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Pruett

(54) COMPUTER WITH MULTIPLE SCREENS

(76) Inventor: **Lisa J. Pruett**, Lucas, TX (US)

Correspondence Address:
WILSON DANIEL SWAYZE, JR.
3804 CLEARWATER CT.
PLANO, TX 75025 (US)

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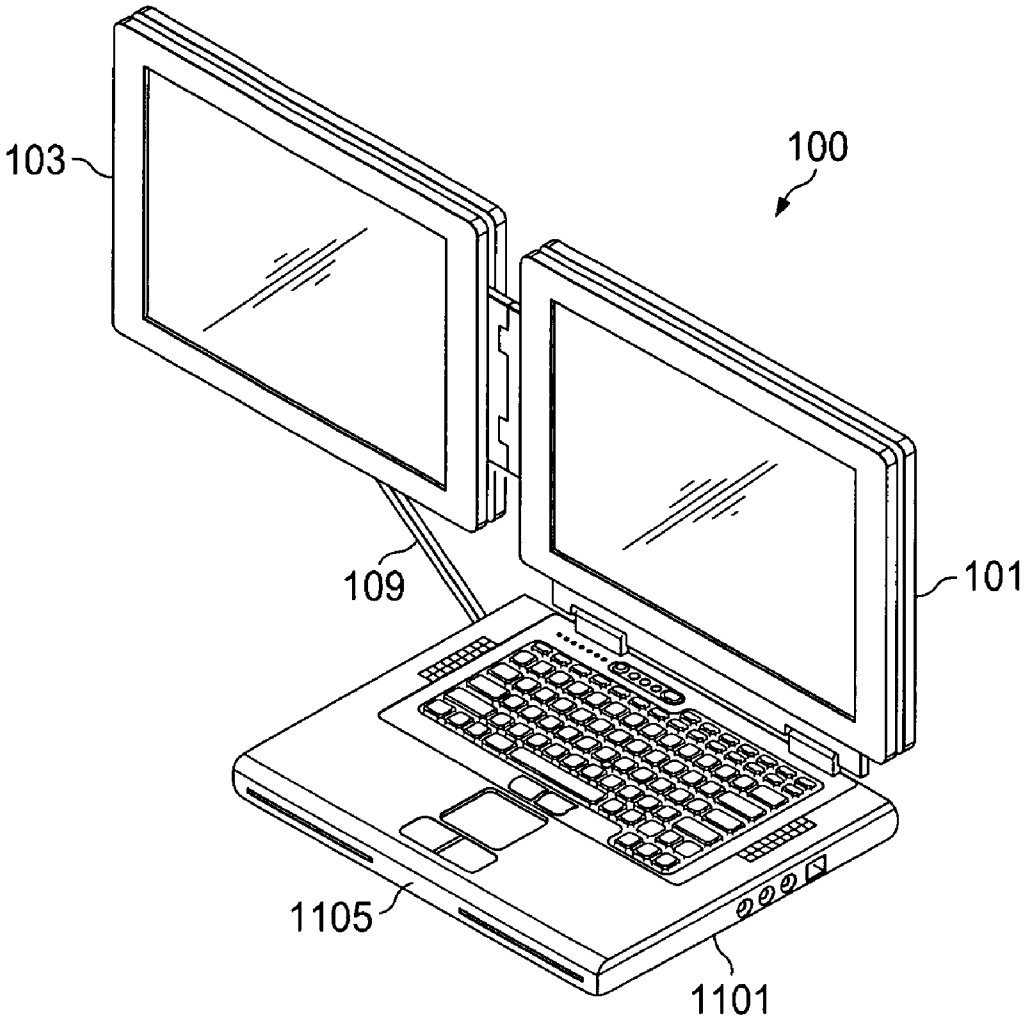
(52) **U.S. Cl.** **345/1.1**

(57) **ABSTRACT**

A laptop computer, notebook or personal computer may include a base member including computer electronics, a first screen positioned substantially over the base member and electrically connected to the base member, and a second screen extending substantially vertically from the first screen and electrically connected to the base member. The second screen may pivot with respect to the first screen, and the second screen may pivot behind the first screen. The second screen may move on tracks to extend and retract the second screen, and an arm may connect the base member and the second screen. The first screen and the second screen may be substantially centered with respect to the base member, and the laptop computer may include a third screen which substantially horizontally extends from the first screen. The second screen may extend substantially vertically from the first screen.



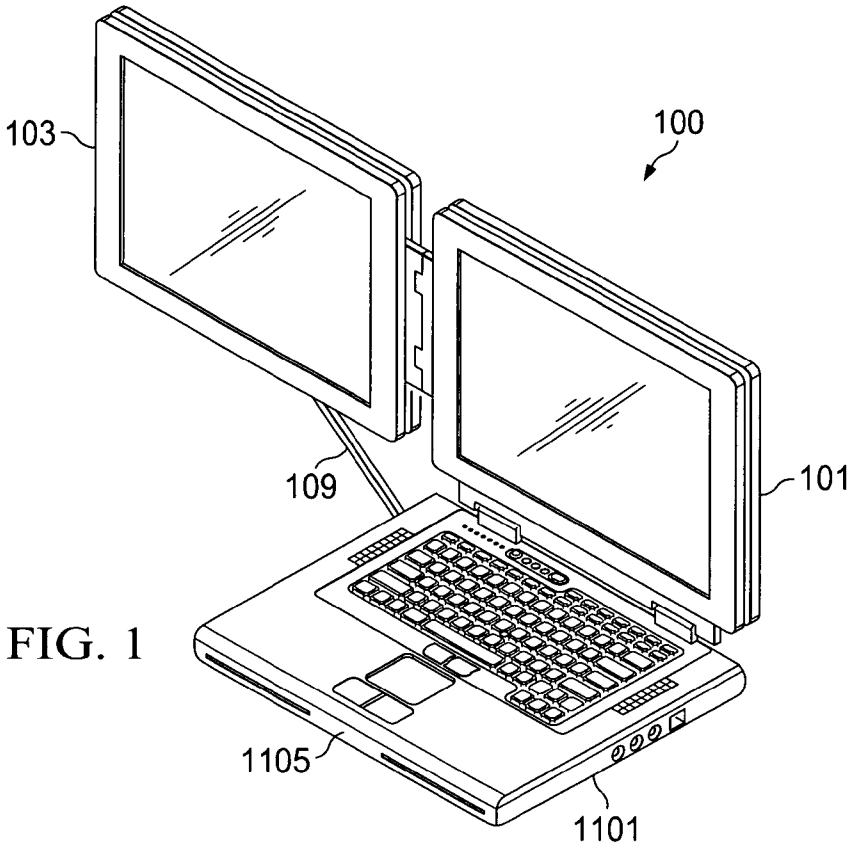


FIG. 1

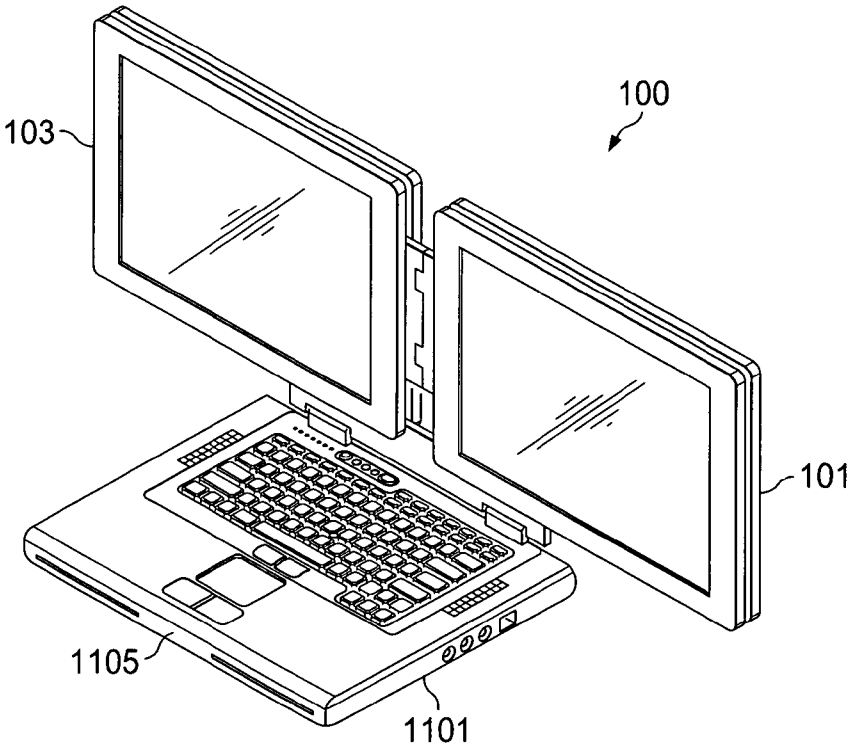


FIG. 2

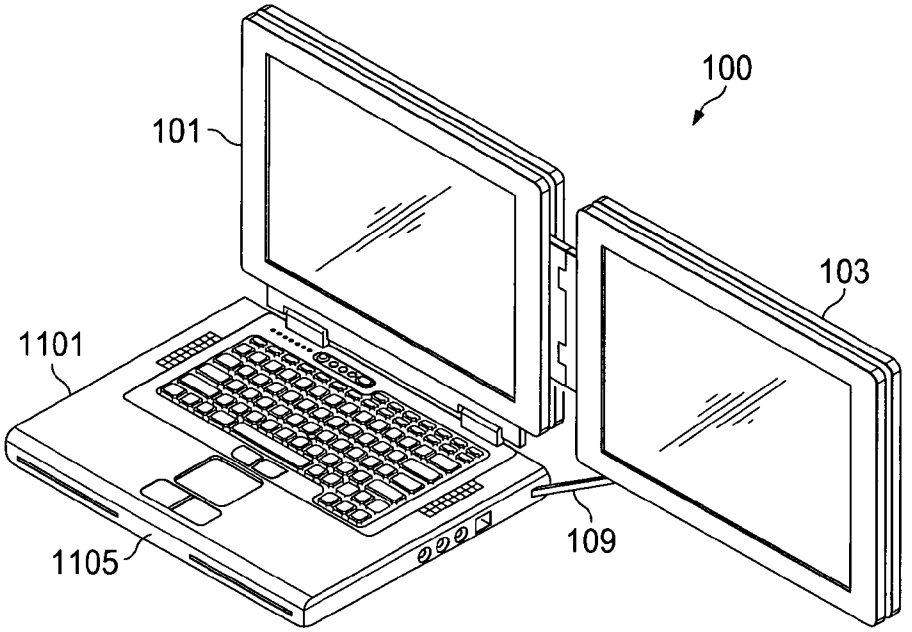

100
101
103
1101
109
1105

FIG. 3

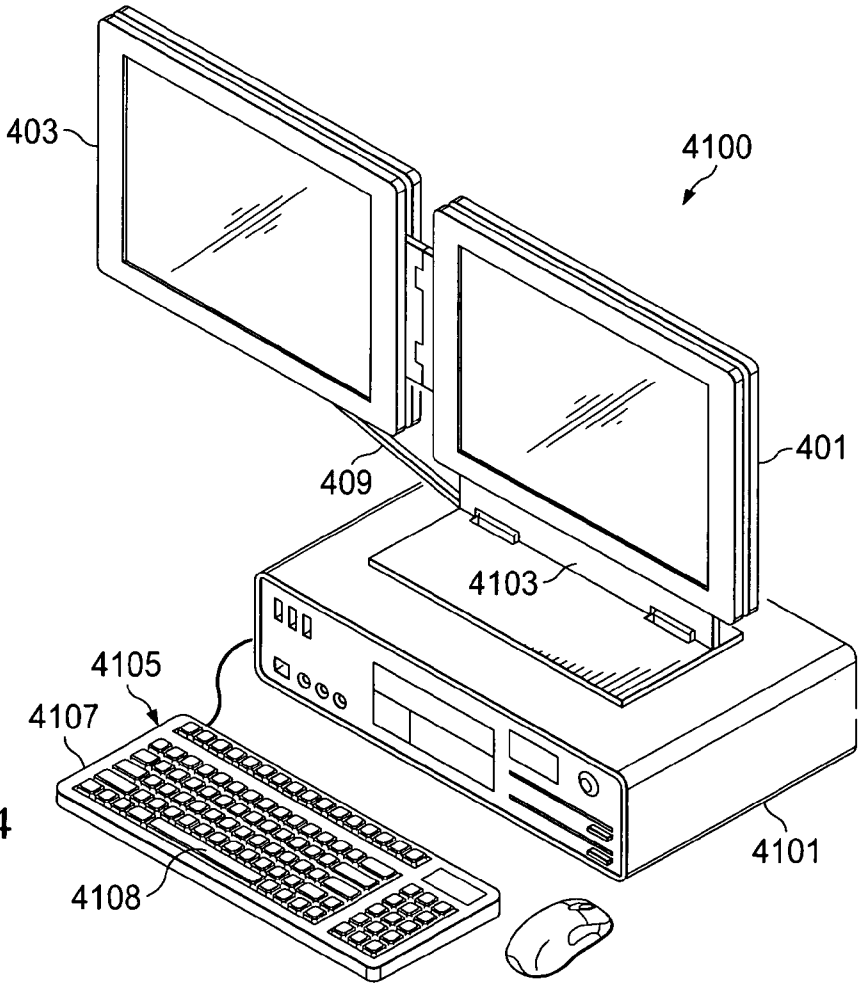

403
4100
401
409
4103
4105
4107
4101
4108

FIG. 4

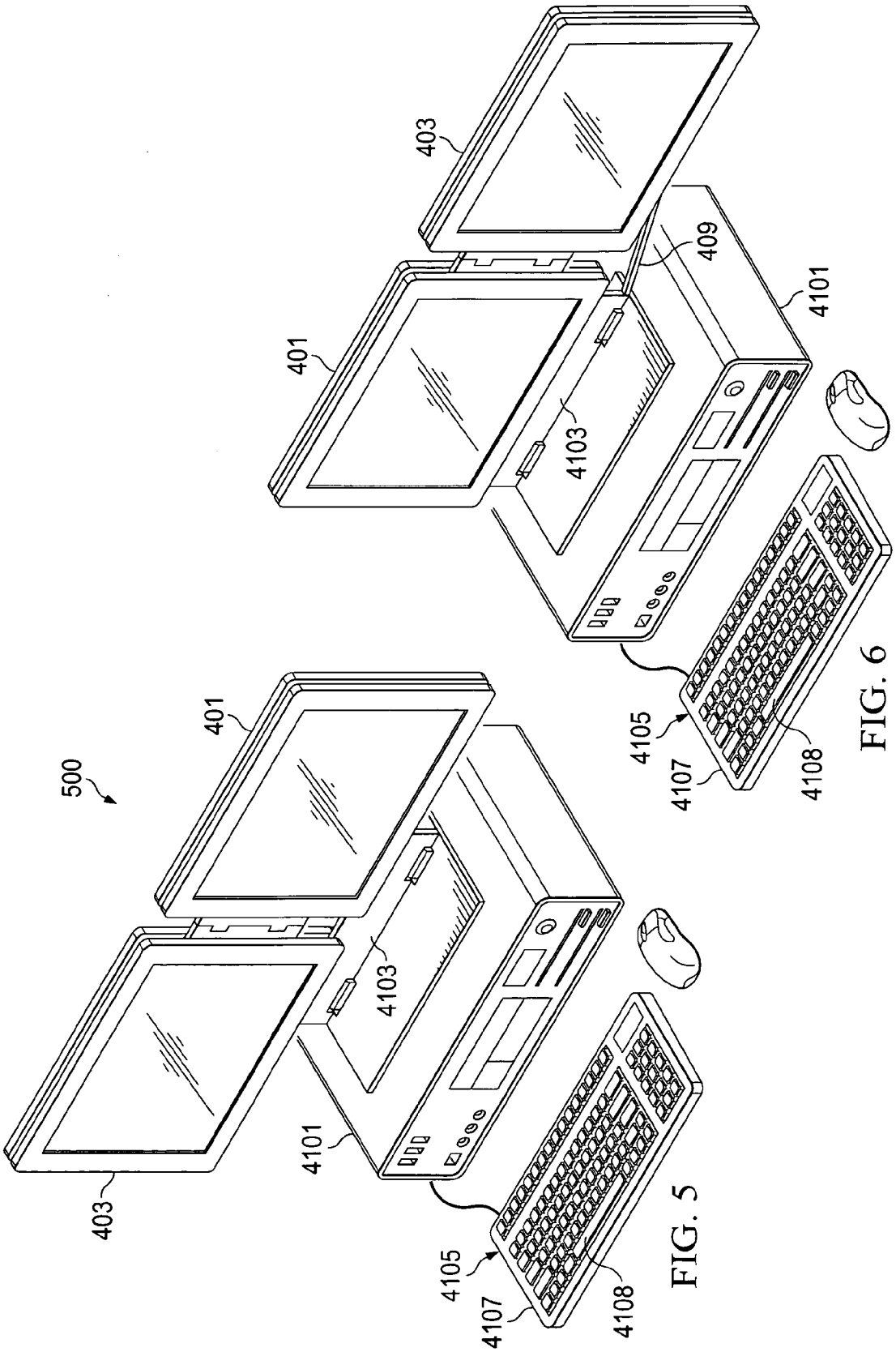


FIG. 5

FIG. 6

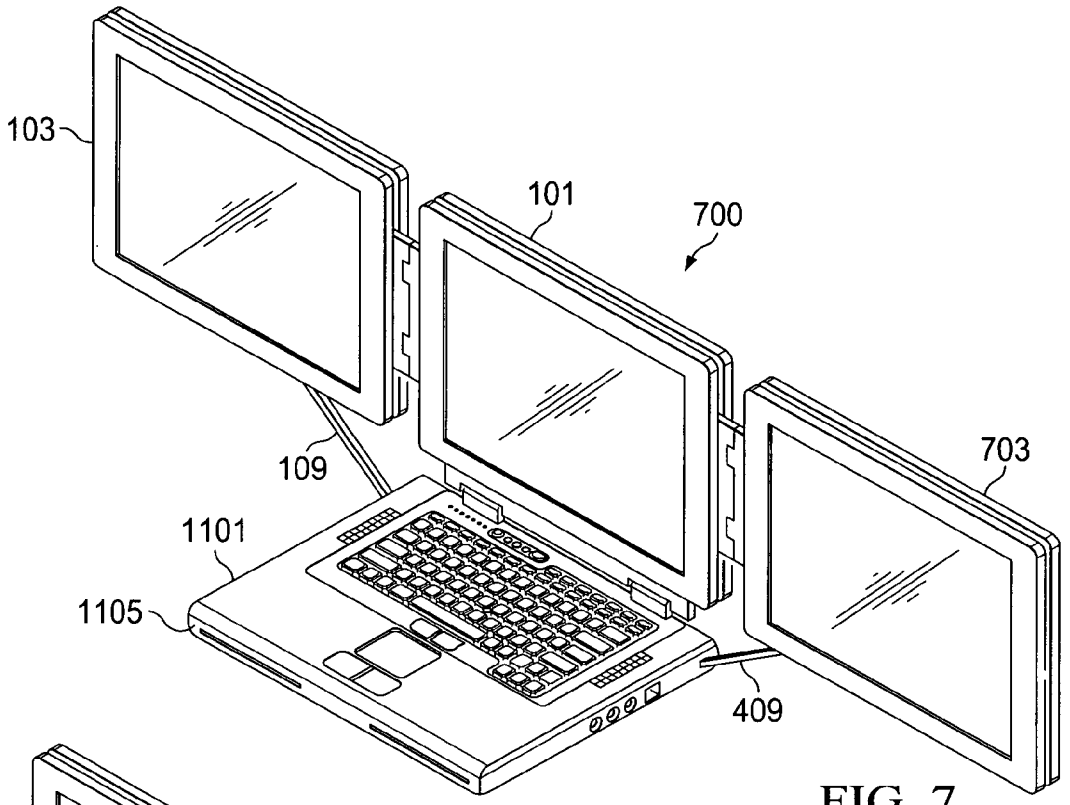

103
101
700
109
703
1101
1105
409

FIG. 7

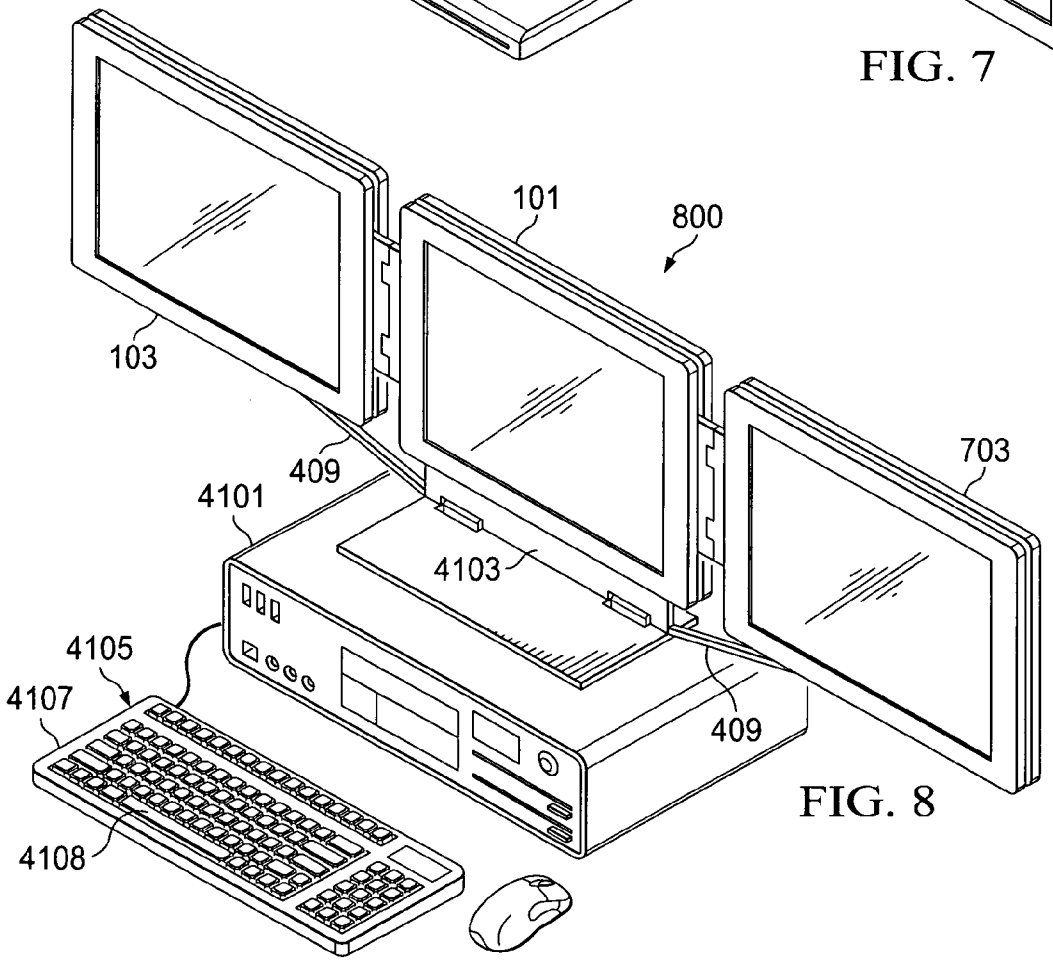

101
800
103
409
703
4101
4103
4105
4107
409
4108

FIG. 8

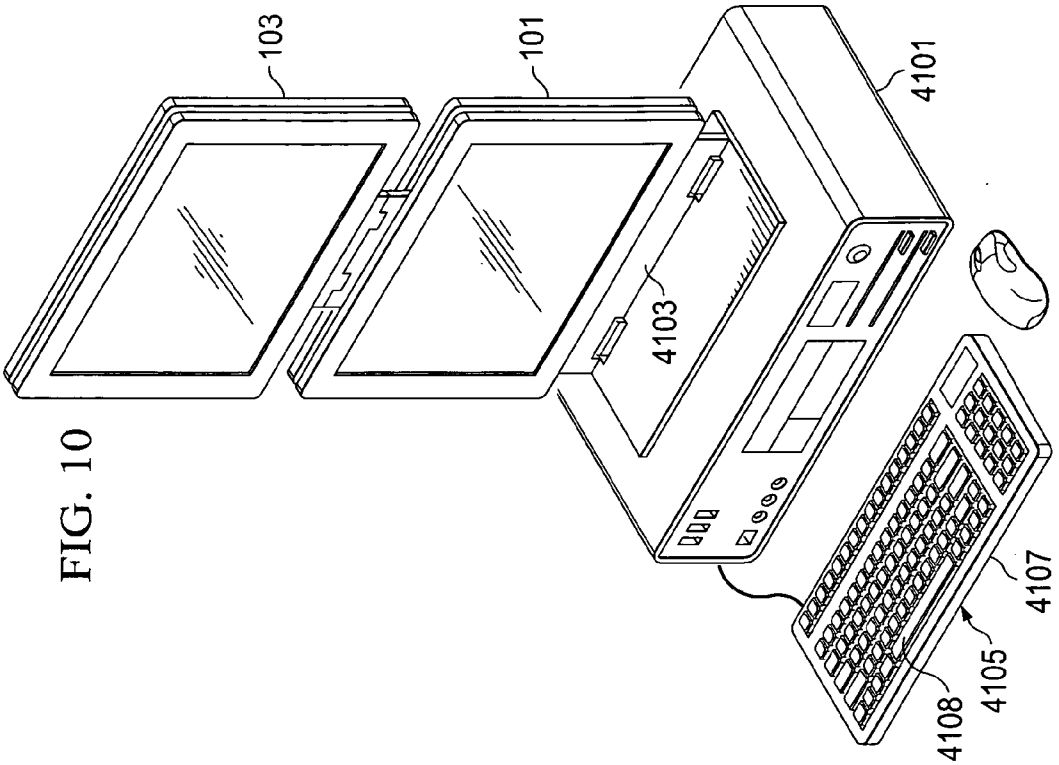


FIG. 10

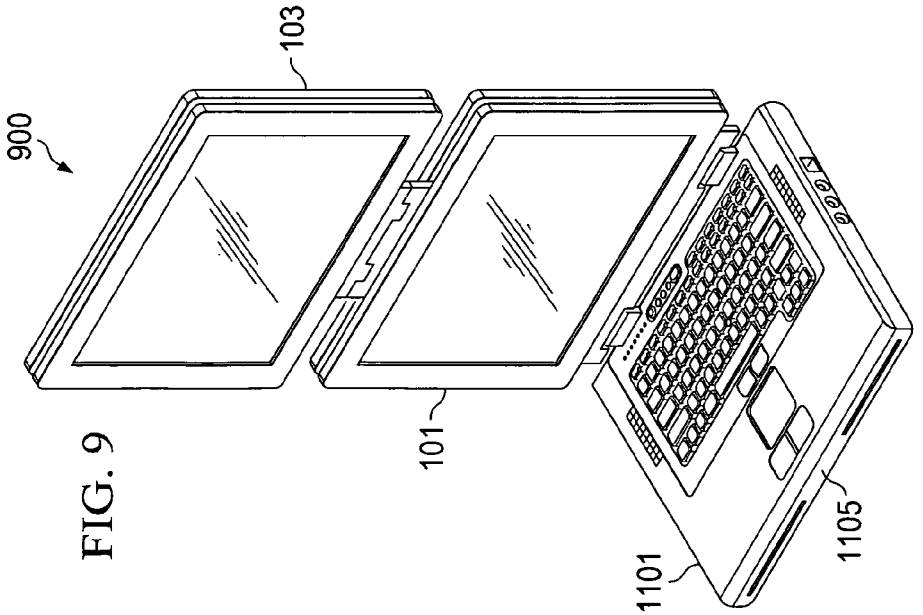


FIG. 9

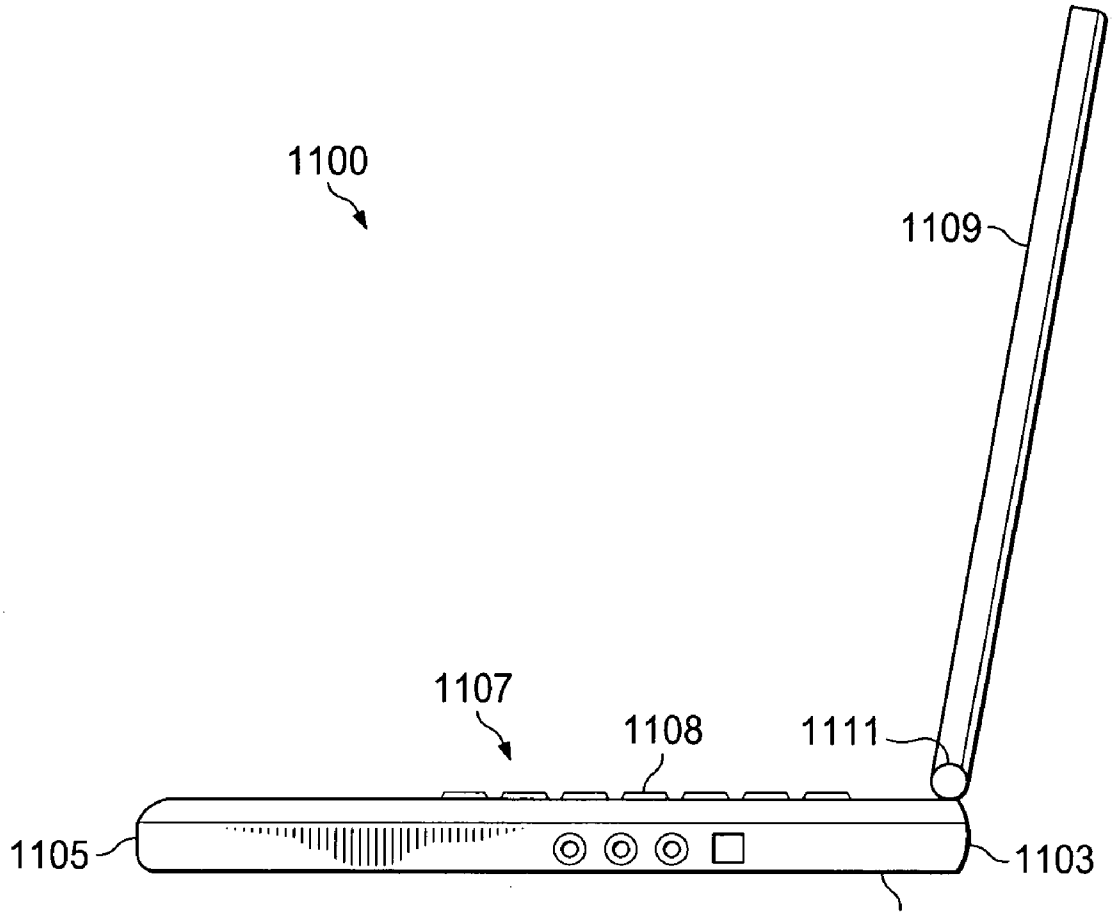


FIG. 11

COMPUTER WITH MULTIPLE SCREENS

FIELD OF THE INVENTION

[0001] The present invention relates to computer display screens. More specifically, the invention relates to a screen for laptop, notebook and personal computers that allows multiple computer displays so that more information can be compared and contrasted by the user.

DESCRIPTION OF THE RELATED ART

[0002] Laptop and notebook computers allow a user to work in virtually any locale while personal computers are more powerful and do not have battery limitations. Wireless communication systems enable workers to send information from a notebook computer or laptop computer to the office, and receive other information in return. Many people therefore work on notebook computers or laptop computer while on public transportation, in coffee shops, or even while waiting in the doctor's office.

[0003] A computer will generally display a single page of the document at one particular instance or at most, a portion of two pages at one particular instance. This is generally unsatisfactory because information that is going into a document may come from another source or multiple sources. Presently, in order to obtain additional information, it is necessary to access a different page. Because of the single screen, this different page must be displayed while the original page is not being displayed. It may be necessary to transfer this additional information back to the original page for example by cut-and-paste; in which case, it is necessary to redisplay the original page. If a great deal of information is to be transferred, this process is cumbersome. It would be extremely helpful if multiple pages could be so simultaneously displayed.

[0004] The display screens of the laptop computer typically utilize a relatively low-powered liquid crystal display (LCD) to reduce power consumption and prolong battery life. Although LCD screens are more efficient, they also produce lower intensity images that are less visible than those of their desktop computer counterparts. Other laptop computers may utilize plasma screens.

[0005] As the advent of the computer age has changed into the computer revolution, constant improvements in the computer field are being sought out. Because more and more people are spending more time sitting in front of a computer monitor, improvements are necessary to enhance the user's ability to view the monitor with as few distractions as possible.

[0006] U.S. Pat. No. 7,134,758 discloses a privacy screen for laptop computer is an expandable hood that may be removably attached to a notebook computer. The privacy screen has an elastic fabric cover secured around an expandable frame. The frame has a plurality of telescoping rods attached to connector pieces using ball and socket joints, which allow the frame to expand concurrently in multiple directions. The screen may be assembled before sale, in which case the screen uses a fixed number of pieces in its frame and the fabric cover is permanently secured to the frame, or provided as a kit, in which cut-out sections of the fabric cover allow the end user to assemble the telescoping rods and connecting pieces as desired. The frame may be secured to the laptop using spring-biased clips.

SUMMARY

[0007] A laptop computer or personal computer may include a base member including computer electronics, a first screen positioned substantially over the base member and electrically connected to the base member, and a second screen extending from the first screen and electrically connected to the base member.

[0008] The second screen may pivot with respect to the first screen, and the second screen may pivot behind the first screen.

[0009] The second screen may move on tracks to extend and retract the second screen, and an arm may connect the base member and the second screen.

[0010] The first screen and the second screen may be substantially centered with respect to the base member, and the laptop computer may include a third screen which substantially horizontally extends from the first screen.

[0011] The second screen may extend substantially vertically from the first screen.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The invention may be understood by reference to the following description taken in conjunction with the accompanying drawings, in which, like reference numerals identify like elements, and in which:

[0013] FIG. **1** illustrates a laptop computer with a first pivoting screen and a second screen;

[0014] FIG. **2** illustrates another embodiment of the laptop computer with the first pivoting screen and the second screen;

[0015] FIG. **3** illustrates another embodiment of the laptop computer with the first pivoting screen and the second screen;

[0016] FIG. **4** illustrates a personal computer with the first screen and a second screen;

[0017] FIG. **5** illustrates in another embodiment of the personal computer with the first screen and the second screen;

[0018] FIG. **6** illustrates another embodiment of the personal computer with the first screen and second screen;

[0019] FIG. **7** illustrates another embodiment of the laptop computer with the first pivoting screen, the second screen and a third screen;

[0020] FIG. **8** illustrates another embodiment of the personal computer showing the first screen, the second screen and the third screen;

[0021] FIG. **9** illustrates another embodiment of the laptop computer showing the first screen and the second screen;

[0022] FIG. **10** illustrates another embodiment of the personal computer showing the first screen and the second screen;

[0023] FIG. **11** illustrates a side view of a laptop computer.

DETAILED DESCRIPTION

[0024] According to the present invention and as shown in FIG. **11**, a laptop computer **1100** is provided which has a base member **1101**, having computer electronics therein, a front portion **1105** and a rear portion **1103**. A display screen **1109** is provided mounted on a display screen mounting mechanism **1111** for pivotal movement between a closed position and an open position, with the display screen **1109** adjacent to the rear portion **1103** of the base member **1101**. The display screen mounting mechanism **1111** includes a structure to permit pivotal movement of the screen in the open position. The laptop computer **1100** may mean a notebook, PDA or other such device.

[0025] A keyboard assembly **1107** having keys **1108** is provided having a front end and a rear end and mounted on the base member **1101** for movement between a retracted position and an extended position or detect the finger position.

[0026] FIG. **1** illustrates a lap top computer **100** in accordance with the teachings of the present invention. FIG. **1**

illustrates a first pivotable screen **101** which is positioned substantially over the base member **1101**, and the first pivotable screen **101** pivots between an open and closed position. FIG. **1** additionally illustrates a second extendable screen **103** which is electrically connected to the base member **1101** and substantially horizontally extends from the first pivoting screen **101**. The second extendable screen **103** may pivot to an open position and a closed position behind or in front of a first pivoting screen **101**. The second extendable screen **103** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track on a frame or hinges formed on the first pivoting screen **101** to move the second extendable screen **103** between the open and the closed position. FIG. **1** additionally illustrates that the second extendable screen **103** may be supported by arm **109** which extends from the base member **1101** to the second extendable screen **103**. The teachings of the present invention can be extended to a third screen or more and can be assembled to form the laptop, note book, PDA or personal computer as a kit or system.

[0027] FIG. **2** illustrates that the first pivoting screen **101** and the second extendable screen **103** has been positioned at substantially the center of the base member **1101**. Both the first pivoting screen **101** and the second extendable screen **103** are electrically connected to the base member **1101**.

[0028] FIG. **3** illustrates that the second extendable screen **103** substantially horizontally or substantially parallel in the opposing direction with respect to FIG. **1**. Both the first pivoting screen **101** and the second extendable screen **103** are electrically connected to the base member **1101**. FIG. **3** illustrates a first pivoting screen **101** which is positioned substantially over the base member **1101**, and the first pivoting screen **101** pivots between an open and closed position. FIG. **3** additionally illustrates a second extendable screen **103** which is electrically connected to the base member **1101** and extends from the first pivoting screen **101**. The second extendable screen **103** may pivot to an open position and a close position behind the first pivoting screen **101**. The second extendable screen **103** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track or channel formed on the first pivoting screen **101** to move the second extendable screen **103** between the open and the closed position. FIG. **3** additionally illustrates that the second extendable screen **103** may be supported by arm **109** which extends from the base member **1101** to the second extendable screen **103**.

[0029] According to the present invention and as shown in FIGS. **4-6**, a personal computer **4100** is provided which has a personal computer base member **4101** and which has computer electronics therein. A detachable keyboard **4105** may be connected to the personal computer base member **4101**. A display screen **401** is provided mounted on a personal computer display screen mounting mechanism **4103** for pivotal movement. The display screen mounting mechanism **4103** includes a structure to permit pivotal movement of the screen.

[0030] The detachable keyboard **4105** includes a keyboard assembly **4107** having keys **4108** is provided on the detachable keyboard **4105**.

[0031] FIG. **4** illustrates a personal computer **4100** in accordance with the teachings of the present invention. FIG. **4** illustrates a first screen **401** which is positioned substantially over the computer display screen mounting mechanism **4103**. FIG. **4** additionally illustrates a second extendable screen **403** which is electrically connected to the personal computer base member **4101** and substantially horizontally extends from the first screen **401**. The second extendable screen **403** may pivot to an open position and a close position behind or in front of the first screen **401**. The second extendable screen **403** may be connected to the first screen **401** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **403** may move within a guide track or frame or hinge formed on the first screen **401** to move the second extendable screen **403** between the open and the closed position. FIG. **4** additionally illustrates that the second extendable screen **103** may be supported by arm **409** which extends from the computer display screen mounting mechanism **4103** to the second extendable screen **103**.

[0032] FIG. **5** illustrates that the first screen **401** and the second extendable screen **403** has been positioned at substantially the center of the computer display screen mounting mechanism **4103**. Both the first screen **401** and the second extendable screen **403** are electrically connected to the personal computer base member **4101**.

[0033] FIG. **6** illustrates that the second extendable screen **403** extends in the opposing direction with respect to FIG. **4**. Both the first screen **401** and the second extendable screen **403** are electrically connected to the personal computer base member **4101**. FIG. **6** illustrates a first screen **401** which is positioned substantially over the computer display screen mounting mechanism **4103**. FIG. **6** additionally illustrates a second extendable screen **403** which is electrically connected to the base member **1101** and substantially horizontally extends from the first screen **401**. The second extendable screen **403** may pivot to an open position and a closed position behind the first screen **401**. The second extendable screen **403** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **403** may move within a guide track or channel formed on the first screen **401** to move the second extendable screen **403** between the open and the closed position. FIG. **6** additionally illustrates that the second extendable screen **103** may be supported by arm **409** which extends from the computer display screen mounting mechanism **1103** to the second extendable screen **103**.

[0034] FIG. **7** illustrates a lap top computer **700** in accordance with the teachings of the present invention. FIG. **7** illustrates a first pivotable screen **101** which is positioned substantially over the base member **1101**, and the first pivotable screen **101** pivots between an open and closed position. FIG. **7** additionally illustrates a second extendable screen **103** which is electrically connected to the base member **1101** and substantially horizontally extends from the first pivoting screen **101**. The second extendable screen **103** may pivot to an open position and a closed position behind a first pivoting screen **101**. The second extendable screen **103** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track formed on the first pivoting screen **101** to move the second extendable screen **103** between the open and the closed position. FIG. **7** additionally illustrates a third extendable screen **703** which is electrically connected to the base member **1101** and substantially horizontally extends from the first pivoting screen **101**. The third extendable screen **703** may pivot to an open position and a closed position behind a first pivoting screen **101**. The third extendable screen **703** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges were other appropriate device. Alternatively, the third extendable screen **703** may move within a guide track formed on the first pivoting screen **101** to move the third extendable screen **703** between the open and the closed position.

[0035] FIG. **8** illustrates a personal computer **800** in accordance with the teachings of the present invention. FIG. **8** illustrates a first screen **101** which is positioned substantially over the personal computer base member **4101**. FIG. **7** additionally illustrates a second extendable screen **103** which is electrically connected to the personal computer base member **4101** and substantially horizontally extends from the first screen **101**. The second extendable screen **103** may pivot to an open position and a closed position behind a first pivoting screen **101**. The second extendable screen **103** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track formed on the first screen **101** to move the second extendable screen **103** between the open and the closed position.

[0036] FIG. **8** additionally illustrates a third extendable screen **703** which is electrically connected to the base member **1101** and substantially horizontally extends from the first screen **101**. The third extendable screen **703** may pivot to an open position and a closed position behind a first screen **101**. The third extendable screen **703** may be connected to the first screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the third extendable screen **703** may move within a guide track formed on the first screen **101** to move the third extendable screen **703** between the open and the closed position.

[0037] FIG. **9** illustrates a lap top computer **100** in accordance with the teachings of the present invention. FIG. **9** illustrates a first pivotable screen **101** which is positioned substantially over the base member **1101**, and the first pivotable screen **101** pivots between an open and closed position. FIG. **9** additionally illustrates a second extendable screen **103** which is electrically connected to the base member **1101** and substantially vertically extends from the first pivoting screen **101**. The second extendable screen **103** may pivot to an open position and a closed position behind a first pivoting screen **101**. The second extendable screen **103** may be connected to the first pivoting screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track formed on the first pivoting screen **101** to move the second extendable screen **103** between the open and the closed position.

[0038] FIG. **10** illustrates a personal computer **100** in accordance with the teachings of the present invention. FIG. **10** illustrates a first screen **101** which is positioned substantially over the personal computer base member **4101**. FIG. **10** additionally illustrates a second extendable screen **103** which is electrically connected to the personal computer base member **4101** and substantially vertically extends from the first screen **101**. The second extendable screen **103** may pivot to an open position and a closed position behind the first screen **101**. The second extendable screen **103** may be connected to the first screen **101** by a pivoting apparatus such as hinges or other appropriate device. Alternatively, the second extendable screen **103** may move within a guide track formed on the first screen **101** to move the second extendable screen **103** between the open and the closed position.

[0039] While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawings and are herein described in detail. It should be understood, however, that the description herein of specific embodiments is not intended to limit the invention to the particular forms disclosed.

1. A laptop computer, comprising:
a base member including computer electronics;
a first screen positioned substantially over the base member and electrically connected to the base member;
a second screen extending from the first screen and electrically connected to the base member.

2. A laptop computer as in claim **1**, wherein the second screen pivots with respect to the first screen.

3. A laptop computer as in claim **2**, wherein the second screen pivots behind the first screen.

4. A laptop computer as in claim **1**, wherein the second screen moves on tracks to extend and retract the second screen.

5. A laptop computer as in claim **1**, wherein an arm connects the base member and the second screen.

6. A laptop computer as in claim **1**, wherein the first screen and the second screen are substantially centered with respect to the base member.

7. A laptop computer as in claim **1**, wherein the laptop computer includes a third screen which substantially horizontally extends from the first screen.

8. A laptop computer as in claim **1**, wherein the second screen extends substantially vertically from the first screen.

9. A personal computer, comprising:
a personal computer base member including computer electronics;
a first screen positioned substantially over the personal computer base member and electrically connected to the personal computer base member;
a second screen extending from the first screen and electrically connected to the personal computer base member.

10. A personal computer as in claim **9**, wherein the second screen pivots with respect to the first screen.

11. A personal computer as in claim **10**, wherein the second screen pivots behind the first screen.

12. A personal computer as in claim **9**, wherein the second screen moves on tracks to extend and retract the second screen.

13. A personal computer as in claim **9**, wherein an arm connects the personal computer base member and the second screen.

14. A personal computer as in claim **9**, wherein the first screen and the second screen are substantially centered with respect to the personal computer base member.

15. A personal computer as in claim **9**, wherein the laptop computer includes a third screen which substantially horizontally extends from the first screen.

16. A personal computer as in claim **9**, wherein the second screen extends substantially vertically from the first screen.

* * * * *