

axis. The hinging assembly **13** may also include an A hinge **30** that couples the support plate **97** (or a portion thereof) to the display unit **10** such that the display unit **10** may rotate about an axis of rotation perpendicular to the shaft **98** (i.e., parallel to the top surface **55** of the base unit).

[0071] As shown in FIG. 13(c), in embodiments of the invention, the B hinge **32** may be a ball bearing having a inner race **99** coupled to the shaft **98** and an outer race **101** coupled to the base unit **12**. A number of rolling elements **102**, may be packed in between the inner race **99** and the outer race **101** to permit rotation of the inner race **99** relative to the outer race **101**. The rolling elements **102** may be lubricated to smoothen this rotational motion.

[0072] The B hinge **32** may be locked to prevent swiveling (i.e., rotation about the vertical axis) of the display unit **10** when the portable computer is not in the laptop configuration. This may be accomplished by coupling a locking pin **103** to components of the hinging assembly **13** that would otherwise rotate about the vertical axis with respect to each other. For example, the locking pin **103** may be pivotally coupled to the inner race of the B hinge **32**, the shaft **98**, the support plate **97** or the display unit **10** at one end. A second end of the locking pin **103** may be inserted into a cavity **105** in the outer race **101** of the B hinge **30** or a portion of the base unit **12**.

[0073] A cable **100** may connect components in the base unit **12** to components in the display unit **10** so that signals representative of user input, data, control commands, status information, or the like may be transmitted therebetween. In embodiments of the invention similar to that shown in FIGS. 13(a)-13(e), the shaft **98** may be hollow and a portion of the cable **100** may pass through the interior of the shaft **98**. The cable may also pass through or along a surface of the support plate **97** and the A hinge **30** (or portions thereof) to the display unit **10**. The rotation of the B hinge **32** may be limited (e.g., using a physical stop) to prevent excessive twisting of the cable **100**.

[0074] Alternatively, as shown in FIGS. 14(a)-14(f), the locking pin **103** may be pivotally attached at one end to a lever **104** running through the base unit **12**, and the other end of the locking pin **103** may be inserted into a cavity **105** of a component that rotates about the vertical axis (i.e., swivels) relative to the base unit **12**, such as the inner race of the B hinge **32**, the shaft **98**, etc. It may be preferable to couple the inserted end of the locking pin **103** into an element that rotates within the framework of the base unit **12**, so as to protect the locking pin from damage. In order to initiate the rotation/swiveling of the B hinge **32**, the lever **104** may be actuated to pivot the locking pin **103** so as to release the free end of the locking pin **103** from the cavity **105**. Actuating the lever **104** may cause the lever **104** to be pushed in toward the inner race **99** of the B hinge **32** and may be accomplished with a push button, or some other user-accessible mechanism.

[0075] As shown in FIGS. 14(a)-14(c), in embodiments of the invention, the component into which the locking pin **103** is inserted may have two cavities—a first cavity **105** corresponding to the laptop configuration and a second cavity **106** corresponding to the configuration in which the display unit **10** has been swiveled approximately 180°. The locking pin **103** may be released from the first cavity **105** to begin swiveling of the display unit **10** and may be inserted into the second cavity **106** when swiveling is completed.

[0076] A latching assembly **60**, an embodiment of which is shown in FIGS. 6(a)-6(e) may also be included in embodiments of the invention of the type shown in FIGS. 10-14 to maintain the portable computer in a closed configuration, a tablet configuration, or both.

[0077] While the description above refers to particular embodiments of the present invention, it should be readily apparent to people of ordinary skill in the art that a number of modifications may be made without departing from the spirit thereof. The accompanying claims are intended to cover such modifications as would fall within the true spirit and scope of the invention. The presently disclosed embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than the foregoing description. All changes that come within the meaning of and range of equivalency of the claims are intended to be embraced therein.

What is claimed is:

1. A portable computer configurable in a tablet configuration, a laptop configuration, and a closed configuration, said portable computer comprising:

a display unit having a display device and a back surface;

a base unit having a primary input device and a bottom surface; and

a hinging assembly coupling said display unit to said base unit, said hinging assembly having a first hinge with a first axis of rotation and a second hinge with a second axis of rotation, wherein

said back surface of said display unit is in contact with said bottom surface of said base unit when said portable computer is in said tablet mode,

said primary input device and said display device are between said back surface of said display unit and said bottom surface of said base unit when said portable computer is in said closed configuration,

one of said first hinge and said second hinge is rotated to reconfigure said portable computer between said closed configuration and said laptop configuration, and

said first hinge and said second hinge are rotated to reconfigure said portable computer between said closed configuration and said tablet configuration.

2. The portable computer according to claim 1, wherein said first axis of rotation and said second axis of rotation are parallel.

3. The portable computer according to claim 2, wherein said first axis of rotation is laterally offset from said second axis of rotation.

4. The portable computer according to claim 2, wherein the rotation of said first hinge and said second hinge permits said display unit to rotate approximately 360 degrees relative to said base unit.

5. The portable computer according to claim 2, wherein a first friction force resists rotation of said first hinge about said first axis of rotation, and further wherein a second friction force resists rotation of said second hinge about said second axis of rotation, and further wherein said first friction force is of lesser magnitude than said second friction force.