

**PERSONAL COMPUTER DEVICE HAVING  
CONSTANT TILT DISPLAY WITH ADJUSTABLE  
HEIGHT**

**BACKGROUND OF THE INVENTION**

**[0001]** 1. Field of the Invention

**[0002]** The present invention relates generally to information handling systems (IHS) and devices therein and more particularly to computers having a monitor that may be conveniently adjusted.

**[0003]** 2. Description of Related Art

**[0004]** IHS equipment such as computers (including notebooks, personal computers, etc.) are becoming smaller in size, in part, for improved portability. A notebook personal computer (PC) typically has a main unit with a keyboard, and a display unit that is connected to the main unit in such a manner so that the display unit may be freely opened and closed as a cover on the main unit. When in a closed position, the display unit typically covers the keyboard portion of the main unit. When the notebook PC is used thereafter, the display unit is opened so that the keyboard of the main unit and the screen (i.e., monitor) provided in the display unit are exposed and viewable to a user.

**[0005]** Typically, a user of a portable PC will move the PC from place to place, depending on the user's needs. For example, a user may decide to use the portable PC at a remote location (i.e., a location away from user's home or office), in transit (i.e., such as on an airplane or train to a user's destination), and similar. In each of these situations, it is desirable by the user to be able to conveniently view the display unit of the PC.

**[0006]** It is known that numerous efforts have been made over time with respect to adjusting the position or the angle of the display unit of a PC to enable a user to easily view the screen of the display unit. For example, Published Unexamined Utility Model Application No. 5-36523 and Published Unexamined Patent Application No. 8-179854, each of which is incorporated herein by reference, disclose techniques for adjusting the position or the angle of the display unit of a notebook PC. According to each of these referenced techniques, the main unit and the display unit of the notebook PC are connected by an arm, wherein one end of the arm is connected by a hinge to the main unit and the other end of the arm is connected by a hinge to the display unit. By this configuration, these techniques disclose a manner for freely adjusting the height of the display unit relative to the main unit and also to freely set the angle of the display unit.

**[0007]** However, in the notebook PCs described in Published Unexamined Utility Model Application No. 5-36523 and Published Unexamined Patent Application No. 8-179854, however, the display unit also tilts in conjunction with the movement of the arm when a user changes the height of the display unit by holding and moving the arm and some other portions. It is possible for a user to hold and move the display unit so that the angle of the display unit with respect to the user is constant. However, it is difficult to change the height of the display unit while maintaining the angle since the display unit is comparatively large.

**SUMMARY OF THE INVENTION**

**[0008]** Accordingly, there is a need for an apparatus that overcomes the problems discussed above. With the forego-

ing discussion in mind, it is a purpose of the present invention to provide a computer, inclusive of a monitor, that may be better handled and viewed by a user.

**[0009]** According to one embodiment, the present invention is a computer having a monitor with a display screen, a main unit having a controlling means for controlling display on the display screen, and an arm which connects the monitor and the main unit to each other. Preferably the arm includes a front plate, having one end rotatably connected to a first pivot of the main unit and the other end rotatably connected to a second pivot of the monitor; a rear plate having one end rotatably connected to a third pivot of the main unit and the other end rotatably connected to a fourth pivot of the monitor, such that the rear plate is linked to the front plate; and a resilient component provided on at least one of the front plate and the rear plate for applying a rotating force in a direction that moves the monitor away from the main unit. By way of example, a user of the present invention is able to easily raise the monitor of the computer from the main unit, since the rotating force is applied to at least one of the plates, and the rear plate constituting the arm. In a preferred embodiment, the second pivot and the fourth pivot are provided at a lower end of the monitor.

**[0010]** According to another embodiment of the present invention, the second pivot and the fourth pivot are provided at an end of the main unit and function to operate as hinges for setting the monitor in a state of being opened or closed with respect to the main unit.

**[0011]** In a preferred embodiment of the present invention, the distance between the first pivot and the third pivot and the distance between the second pivot and the fourth pivot are substantially equal to each other and the distance between the first pivot and the second pivot and the distance between the third pivot and the fourth pivot are also substantially equal to each other.

**[0012]** According to another embodiment, the present invention is a computer having a display means for displaying an image to a user, a control means for controlling the image displayed by the display means, an accommodation means for accommodating the control means, a connection means connecting the accommodation means and the display means to each other and capable of freely setting the distance between the display means and a viewing point of the user within a predetermined range, and a load means for imposing a load such that a force necessary for moving the display means away from the viewing point is larger than a force necessary for bringing the display means closer to the viewing point when the distance is adjusted.

**[0013]** The connection means maintains the angle of the display means with respect to the viewing point even when the distance is changed. Additionally, in a preferred implementation, the connection means is accommodated in a recessed portion provided in a surface of the accommodation means.

**[0014]** According to another embodiment, the present invention is a monitor unit connected to a computer, in which a user may readily grasp the present invention. In this embodiment, the monitor unit has a monitor in which a display screen is formed, an arm extending from the monitor, a fixing portion in which the monitor and the arm are supported, a first hinge portion which rotatably connects the