the data transfer and tactile input (6)
- Accessory devices (7)
- Wire (8)
- Plastic Enclosing (9)
- Female and Male USB connectors (10)