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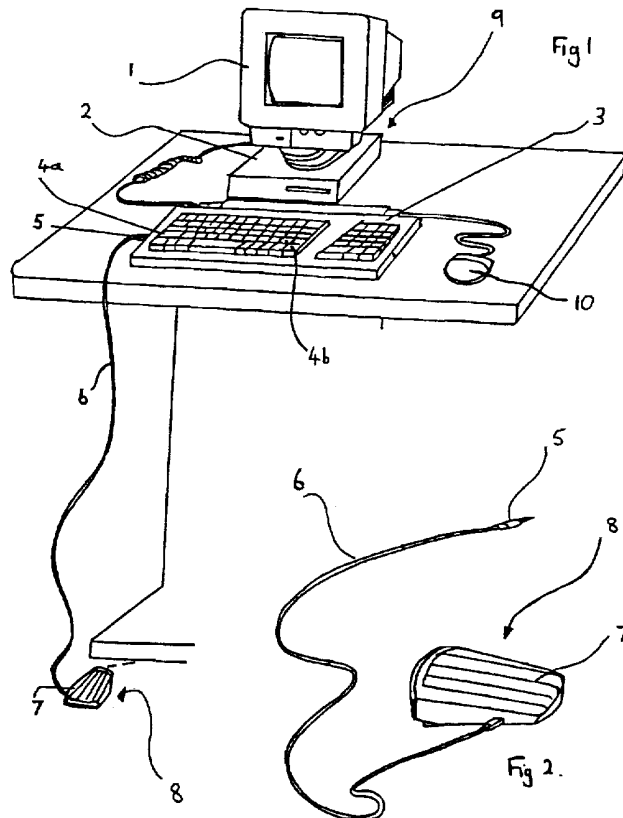
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JP 600263221 A US 5751274 A US 5231163 A  
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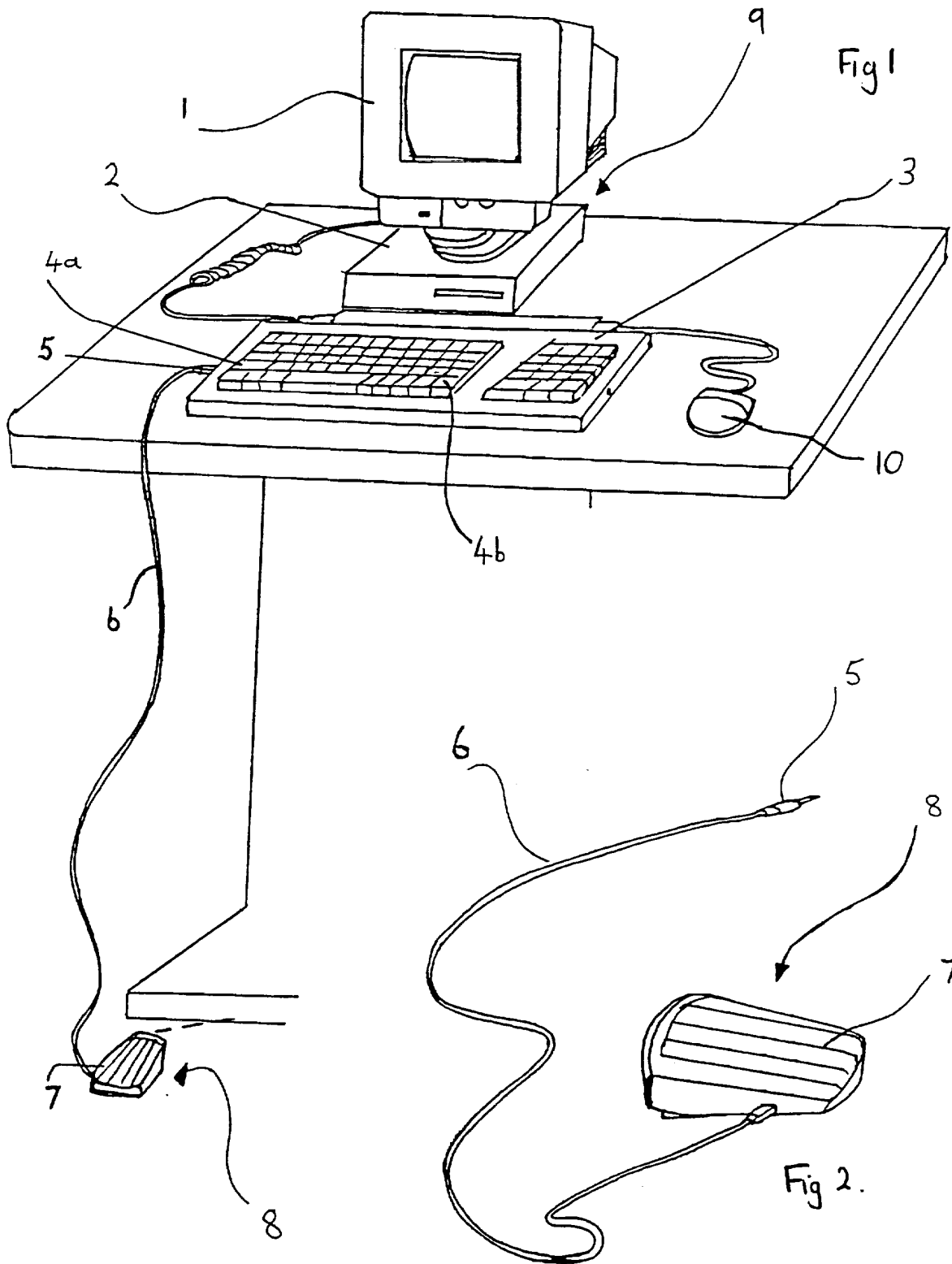
(54) Abstract Title  
**Foot pedal control for a data input device**

(57) The foot control 7 is used to switch the functions of the hand operable keys 4 of a data input device such as a keyboard 3. In particular it may provide a shift key for switching between upper and lower case letters. The foot control may be in the form of a pedal comprising a pressure sensitive pad with a non-slip surface, and may be connected to the keyboard 3 or the associated computer 2 by a cable or an infra-red link.



GB 2 351 339 A

1/1



Foot Pedal Control

The invention relates to a foot pedal control for use with a data input device which enables hand operable input keys of the data input device to be switched between one or more operational functions.

US Patent No. 5148152 describes a foot pedal control mechanism which simulates the foot pedal action for the control of the rudder control, braking and speed control of a computer simulation.

US Patent No. 5334997 describes a foot operated track ball which can be utilised to alter the position of a computer cursor.

US Patent No. 4856069 describes a foot pedal which can be used by a typist to transmit audio messages and digital data between a typing station and an information storage and retrieval system.

Foot operated devices of the types mentioned above only allow for direct control of the operation of a computer, in parallel with the keyboard. They do not allow for the facility whereby a keyboard is adapted so that it can perform a different function on operation of the foot pedal.

The present invention seeks to provide a foot pedal which will allow a keyboard to switch between one operational state to another. This is a particularly advantageous feature for persons that are not trained touch typists or people with limited dexterity, as it reduces the difficulties associated with pressing the shift keys accurately with the little fingers of the left or right hand.

According to the present invention there is provided a foot pedal control for use with a data input device, wherein the foot pedal enables one or more hand operable keys of the data input device to be switched between a plurality of functions or operational states.

In a preferred embodiment the foot pedal allows for a key on the keyboard to switch between a state whereby

the key provides for the typing of characters in lower and upper case. The keyboard may be a keyboard for an electric typewriter or it may be for a computer keyboard or indeed the keyboard may be for any keyboard operated device.

Preferred embodiments of the invention are illustrated in the drawings and will be described below. In said drawings:

Fig. 1 shows a computer with a keyboard which is attached to a foot pedal, and

Fig. 2 shows an enlarged view of the foot pedal as shown in figure 1

Figure 1 shows a computer arrangement 9 comprising a monitor 1 standing on a computer drive unit 2, with the monitor and drive unit being connected to a keyboard 3. The keyboard which is typically a QUERTY keyboard has general keys 4b as well as a shift key 4a which is typically situated towards the left hand side of the keyboard. However, it is envisaged that the shift key may be situated at any location on the keyboard. The foot pedal is connected to connecting element 6 such as an elongate lead 6 at a first lead end and a second lead end has attachment means 5 for mating attachment with means on the keyboard. The mating attachment comprises a pin and socket attachment with the pin being situated at the second lead end of lead 6 and the socket being situated on the keyboard, however it is envisaged that in an alternative arrangement the socket may be on the elongate lead 6 with the pin being part of the keyboard. A foot pedal 8 is connected to the keyboard 3 by way of the lead 6. The surface of the foot pedal may have a non-slip coating which provides the computer operator with good foot contact with the foot pedal.

The keyboard has main keys 4b and also a shift key 4a. A mouse 10 is also attached to the keyboard. When a computer operator presses the shift key 4a in conjunction with another key on the keyboard 4b, then the key 4b can have a function in addition to that which it has when pressed without the shift key. For example, the shift key

enables character keys to operate in upper case, whereas if the character key is operated without the shift key, it will operate in lower case. Operation of two keys simultaneously can be difficult for individuals who are unaccustomed to touch typing and even for those that can touch type there is the likelihood that hand strain may occur due to having to reach between keys.

In the present invention the foot pedal 8 takes over the function of the shift key (or other keys) thereby reducing the problems mentioned.

In particular, the foot pedal would not have to be connected to the keyboard directly and it could be connected to the computer just like any other piece of hardware. It could be connected to the hard disk drive, for example by using a USB (Universal Serial Bus) cable. A program called an "extension" could be written which would be installed in the computer to configure the foot pedal with the computer so that the computer knows what the foot pedal is and how to interpret the signals coming from the foot pedal. The use of the extension software would avoid the need for the keyboard to be modified so that it can be used with the foot pedal. Also, a control panel could be written into the computer and this control panel is a form of extension which allows the computer to chose the different options that the peripheral provides. The control panel for the foot pedal would let the user specify which key they operate. The system can also be used when other peripherals such as a CD drive or a ZIP drive is connected.

The invention has been described with reference to operation of the shift key but it may be used to operate any keys on the keyboard, for example, it may be used to control the "ALT" key or the "Control" key when used in conjunction with the function keys of the keyboard, thereby allowing the function keys to be switched between functions/operational states.

Further, although the invention has been described with reference to there being a direct contact between the

foot pedal 8 and the keyboard 3 by way of a lead 6, it is envisaged that pressing of the foot pedal may cause an infra red or radio signal to be transmitted to a receiver on the key board or in fact on any part of the computer set up which in turn cause a key on the key board to be switched between functions.

Claims

1. A foot pedal control for use with a data input device, wherein the foot pedal enables one or more hand operable keys of the data input device to be switched between a plurality of functions or operational states.
2. A foot pedal control according to claim 1 wherein the data input device is a keyboard.
3. A foot pedal control according to claim 1 or claim 2 wherein one of the keys is a shift key for switching between lower and upper case letters.
4. A foot pedal control according to any preceding claim, wherein the foot pedal control comprises a pressure sensitive pad.
5. A foot pedal control according to claims 1 to 3, wherein the foot pedal control comprises an infra red control.
6. A foot pedal control according to any preceding claim having a non-slip surface providing contact with a foot operating the foot pedal control.
7. A foot pedal control for use with a data input device substantially as described herein with reference to, and as illustrated in, the accompanying drawings.



6

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Claims searched: 1-7

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**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK Cl (Ed.R): F2Y YPD, YTB.  
Int Cl (Ed.7): G06F 3/023.  
Other: ONLINE: EPODOC, JAPIO, WPI.

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
Y	GB 2,045,527 A (WEATHERLY).	4.
X, Y	WO 89/02369 A ((PHAM) - see page 5 lines 4-10.	X: 1-2; Y: 4-6.
Y	US 5,751,274 (DAVIS).	6.
X	US 5,251,163 (ROUHANI) - note figures 1, 5, 6 and 8 showing a device 1, remote from the keyboard 18, which device carries, shift, control and alt keys.	1-3.
Y	US 5,079,536 (CHAPMAN).	4.
Y	US 4,426,738 (OLYMPUS OPTICAL CO LTD)	5.
Y	FR 2,708,163 (SMIDTAS)	5-6.
X, Y	JP 60-263221 (NIPPON DENKI KK), cited from the abstract.	X: 1-3; Y: 4-6.

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.