



US 20070062089A1

(19) **United States**

(12) **Patent Application Publication**  
**Homer et al.**

(10) **Pub. No.: US 2007/0062089 A1**

(43) **Pub. Date: Mar. 22, 2007**

(54) **DISPLAY DEVICE**

(22) Filed: **Aug. 31, 2005**

(76) Inventors: **Steven S. Homer**, Tomball, TX (US);  
**Kevin Massaro**, Houston, TX (US);  
**Earl Moore**, Cypress, TX (US)

**Publication Classification**

(51) **Int. Cl.**  
**A47G 1/16** (2006.01)

(52) **U.S. Cl.** ..... **40/754**

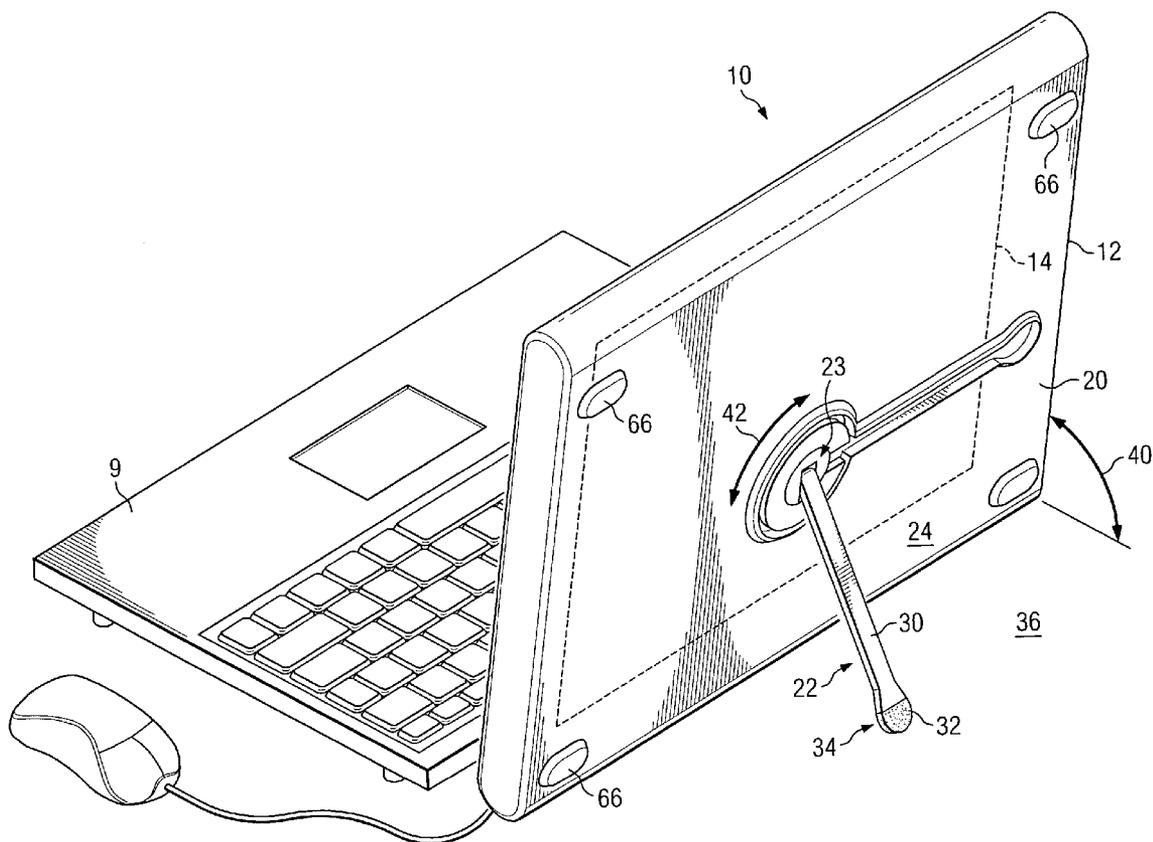
Correspondence Address:

**HEWLETT PACKARD COMPANY**  
**P O BOX 272400, 3404 E. HARMONY ROAD**  
**INTELLECTUAL PROPERTY**  
**ADMINISTRATION**  
**FORT COLLINS, CO 80527-2400 (US)**

(57) **ABSTRACT**

A display device comprises a housing adapted to support a display screen. The display device also comprises a kick-stand support positionable to support the housing in at least two different viewing modes.

(21) Appl. No.: **11/216,734**





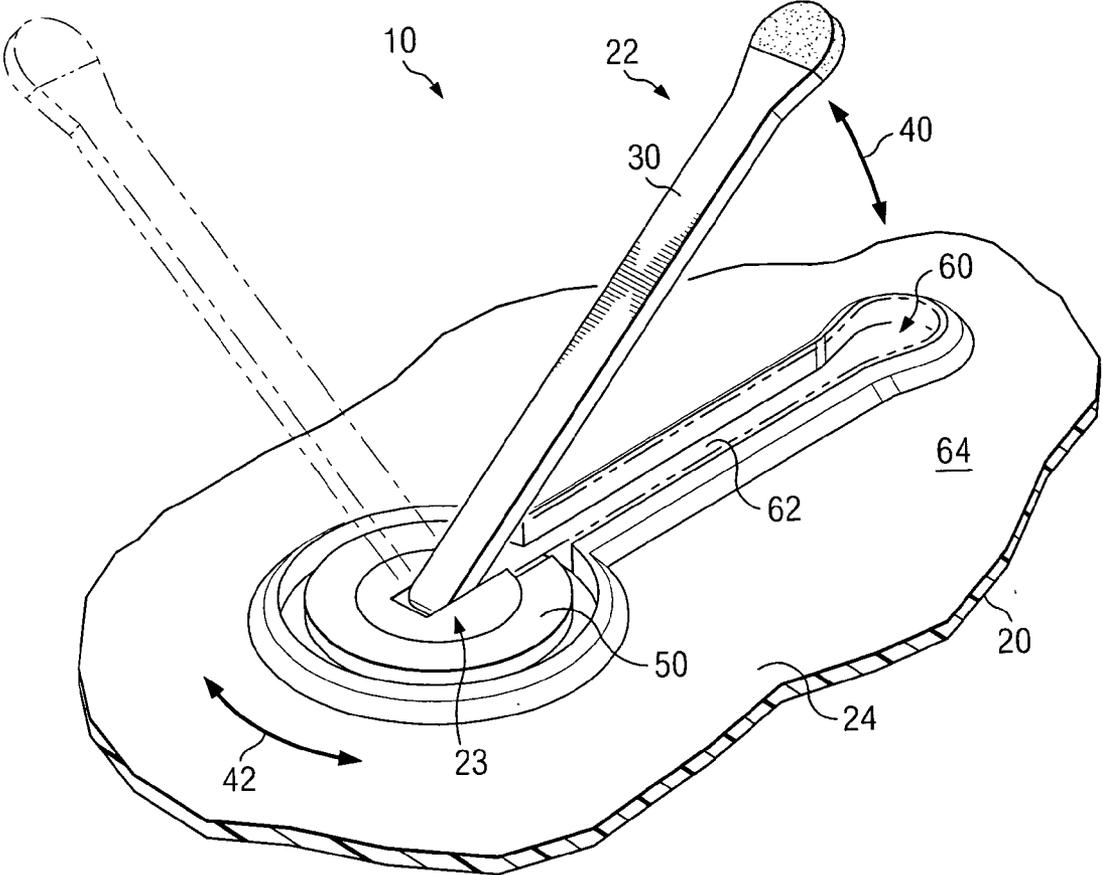


FIG. 2

**DISPLAY DEVICE**

**BACKGROUND OF THE INVENTION**

[0001] Display devices are configured to enable viewing by a user of graphical content displayed thereby and/or to enable input of information by the user to the display device (e.g., via a touch screen and/or pen input method). In some instances, the display device includes a support member to enable positioning the display device in a vertical or near-vertical orientation. However, the number of viewing positions and/or modes desired by a user to facilitate viewing and/or input of information to the display device exceeds those supported by such support members.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0002] For a more complete understanding of the present invention and the advantages thereof, reference is now made to the following descriptions taken in connection with the accompanying drawings in which:

[0003] FIG. 1 is a diagram illustrating an embodiment of a display device in accordance with the present invention; and

[0004] FIG. 2 is a diagram illustrating an enlarged view of a portion of the display device illustrated in FIG. 1.

**DETAILED DESCRIPTION OF THE DRAWINGS**

[0005] The preferred embodiments of the present invention and the advantages thereof are best understood by referring to FIGS. 1 and 2 of the drawings, like numerals being used for like and corresponding parts of the various drawings.

[0006] FIG. 1 is a diagram illustrating an embodiment of a display device in accordance with the present invention. In the embodiment illustrated in FIG. 1, display device 10 comprises a tablet portable computer 12 usable with peripheral device(s) such as, but not limited to, a keyboard 9 and mouse 11. However, it should be understood that display device 10 may comprise other types of computer devices such as, but not limited to, a personal digital assistant, detachable display element of a notebook or laptop computer, or any other type of device having a display screen 14 for displaying image content to a user thereof and/or for enabling a user to input information thereto (e.g., via a touch screen display element and/or pen device).

[0007] In the embodiment illustrated in FIG. 1, display device 10 comprises a housing 20 adapted to support display screen 14 and/or electronic components therein and a kickstand support 22 coupled to a unitary location 23 of a side 24 opposite display screen 14. In operation, kickstand support 22 enables variable positioning of display device 10 in a plurality of viewing angles relative to a user and a plurality of viewing modes relative to a user (e.g., landscape and/or portrait mode). In the embodiment illustrated in FIG. 1, kickstand support 22 comprises a unileg support member 30 (e.g., a single leg and/or support member) pivotally and rotationally coupled to side 24 at location 23 of housing 20 to enable variable positioning of display device 10. In the embodiment illustrated in FIG. 1, kickstand support 22 also comprises a non-skid element 32 disposed and/or otherwise coupled to a distal end 34 of unileg support member 30 relative to housing 20. In operation, non-skid element 32

prevents and/or substantially reduces the likelihood of slipping of unileg support member 30 relative to a support surface 36 for display device 10 (e.g., a desk, table, or other type of working surface). In operation, unileg support member 30 is pivotally coupled to location 23 of housing 20 to enable display device 10 to be positioned in a plurality of viewing angles as indicated generally by arrow 40. Further, in operation, unileg support member 30 is rotatably coupled to side 24 of housing 20 to enable rotation of unileg support member 30 relative to housing 20 in the direction indicated generally by arrow 42 to enable variable positioning of display device 10 into each of a plurality of different viewing modes such as, but not limited to, portrait and landscape mode. In the embodiment illustrated in FIG. 2, device 10 is illustrated as being manufactured such that kickstand support 22 comprises a single member (e.g., unileg 30) extending from unitary location 23 to support surface 36. However, it should be understood that kickstand support 22 may comprise other configurations (e.g., a support member attached to a single location of housing 20 (e.g., unitary location 23) and branching or extending into a plurality of support elements (e.g., a “forked” configuration and/or a plurality of support elements extending in a parallel and/or angular direction relative to each other to support surface 36)).

[0008] FIG. 2 is a diagram illustrating an enlarged view of a portion of display device 10 illustrated in FIG. 1. In embodiment illustrated in FIG. 2, unileg support member 30 is pivotally coupled to a rotator element 50 to enable variable angular positioning of unileg support member 30 relative to housing 20 in the direction indicated generally by arrow 40. In the embodiment illustrated in FIG. 2, rotator element 50 is rotatably coupled to housing 20 to enable rotatable movement of rotator element 50 relative to housing 20 in the direction indicated generally by arrow 42. Thus, in operation, to dispose display device 10 in a desired viewing mode and/or viewing angle, unileg support member 30 is positioned and/or otherwise moved in the direction indicated by arrow 40 and rotated in the direction indicated by arrow 42 to a desired position. In the embodiment illustrated in FIG. 2, unileg support member 30 is pivotally coupled to rotator element 50 to accommodate pivotal movement of unileg support member 30 in a single plane relative to rotator element 50. However, it should be understood that unileg support member 30 may be otherwise coupled to housing 20 (e.g., via a ball and socket-type of coupling method or other arrangement).

[0009] In the embodiment illustrated in FIG. 2, housing 20 is configured to enable storage of kickstand support 22 to facilitate placement of side 24 of display device 10 against support surface 36 (FIG. 1). For example, in the embodiment illustrated in FIG. 2, side 24 of housing 20 comprises a recessed portion 60 for receiving unileg support member 30 at least partially therein such that unileg support member 30 is disposed flush (flush or substantially flush) with at least a portion of side 24 of housing 20. In the embodiment illustrated in FIG. 2, recessed portion 60 comprises a recessed channel 62 for receiving unileg support member 30. In the embodiment illustrated in FIG. 2, recessed channel 62 is illustrated as being slightly elevated relative to a surface 64 of side 24 corresponding to slightly elevated support element(s) 66 (FIG. 1) disposed on side 24 of housing 20 such that when unileg support member 30 is disposed within channel 62, support elements 66 are used to

support display device 10 against support surface 36 without interference from unileg support member 30. However, it should be understood that housing 20 may be otherwise configured to facilitate storage of unileg support member 30 (e.g., in a position at least flush or slightly below surface 64 of side 24 of housing 20).

[0010] Thus, embodiments of the present invention enable variable positioning of display device 10 (e.g., viewing angle(s) and/or display mode(s)) to facilitate viewing thereof (e.g., to reduce glare and/or change a viewing angle) and/or to facilitate input of information thereto (e.g., by enabling variable angular and/or rotational positioning of device 10 to accommodate use of a touch display screen 14 of device 10 and/or the use of an input pen or other device configured to cooperate with display screen 14 for inputting information to device 10).

- 1. A display device, comprising:  
a computer display screen housing; and  
a kickstand support positionable to support the housing in at least two different viewing modes, the kickstand support comprising a rotator element and a support member extending from a unitary location of the rotator element.
- 2. The display device of claim 1, wherein the support member is pivotally coupled to the rotator element.
- 3. The display device of claim 1, wherein the kickstand support is coupled to a side of the housing opposite a computer display screen.
- 4. The display device of claim 1, wherein the housing comprises a recessed portion adapted to facilitate storage of the kickstand support therein.
- 5. The display device of claim 1, wherein the kickstand support is adapted to be stored in a flush position relative to at least a portion of the housing.
- 6. The display device of claim 1, wherein the support member comprises a unileg support member.
- 7. The display device of claim 1, wherein the kickstand support is positionable to support the housing in at least two different viewing angles.
- 8. The display device of claim 1, wherein the kickstand support is rotatably coupled to the housing to enable positioning of a computer display screen in at least portrait and landscape viewing modes.
- 9. The display device of claim 1, wherein the rotator element is rotatably coupled to the housing and the support member is pivotally coupled to the rotator element.
- 10. The display device of claim 1, wherein the housing is configured to enable flush storage of the kickstand support relative to at least a portion of a side of the housing opposite a computer display screen.

11. A method for manufacturing a display device, comprising:

coupling a kickstand support to a computer display screen housing of the display device, the kickstand support adapted to position the housing in at least two different viewing modes, the kickstand support comprising a rotator element and support member extending from a unitary location of the rotator element.

12. The method of claim 11, wherein coupling the kickstand support comprises rotatably coupling the kickstand support to the housing.

13. The method of claim 11, further comprising providing the kickstand support having the support member pivotally coupled to the rotator element.

14. The method of claim 11, further comprising providing the kickstand support having a unileg support member pivotally coupled to the rotator element.

15. The method of claim 11, further comprising providing the housing having a recessed portion adapted to facilitate storage of the kickstand support therein.

16. The method of claim 11, further comprising providing the housing configured to enable flush storage of the kickstand support relative to at least a portion of a side of the housing opposite a computer display screen.

17. The method of claim 11, further comprising providing the kickstand support configured to enable positioning of a computer display screen in at least portrait and landscape viewing modes.

18. The method of claim 11, further comprising providing the kickstand support configured to enable positioning of a computer display screen in at least two different viewing angles.

19. (canceled)

20. (canceled)

21. An electronic display device, comprising:

a housing disposed about a display screen; and

a kickstand support positionable to support the display screen in at least two different viewing modes, the kickstand support comprising a rotator element and a support member pivotally coupled to the rotator element.

22. The device of claim 21, wherein the electronic display device is usable with at least one peripheral device.

23. The device of claim 21, wherein the display screen is configured to receive user input.

24. The device of claim 21, wherein the electronic display device comprises a tablet portable computer.

\* \* \* \* \*