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APPARATUS FOR DEVICE CONFIGURATION**FIELD OF THE INVENTION**

The present invention relates to an apparatus for the more
5 convenient setting up or configuration of a device, of
particular but by means exclusive application in the
setting up or configuration of electronic devices such as
personal computers.

10 BACKGROUND OF THE INVENTION

Existing systems for facilitating the configuration of
devices such as personal computers include the labelling
of each electrical socket or jack, so that an instruction
manual can direct a user to connect a specific socket on
15 one component to a specific socket on another component by
means of a suitable electrical cable. The user, by this
means, is not required to recognise the function of the
relevant socket solely from the number of pins or type of
socket. This technique is commonly employed with personal
20 computers and their peripheral devices, home audio and
video systems, scientific instruments, and the like, and
may be supplemented by the provision of colour coded
cables.

25 This technique assumes, however, that the user can read
the label (whether in word or symbolic form) and that the
user can locate the relevant socket in the first instance
(which can be difficult in environments of low lighting
and/or poor access).

30 US Patent No. 5321602 discloses a control panel for a
machine, which can be used to set up such a machine. The
control panel includes a plurality of control switches,
along conventional lines, but each control switch is
35 associated with an illumination means or the like
typically adjacent to each respective switch for
indicating, at each step of a step up sequence, those

switches corresponding to valid choices or selections at any point.

This control panel, however, is only of value in the configuring of a system that has already been assembled,
5 and which merely requires the establishment of correct parameter settings. It would not assist a user in, for example, assembling the individual electrical or mechanical components of such a machine.

10 SUMMARY OF THE INVENTION

It is an object of the present invention to provide an apparatus for more clearly identifying the correct socket, jack, port or the like a device during the setting up or configuration of the device.

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The present invention provides, therefore, an apparatus for setting up a device, the device having a plurality of components, each component having at least one connector for connecting a respective component to at least one
20 other of said plurality of components by means of a conduit, said apparatus including:

a plurality of signalling means for signalling the location of respective connectors to a user; and

25 activation means for selectively activating a respective signalling means;

wherein said activation means is operable to selectively activate that signalling means corresponding to a desired connector, whereby the location of said respective connector is signalled to the user.

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A signalling means may comprise illumination means located near a respective connector so that the location of the respective signalling means is indicative of the location of the respective connector. Alternatively, a respective
35 signalling means may comprise an illumination means located to illuminate said respective connector when said respective signalling means is activated to thereby signal the location of said respective connector to said user.

Any alternative suitable signalling means may be employed. For example, one or more of the signalling means may each comprise sound-emitting means for emitting an audible signal from a location near a respective connector, or a
5 mechanical member that, when activated, projects from a location near the respective connector. In one embodiment, one or more of the signalling means may each include a rotating element bearing at least two distinguishable indicia, these different indicia
10 selectively exposed or concealed when the respective signalling means is activated. For example, when not activated, the signalling means may display a red indicium, and when activated a green indicium.

15 Preferably said activation means comprises one or more electrical switches or buttons provided with suitable indicia, each indicium indicative of the function of and corresponding to a respective connector. Thus, the activation means may comprise a plurality of buttons or
20 switches, each suitably labelled, or a single dial switch rotatable to any of a plurality of icons representing respective connectors.

In one embodiment, the device is a personal computer and
25 the components include a central processing unit, a monitor and a keyboard, and, optionally, a modem and/or a printer. The connectors comprise the mouse, printer, parallel and keyboard ports on the central processing unit and the corresponding ports on the other components. In
30 this embodiment the activation means preferably comprises a control panel provided with a plurality of buttons, each button provided with an icon indicative of the function of the corresponding connector.

35 Alternatively, the activation means may comprise a computer generated representation of a control panel with selectable switch icons, each switch icon selectable to activate a respective signalling means.

Further, the activation means may comprise a detachable control panel locatable on said device and connectable thereto by means of suitable connection means so that the activation means can control the signalling means. This
5 connection means may comprise a printed circuit board receivable by a corresponding electronic socket provided in said device, or mechanical coupling means.

Optionally, the apparatus includes instruction means for
10 providing instructions to a user and operable by said activation means, wherein said instruction means provides a user with instructions as to the connection of the respective connector when the corresponding signalling means is activated.

15 The instruction means may comprise an audio recording that, when a respective signalling means is activated, plays a portion of said audio recording indicating the connector whose corresponding signalling means has been
20 activated and/or the action that should be taken by a user in order to respond the activation of the respective signalling means.

Alternatively, the instruction means comprises a set of
25 instructions portions of which are selectively displayable on a screen, or a screen operable to display such instructions.

Preferably said instruction means includes a magnetic or
30 other recording of said instructions, and more preferably this recording is replaceable so that said instruction means can be provided with different instructions or with instructions in different languages.

35 Preferably the apparatus further includes an information card and retention means for retaining said card, said card provided with one or more of the following information: device specifications, error recovering

procedures, upgrade instructions, or manufacture, vendor or service contact details.

5 The present invention also provides a device provided with an apparatus, as described above, for setting up the device. The invention provides, in one particular embodiment, a computer provided with such an apparatus.

10 It should be noted that the components may be separate, as is the case with the central processing unit, monitor and keyboard of a personal computer, or the components may be components of an integral device that is configurable in a variety of ways by means of the connectors and suitable conduits. The conduits may comprise electrical cables,
15 fluid lines or any other means for communication between components of a device.

BRIEF DESCRIPTION OF THE DRAWING

20 In order that the present invention may be more clearly ascertained, preferred embodiments will now be described, by way of example, and by reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a central processing unit of a personal computer provided with an
25 easy set up apparatus according to a preferred embodiment of the present invention;

Figure 2 is rear view of the central processing unit of Figure 1;

30 Figure 3 is a perspective view of a central processing unit according to an alternative embodiment for the present invention;

Figure 4 is a view of the control panel of the central processing unit of Figure 3;

35 Figure 5 is a view of the printed circuit board according to a preferred embodiment of the present invention;

Figure 6A is a transparent cover for the control panel of the easy set up apparatus of Figure 1;

Figure 6B is a view of the control panel of the easy set up apparatus of Figure 1;

Figure 6C is a view of a replaceable sheet of icons for the control panel of Figure 6B; and

5 Figure 7 is an optional light according to a preferred embodiment of the present invention, for the apparatus of Figure 1 or Figure 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 The central processing unit (CPU) 12 of a personal computer provided with an easy set up apparatus according to a preferred embodiment of the present invention, is shown generally at 10 in Figure 1. The central processing unit 12 is provided, on its upper panel 14, with an
15 activation means of the easy set up apparatus in the form of a control panel 16. The control panel 16 is provided with a plurality of buttons 18 provided in a row along the top of the control panel 16. Below each of the buttons 18 is a respective icon 20 indicative of one of the connector
20 ports on the back panel (not shown) of the central processing unit 12. Thus, icons 20 indicate, respectively, Printer LPT1, Serial Port, Monitor, Mouse, Keyboard, etc.

25 The CPU 12 is also provided with a plastic card 22 located in a slot in the upper panel 14. Card 22 is provided with information concerning the central processing unit 12 and other components of the personal computer to which the CPU 12 is to be connected, such as processor type, RAM type,
30 graphics card, modem type and driver, and the like. Card 22 can be withdrawn from its slot and consulted should such information be required, thus avoiding the need to consult a manual that may be stored at another location.

Referring to Figure 2, the rear face 24 of CPU 12 includes the usual array of ports 26a,b,c,d,e, including a parallel port, a serial port, a modem jack, etc. Each of these ports is surrounded by an illumination means in the form of a miniature neon light (shown for simplicity only at 28 for port 26a). If port 26a is, say, a parallel port for a printer, and a user wishes to install such a printer, the user depresses that button 18 on control panel 16 that is adjacent to a printer icon; the neon light 28 surrounding printer port 26a is then illuminated so that the user immediately knows to which the port the printer should be connected.

Neon light 28 may be replaced by any alternative suitable illumination means, such as one or more LEDs.

Figure 3 is a view of a central processing unit 30 provided with an easy set up apparatus according to a further preferred embodiment of the present invention. The easy set up apparatus includes a removable control panel 32. Control panel 32 is, similarly to control panel 16, provided with a plurality of buttons 34, each corresponding to a port on the rear panel 36 of CPU 30. Each button 34 is provided with an adjacent icon (not shown) indicative of the function of the corresponding port. Control panel 32 is also provided with a loudspeaker 38 and a sound chip or sound cartridge (not shown) so that, when a button 34 is depressed, both a neon light (shown, for example, at 40) is illuminated around the corresponding port, and a verbal description of the port is emitted from loudspeaker 38. This verbal description may merely name the port, or describe its appearance and/or location.

Each corner of control panel 32 is provided with a pin 42 locatable in corresponding slots 44 in the upper face of the CPU 30. These pins and slots allow the control panel 32 to be retained on the CPU 30, but also be removed
5 should a different configuration of ports or port functions be provided.

The electronic connection between control panel 32 and central processing unit 30 is established by means of
10 printed circuit board 46 provided in the underside of control panel 32 and receivable in corresponding slot 48 in the upper face of the CPU 30.

Referring to Figure 4, which is a bottom view of control
15 panel 32, the sound chip 50 is received in slot 52 and, being removable, allows alternative descriptions or languages to be employed. This audio component is processed and played back in a conventional manner and by conventional means, when activated by the corresponding
20 button 34.

Figure 5 is a view of an electronic circuit board 60 according to a preferred embodiment of the present invention. This circuit board forms a part of the easy
25 set up apparatus of either the embodiment of Figure 1 or that of Figure 3, and is located within the control panel (respectively 16 and 32) of these apparatus.

The circuit board 60 includes connecting pins 62, each pin
30 62 corresponding to an individual button (respectively, 18 or 34), and connectable by means of ribbon cable 64 and individual connecting plugs 66 to the corresponding illumination means, such as neon light, beside the

corresponding port. The connecting plugs 66 can be swapped around to remap the correspondence between the buttons and the illumination means, according to manufacturers' or users' requirements.

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It is also possible to customise the control panel. This is shown in Figures 6A, 6B and 6C for the embodiment of Figure 1, but may be done in a similar manner for the embodiment of Figure 3. Figure 6B is a view of control
10 panel 16 with buttons 18. Control panel 16 is provided with a removable and replaceable sheet 70 bearing icons 20. This sheet 70 is locatable generally at 72 below buttons 18, so that icons 20 and buttons 18 are aligned. Transparent retaining sheet 72 (see Figure 6A) is then
15 placed over sheet 70; each corner of retaining sheet 72 is provided with a securing tab 74 locatable in a corresponding slot 76 of control panel 16.

Thus, control panel 16 can be customised according to the
20 users' or manufacturers' specifications.

Referring to Figure 7, to further aid in the connection of different components of a personal computer, the rear panel of a central processing unit may be provided with a
25 lamp 82. The lamp 82 includes a flexible arm 84, and is received in a socket 86 from which power is provided for the lamp 82. Further, the lamp 82 can be controlled from one of the switches on the control panel (16 or 32) so that a user is provided with additional light during the
30 set up procedure.

Socket 86 may instead be provided on other components, including a keyboard, computer monitor, or the like.

It will be appreciated that the present invention has applications with many devices. For example, an easy set up apparatus could be provided in a television receiver, to assist in connecting the television receiver to a video
5 cassette recorder, an antenna lead or other source or receiver of the audio/video signal.

Similarly, the video cassette recorder could itself be provided with an easy set up apparatus according to the
10 present invention, to facilitate connecting the video cassette recorder to a television.

Home audio systems also frequently comprise many components requiring connection. The amplifier, in
15 particular, is commonly connected to several components and could usefully be provided with an easy set up apparatus according to the present invention.

Modifications within the spirit and scope of the invention
20 may readily be effected by persons skilled in the art and it is to be understood, therefore, that this invention is not limited to the particular embodiments described by way of example hereinabove.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An apparatus for setting up a device, the device having a plurality of components, each component having at least one connector for connecting a respective component to at least one other of said plurality of components by means of a conduit, said apparatus including:
 - a plurality of signalling means for signalling the location of respective connectors to a user; and
 - activation means for selectively activating a respective signalling means;
 - wherein said activation means is operable to selectively activate that signalling means corresponding to a desired connector, whereby the location of said respective connector is signalled to the user.
2. An apparatus as claimed in claim 1, wherein said signalling means comprises illumination means located near a respective connector so that the location of the respective signalling means is indicative of the location of the respective connector.
3. An apparatus as claimed in claim 1, wherein a respective signalling means comprises an illumination means located to illuminate said respective connector when said respective signalling means is activated to thereby signal the location of said respective connector to said user.
4. An apparatus as claimed in any one of the preceding claims, wherein one or more of said signalling means each comprises sound-emitting means for emitting an audible signal from a location near a respective connector, or a mechanical member that, when activated, projects from a location near the respective connector.
5. An apparatus as claimed in any one of the preceding claims, wherein one or more of said signalling means each

includes a rotating element bearing at least two distinguishable indicia, these different indicia selectively exposed or concealed when the respective signalling means is activated.

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6. An apparatus as claimed in any one of the preceding claims, wherein said activation means comprises one or more electrical switches or buttons provided with suitable indicia, each indicium indicative of the function of and
10 corresponding to a respective connector.

7. An apparatus as claimed in any one of claims 1 to 5, wherein said activation means comprises a dial switch rotatable to any of a plurality of icons representing
15 respective connectors.

8. An apparatus as claimed in any one of the preceding claims, wherein said device is a personal computer and the components include a central processing unit, a monitor
20 and a keyboard, and, optionally, a modem and/or a printer.

9. An apparatus as claimed in claim 8, wherein said connectors comprise mouse, printer, parallel and keyboard ports on said central processing unit and the
25 corresponding ports on the other components.

10. An apparatus as claimed in either claims 8 or 9, wherein said activation means comprises a computer generated representation of a control panel with
30 selectable switch icons, each switch icon selectable to activate a respective signalling means.

11. An apparatus as claimed in any one of claims 1 to 9, wherein said activation means comprises a control panel
35 provided with a plurality of buttons, each button provided with an icon indicative of the function of the corresponding connector.

12. An apparatus as claimed in any one of the preceding claims, wherein said activation means comprises a detachable control panel locatable on said device and connectable thereto by means of suitable connection means
5 so that the activation means can control the signalling means.

13. An apparatus as claimed in claim 12, wherein said connection means comprises a printed circuit board
10 receivable by a corresponding electronic socket provided in said device, or mechanical coupling means.

14. An apparatus as claimed in any one of the preceding claims, wherein said apparatus includes instruction means
15 for providing instructions to a user and operable by said activation means, wherein said instruction means provides a user with instructions as to the connection of the respective connector when the corresponding signalling means is activated.

20 15. An apparatus as claimed in claim 14, wherein said instruction means comprises an audio recording that, when a respective signalling means is activated, plays a portion of said audio recording indicating the connector
25 whose corresponding signalling means has been activated and/or the action that should be taken by a user in order to respond the activation of the respective signalling means.

30 16. An apparatus as claimed in claim 14, wherein said instruction means comprises a set of instructions portions of which are selectively displayable on a screen, or a screen operable to display such instructions.

35 17. An apparatus as claimed in either claim 14 or 16, wherein said instruction means includes a magnetic or other recording of said instructions.

18. An apparatus as claimed in claim 17, wherein said recording is replaceable so that said instruction means can be provided with different instructions or with instructions in different languages.

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19. An apparatus as claimed in any one of the preceding claims, including an information card and retention means for retaining said card.

10 20. An apparatus as claimed in claim 19, wherein said card is provided with one or more of the following information: device specifications, error recovering procedures, upgrade instructions, or manufacture, vendor or service contact details.

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21. A device provided with an apparatus for setting up said device, said apparatus according to any one of the preceding claims.

20 22. A computer provided with an apparatus for setting up said computer, said apparatus according to any one of claims 1 to 20.